PUBLIC PRIVATE PARTNERSHIPS IN ROAD TRANSPORT INFRASTRUCTURE IN INDIA: A GOVERNANCE PERSPECTIVE

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Public Private Partnerships in Road Transport Infrastructure in India: A Governance Perspective

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ABSTRACT

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Public Private Partnerships or PPPs are being increasingly preferred by governments across the world for filling the infrastructure deficit, as they are claimed to provide access to private capital, and bring private sector efficiencies in provisioning of public services. In India too, a distinct policy shift towards PPPs in various sectors has been observed accompanied by a high degree of reliance on such partnerships to upscale the transport infrastructure. A growing body of literature however reveals serious flaws in the claims of economic superiority, effectiveness and profitability of the PPPs. They are being questioned on various accounts of transparency, accountability, equity, and excessive profiteering by the private partners. This gives rise to an advocacy for the enhanced role of the State in governance of PPPs. In this background, this research explores the nature of division of roles and responsibilities, allocation of risks and sharing of benefits by the State and the private partners within the PPPs in the context of road transport sector in India. It further examines the extent of investment of resources by the private partners in the projects. The factors shaping PPPs in road transport in India are also examined. This research suggests measures to strengthen the structures and mechanisms within the public and private partners to improve public infrastructure within the PPP framework.

In order to achieve the research aims, and to gain a deeper perspective of the governance issues of PPPs from different administrative levels, two national and two state highways (one in construction while the other in operational stage in both cases) along with an intra-city transport project, part of which is already operationalised, were selected for the study. This study is rooted in critical realism according to which understanding of any social phenomenon can be achieved through study of the underlying multi-layered structures and mechanisms which cause the phenomenon.

Research findings reveal that while PPP projects in highways largely followed the theoretical model of PPPs, the urban transportation project was found to be substantially deviating from a general PPP model discussed in the literature due to the unique requirements of urban transport infrastructure in India. The widely accepted argument of PPPs bringing in private capital to public services has been debunked by the Ahmedabad Bus Rapid Transit System (ABRTS). The project is substantially funded by the national and state governments due to limited incentives for the private sector to invest in these projects under BOT mode. The under-developed capability within the private sector in urban transportation projects in India resulted in unbundling of services rather than one private agency providing all of them. The local urban body has retained several risks as it more suitably located to bear them more efficiently.

In the PPPs in highways, the public partner has shifted many of its responsibilities to the concessionaire primarily due to shortage of adequate manpower with the public partner, and the incentive of timely completion of the project with the private partner. Adoption of the PPP mode in highways has not been able to avoid time and cost over-runs, largely due to the public partners not meeting their share of responsibilities. Land acquisition has emerged as the single most contentious issue of PPPs in infrastructure in India and is the major cause for delay in PPP projects. In addition, serious issues in land-grabbing and profiteering by the private partners have also been observed.

A more active role of the State in PPPs is suggested to improve the delivery of public services through the PPP mode. This may require establishing additional structures and mechanisms of governance to meet the emerging requirements of these new modes of procurement, and to strengthen the existing ones.

DECLARATION

I hereby declare that no portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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ABBREVIATIONS

ABRTS	Ahmedabad Bus Rapid Transit System
ADB	Asian Development Bank
AFCS	Automatic Fare Collection System
AJL	Ahmedabad Janmarg Limited
AMC	Ahmedabad Municipal Corporation
AMTS	Ahmedabad Municipal Transport Service
AUDA	Ahmedabad Urban Development Authority
AVCC	Automatic Vehicle Counter cum Classifiers
AVLS	Automated Vehicle Locating System
AVM	Ahmedabad Viramgam Maliya
BIG	Blueprint for Infrastructure
BOQ	Bill of Quantity
BOT	Built Operate Transfer
BRTS	Bus Rapid Transit System
CA	Concession Agreement
CAG	Comptroller and Auditor General
CALA	Competent Authority for Land Acquisition
CCEA	Cabinet Committee on Economic Affairs
CCI	Cabinet Committee on Infrastructure
CEPT	Centre for Environmental Planning and Technology University
CGM	Chief General Manager
COD	Commercial Operation Date
COI	Committee on Infrastructure
COPU	Committee of Parliament on Public Undertakings
CRISIL	Credit Rating and Information Services of India Ltd.
CV	Curriculum Vita

DBFO	Design, Build, Finance, Operate
DC	Deputy Commissioner
DEA	Department of Economic Affairs
DGM	Deputy General Manager
DLP	Defect Liability Period
DPR	Detailed Project Report
EC	European Commission
EPC	Engineer Procure Construct
ETC	Electronic Toll Collection
EU	European Union
FDI	Foreign Direct Investment
FIs	Financial Institutions
FYP	Five Year Plan
GDP	Gross Domestic Product
GEB	Gujarat Electricity Board
GIDB	Gujarat infrastructure development Board
GIPL	Gujarat Informatics Petroleum Limited
GM	General Manager
GMDC	Gujarat Mineral Development Corporation
GPS	Global Positioning System
GSDP	Gross State Domestic Product
GSRDC	Gujarat State Road Development Corporation
GSRTC	Gujarat State Road Transport Corporation
GWSSB	Gujarat Water Supply and Sewerage Board
HCV	Heavy Commercial Vehicle
HO	Head Office
IC	Independent Consultant
IFC	International Finance Corporation

IIFC	India Infrastructure Finance Company
IMF	International Monetary Fund
iNDEXTb	Industrial Extension Bureau
IRB	M/s. Ideal Road Builders Ltd.
IT	Information Technology
ITDP	Institute for Transportation and Development Policy
ITF	International Transport Forum
ITMS	Integrated Transport Management Systems
JBIC	Japan Bank for International Cooperation
JnNURM	Jawaharlal Nehru National Urban Renewal Mission
L&T	M/s. Larsen & Toubro Ltd.
LASA	M/s Lea Associates South Asia
LOA	Letter of Acceptance
MCA	Model Concession Agreement
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MIGA	Multilateral Investment Guarantee Agency
MLA	Member of Legislative Assembly
MoEF	Ministry of Environment and Forests
MoRTH	Ministry of Road Transport and Highways
MOU	Memorandum of Understanding
MP	Member of Parliament
MSRDC	Maharashtra State Road Development Corporation
NCPN	Non Confirmatory Project Notification
NDTV	New Delhi Television
NH	National Highway
NHAI	National Highways Authority of India
NHDP	National Highway Development Programme
NPM	New Public Management

NPV	Net Present Value
NSSO	National Sample Survey Organisation
O&M	Operation and Maintenance
OECD	Organisation for Economic Co-operation and Development
PCU	Passenger Car Unit
PD	Project Director
PFI	Private Finance Initiative
PFR	Pre-Feasibility Report
PIB	Press Information Bureau
PIL	Public Interest Litigation
PIS	Public Information System
PIU	Project Implementation Unit
PMC	Project Management Consultant
PPPAC	Public Private Partnership Appraisal Committee
PSC	Public Sector Comparator
RFP	Request for Proposal
RFQ	Request for Qualification
RNBD	Roads and Buildings Department
RO	Regional Office
ROB	Rail-Over-Bridge
ROW	Right of Way
RTI	Right to Information
SH	State Highway
SLA	Service Level Agreements
SPV	Special Purpose Vehicle
SSA	State Support Agreement
STQC	Standard Technical Qualification Contract
TPC	Total Project Cost

UIF	Urban Infrastructure Fund
UK	United Kingdom
ULB	Urban Local Body
UP	Uttar Pradesh
USA	United States of America
USSA	Umbrella State Support Agreement
VfM	Value for Money
WB	World Bank
WDR	World Development Report
WPI	Wholesale Price Index

LIST OF TABLES

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This research was undertaken with the purpose of generating deep understanding and knowledge about PPPs in road transport infrastructure in India with the purpose to enhance their efficiency and effectiveness. Recommendations made as part of this research are aimed at creating sturdy structures and mechanisms within the two partners, to provide services of superior quality to the people. This would not have been possible without the permission of the Ministry of Information and Broadcasting of the government of India which granted me study leave to enable me to pursue this intense long-term programme. I thank all the officers who have made this possible. I express my deepest gratitude to Mr. Raghu Menon, Secretary to Ministry of Information and Broadcasting, who took special interest in the matter and made this possible.

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CHAPTER 1

RESEARCH DESCRIPTION AND SIGNIFICANCE

1 Context of research

1.1 Introduction: Public Private Partnership

Public Private Partnerships or PPPs are being widely preferred as an alternative mode of delivery of public services in both the industrialised and low-income developing countries (Wettenhall, 2003). Although PPPs are being increasingly adopted in health, education, water industry, and urban municipal services like sanitation, waste disposal and slum improvement there has been greater prevalence of PPPs in the infrastructure sector. While the meaning of the term 'PPP' may have contextual explanation within the broader socio-economic, cultural and country context in which it operates (Hodge, 2009; Osborne, 2000; Atkinson and Coleman,1992), it is broadly described as a long-term cooperative and contractual institutional arrangement between the government[1] and the private[2] sector structured towards achieving a desired public goal (Linder, 1999). Within these arrangements, the partners jointly develop products and services and share the associated costs, risks and profits (Klijn and Teisman, 2000). PPPs are argued to provide the services more efficiently than the government could accomplish on its own (Akintoye, 2009). The partners for PPP projects in infrastructure sector pool their differentiated and specialised resources[3] for planning, design, construction, operation and maintenance of the infrastructure and share risks, investments, benefits and responsibilities (Grimsey and Lewis, 2005).

PPPs have been largely analysed within the perspectives of engineering, economics and legal issues, and project financing and management. A new trend is seen to be emerging

[1] The terms State, government, public sector, public agencies and public institutions, unless otherwise stated, are used interchangeably. 'State' is written with capital 'S' to differentiate it from the term 'state' meaning a province or a sub-national administrative unit.

[2] For the purpose of this study the term 'private' or 'private sector' generally refers to the sector other than the public sector, which exists for profit. Other agencies such as non-profit voluntary organisations, also called the Non-Governmental Organisations (NGOs), academic institutions and community organisations are referred to as non-State agencies.

[3] '*Resources*' are defined as strengths that organisations have and use to improve their efficiency and effectiveness (Barney, 1991). Scholars have proposed a number of typologies. They may be human resources (Becker, 1964), physical resources (Williamson, 1975) and organisational resources (Tomer, 1987). They may be tangible or intangible (Grant, 1991), or financial, technological and managerial (Das and Teng, 1998). Miller and Shamise (1996) differentiate between knowledge and property-based resources.

that focuses on locating PPPs within the discourses of governance and public policy. PPPs are seen as an alternative way of provisioning of public services which were hitherto characterised by pervasive presence of the government. Termed as 'integration alliances' (Chen and Chen, 2003), PPPs are described as an effort of collaboration, cooperation, communicative governance and co-management with the private actors (Kooiman, 2003). They are argued to coalesce synergies of the government and the market by bringing together distinct resource advantages of the two (Osborne, 2000; Rosenau, 2000; Pierre, 1998) across the conventional public-private divide to bring about collaborative advantage (Panayotou, 1997; Huxman, 1996; Prahalad and Doz, 1987).

In context of the above, the focus of this research is to explore and examine PPPs in road transport infrastructure in a low-income developing country, India, from a governance perspective. This research aims to identify the issues of governance in PPPs in road sector in India. It further aims to understand and analyse the diverse structures and mechanisms emerging from the domains of the government and the private sector that shape the issues of governance, and to assess the need to modify the governing structures and mechanisms to achieve better efficiencies of PPPs in delivery of road transport services.

1.2 Analysing the growth of PPPs

On a broad canvas the wide acceptance of PPP is argued to reflect the transformation of the State-market relationship. There has been a clear theoretical divide between the 'public' and 'private' sectors, and 'public' and 'private' goods. Traditionally, the government provided 'public' goods to prevent negative externalities of the market, and in order to meet its social and sovereign mandate (although, there have been differences among scholars as to what constitutes a pure public good). There has been an ongoing debate in literature regarding State intervention in markets and merits of private versus government provision of goods and services (Shleifer, 1998; Streeten, 1987). Subsequent to a period of domination of the government in almost all sectors (directly and indirectly), through an era of market preponderance due to 'State failure', countries again started to look towards government initiatives and interventions to tide over 'market failure' to ensure that public interest was not left to price-determined market vagaries (Walsh, 1995; Kruger, 1990). The government was again seen as the best bet to take countries to 'commanding heights'. However, issues concerning inadequacy and

inefficient delivery were also observed with excessive government provisioning (Pessoa, 2008; Estache, 2006). PPPs emerged in response to this situation as a form of governance which is argued to be midway between a purely 'State-directed' or 'market-oriented' way to provide public good (Hodge and Greve, 2009). In addition to providing mix of resources of both the sectors, they are claimed to be devoid of their dysfunctions (Börzel, 1997).

The growth of PPPs is credited to the implicit assumption that the market stands for better efficiencies in production and delivery of services, and partnering with the market is perceived to improve efficiency gains for the government. The access these partnerships provide to private capital (Hodge and Greve, 2005), market knowledge and skills in technologically-intense fields, discipline and entrepreneurial spirit of the private partner, its project financing and management skills, effective organisation and innovation (Field and Peck, 2003) has been cited as reasons for the growing interest in this mode of service delivery. In addition, other benefits of PPPs include private sector efficiencies towards better risk management (Ward *et al*., 1991), emphasis on value for money and cost-effectiveness over life of the project (Akintoye, 2009), lowered transaction costs (Chen and Chen, 2003), overall reduced total project cost (Mothe and Quelin, 2001; Jarillo, 1998), and flexible and adaptable forms that allow them to respond more nimbly to uncertainties and opportunities (Provan and Kenis, 2007). These features make them distinctively different from the traditional contract-based procurement method which was found to have several limitations for projects characterised by a high degree of product specificity (Klijn and Teisman, 2000). Low-income countries are relying on PPPs as part of their overall public sector reforms to fund infrastructure services and to fill the 'capability gap' (Akintoye, 2009; Pessoa, 2008).

1.3 PPPs as a new form of governance

Partnerships between the State and private sector are lately being located within the emergent discourses on governance, and PPPs are being viewed as new 'governance tools' where multiple agencies inform the policy process, and public sector objectives are served by inter-dependent amorphous agencies having differentiated expertise (Osborne, 2006). It is argued that the State or the private actors alone do not possess all the knowledge to find solutions to diversified problems that the State faces (Kooiman,1993); to be effective, governments must blend their capacities with those of

the non-governmental actors (Stone, 1993). In the new mode, the State operates in a catalytic mode by forging coalitions and networks with non-State actors for pursuing its social objectives (Weiss, 1997; Marsh and Rhodes, 1992; Rhodes, 1990; Gourevitch, 1986). PPPs are argued to signal a shift from 'institutional government' to 'networked governance' (Goodsell, 2006; Goldsmith and Eggers, 2004) where governments are redefining themselves through partnerships with private agencies (Henry, 2007; Hill and Lynn, 2005; Kohler-Koch, 1999). These are often loosely referred to as horizontal or hybrid, non-hierarchical forms of governance which typically mix virtues of State, such as accountability, transparency and public purpose, and efficiency and quality attributes of the market (Mayntz, 1994).

1.4 Important issues concerning PPPs

Despite the perception that 'infrastructure partnerships symbolize modern, fast and efficient public administration' (Hodge, 2009: 2), comprehensive review of worldwide experience of PPPs has revealed that there is evidence to be cautious and even sceptical about them (Hodge, 2009; Boase, 2000). They have been termed as a *Faustian bargain* (Flinders, 2005; Peters and Pierre, 2004), while doubts have been expressed regarding their 'social desirability' (Vining and Boardman, 2008: 11). There have been serious concerns in respect to their governance aspects including transparency, accountability, equity and efficacy under all conditions, and the risk of being captured by the elite (Rosenau, 1999; Peters and Pierre, 1998; Ragin, 1994; Lowi, 1979). A growing body of literature studying PPPs in the OECD and capitalist countries has found serious flaws with the claims of economic superiority, effectiveness and profitability of the PPP mode (Shaoul, 2009; Smith, 2009; Hodge and Greve, 2007; Pollock *et al*., 2007; Shaoul, 2005; Walker and Walker, 2000). Analysts have been wary of veracity of measures used to determine VfM (value for money) and cost effectiveness of these projects pointing out that inaccurate discount rates, and flimsy and unprofitable risk analysis based on subjective criteria are often employed for estimation (Ball *et al*., 2007; Fitzgerald, 2004). There have been allegations of excessive profiteering (Toms *et al*., 2009), hidden wealth transfers to the financiers, and deliberate attempts by governments to showcase their perceived efficiency and inflated savings (Shaoul, 2009). Studies have also revealed flawed evidence to support claims of improved time and cost over-runs (Pollock *et al*., 2007). Some critics (e.g. Shaoul, 2011) suggest a subtle political power shift towards the private sector based on its capital power, through the PPPs.

Additionally, lack of clear government objectives and poorly defined sector policies, low credibility of government policies, complex decision making, inadequate legal and weak regulatory and supervisory mechanisms, and poor risk management by the government in the context of PPP have been highlighted by several studies (Kwak *et al*., 2009; Li *et al*., 2005; Zhang, 2005; Klijn and Teisman, 2003). Political, economic, administrative and social contexts have been found to result in various forms of barriers to acceptance of PPPs in some low-income countries (Clarke, 2000; Hentic and Bernier, 1999; Haque, 1996). Lack of a competent market to fulfil the presumed arrangements, marked difference between norms and practices of administration, and ascriptive rather than achievements-based criteria for allocation and distribution of recourses are observed to impede success of PPPs (Peters, 2001). Studies of some East Asian countries demonstrate that 'crony capitalism' and 'clientelistic' nature of decision making seriously undermine market efficiency and benefit a few powerful (Clarke, 2000; Jomo and Gomez, 2000; Geddes, 1994).

1.5 Governance of PPPs: Role of the State

In the background of increasing concerns about the claims regarding the financial and efficiency benefits of PPPs, and more fundamental issues of equity, access and protection of public interest, there is convergence of opinion among scholars that the strength of governing activities of the State does not diminish when private sector gets involved in provisioning of services, but merely changes as the government assumes new responsibilities (Allard and Trabant, 2007; Grimsey and Lewis, 2005; Hirst and Thompson, 1995; Kettl, 1993). Rejecting demands for a 'minimalist State', there is growing support for a significant and active role of the State in the partnership with the private sector (Peters, 1998; Weiss, 1997; Evans, 1995). In this view, the State is the key source of constitutional legitimacy with legal authority and social mandate to seek and protect public interest, ensure equity, continuity and stability of services, prevent discrimination or exploitation, and ensure social cohesion (Goodsell, 2006; Osborne and Gaebler, 1992; Badie and Birnbaum, 1983). Many of the concerns regarding governance of PPPs stem from the inherently different, and sometimes conflicting, policy and business interests of the two partners (Peters, 1998; Reijniers, 1994; Streeten, 1983). The governments are therefore required to transit from the role of the financer, controller and commander to a wider one of regulator and facilitator (Goodsell, 2006; Hodge, 2005; Stoker, 2000). An enlarged role of the State has been advocated for

engaging in wider process of formulating policies and mechanisms for allocating and coordinating recourses, influencing and structuring economic and market space (Kjaer, 2004; Jessop, 2003; Gourevitch, 1986). A need is felt for a competent government which can 'tightly' govern PPPs through stringent oversight mechanisms (Skelcher, 2010; Salamon, 2002).

1.6 PPPs in India

Although PPPs as a means of delivery of public services are comparatively recent in India, increasing reliance has been placed on private sector participation for fulfilling the country's infrastructure deficit (Planning Commission, 2010a). As a policy choice, PPPs are perceived to enable access to private sector resources and expertise to enhance efficiency of infrastructure projects, and improve service delivery. In terms of investment, while private participation was about 36% of total infrastructure investment during 2007-2012, it is expected to reach 50% of the planned investment of about US $1 tn (about 10.8% of the country's GDP) in 2012-2017. Within developing low–income countries, India is reported to have the largest market for private participation in infrastructure (World Bank, 2010).

The roads sector has had maximum incidence of PPPs in the last decade comprising of 60% of total PPP projects in the country. About 93% of all the road projects in India have been developed as PPPs during the last five years. The largest national roads and highways development programme in the country, and one of the largest in the world, is being developed through the PPP mode. India has the second largest road network in the world. Targeted investments in the road sector have been doubled to about INR 3140 bn[4] for 2012-2017 over 2007-2012.

It is widely argued in the literature that unless the partnerships are carefully structured, supervised, regulated and governed, they may collapse with all the responsibility of managing the projects eventually falling on the government. The partnerships while seemingly performing well may also cause losses to the State through 'accounting trickery'. There is no compelling evidence to assume that private participation *suo moto* enhances efficiency of public services. In India, substantial funds are being committed to developing crucial national infrastructure through this approach that potentially

[4] INR- Indian Rupees. Current exchange rate: 1.00 USD= 55.567 INR; 1 GBP=88.34 INR [Available at: http://www.xe.com/ucc/convert/?Amount=1&From=GBP&To=INR Accessed 4 September 2012].

affects public interest in terms of quality of service and cost implications to the consumers and taxpayers. It has been observed that a lot of rhetoric surrounds PPPs, and at times the crucial issues tend to get muddled in a 'language game' with the meaning of PPPs being ambiguous for policymakers and private sector alike (Shaoul, 2009; Pollock *et al*., 2007; Shaoul, 2005). Furthermore, 'introduction of market-based procedures encourages the belief that solutions to those further difficulties that have emerged are most logically to be found in a further dose of the same medicine' (Deakin and Walsh, 1996: 36). It thus follows that an active role of the State within PPPs is likely to enhance their effectiveness and efficiencies as modes of providing public services. Furthermore, any discussion of provisioning of public services seems to be incomplete without discussing the larger issues of governance and role of the State in such arrangements.

2 Research agenda

In the background of the aforementioned context, the overarching aim of the study was to examine the underlying structures and mechanisms shaping PPPs in the delivery of road infrastructure services in India, assess the need to modify such structures and mechanisms, and suggest measures to achieve better efficiencies in delivery of road infrastructure services.

The broad objectives which emerged from this aim were:

1. To examine whether PPPs in the road sector in India are 'partnerships' and 'network' forms of governance, as generally defined in the literature on PPPs.
2. To investigate and identify the factors located within the structural domains of the two partners causing the divergence, if any, in road transport infrastructure in India, from widely discussed theoretical positions regarding the properties of PPPs.
3. To make recommendations for the public and private partners to improve the delivery outcomes within PPPs in road infrastructure in India.

The following questions concerning my research emerged out of the aforementioned objectives:

1. What is the nature of division of roles and responsibilities, and allocation of risks between the government and the private partners during the phases of

planning, design and implementation of the PPPs in road infrastructure sector studied for this research?

2. To what extent have private sector resources been attracted in the PPPs in road infrastructure sector?
3. Are the answers to the above two questions in accordance with the widely accepted theoretical propositions on PPPs? If not, what may be the causal factors emerging from the administrative, organisational, political, economic and ideological structures and mechanisms of the public and private domains causing such divergence in Indian context, and what are its implications?
4. How the existing structures and mechanisms within the State and the private sector, shaping and causing the prevailing characteristics of PPPs in the road sector in India, may be strengthened in order to improve their efficiency?

3 Methodological aspects

This research is exploratory and has its philosophical moorings in the critical realist view of the social world which enabled examination of the underlying multi-layered structures and mechanisms shaping the PPPs in road infrastructure in India. It is a multi-disciplinary study drawing heavily from fields of public administration, public policy, public finance, organisational theory and political science.

For my study I selected PPP projects within road infrastructure sector in the western state of Gujarat in India. There are broadly two kinds of road projects in India, national level projects that connect cities in different states, and state level projects connecting cities in the same state. While the national highways are developed by the central government, the state governments implement the state highways. I purposively selected two projects each from among the national and state level projects being implemented in Gujarat in order to compare and contrast the issues of governance of PPPs at these levels and have a deeper understanding of structures and mechanisms causing them. I further selected an urban transportation project being implemented by a local civic body to gain richer insights into PPPs in India and how they are shaped while facing local urban situations and factors. As nature of State institutions differs from each other at these three levels, my sample cases were representative and provided me with a holistic perspective of role of the State within PPPs in road infrastructure in India and nature of partnership between public and private sectors at different levels. A case study

approach, where insight is generated through deep examination of a single case, is adopted.

The primary data for this research is collected through qualitative methods employing semi-structured and unstructured informal interviews. This is supplemented and enriched with the data from several secondary sources, such as government reports and records, audited records, media reports and reports of funding agencies (e.g. World Bank, IMF, ADB) to reveal a more complete picture of reality.

4 Significance of the research

There is a demonstrated association between the effectiveness of PPPs and active role of the State in majority of literature on PPPs. However, role of the State particularly in the context of governance issues within PPPs has not been adequately researched and analysed. Hodge (2009) therefore recommends a shift in focus from the first generation technical matters to larger and more important dimensions of governance and public policy to understand ‘who gets what’ in the final analysis. Similarly, Kettl (1993: viii) argues that,

> '... public reliance on private markets is far more complex than it appears on the surface. In these relationships, government inevitability finds itself sharing power, which requires it fundamentally to rethink not only how it manages but how it governs'.

In addition, Rodrick (1997: 413) notes, ‘we are at the threshold of a serious reconsideration of the role of the state in development, one that will lead to an improved understanding of the role that governments can (and have to) play’. In the Indian context also the available studies (Datta, 2009; Singh and Kalidindi, 2009; Rastogi, 2004; Ghosh *et al*., 1997; Stewart-Smith, 1995) tend to evaluate PPPs largely from financial, legal, contractual, organisational, project management and engineering perspectives.

Moreover, as there are several public policy aspects of PPPs which are ‘relatively new and original’ (Linder and Rosenau, 2000: 15), ‘scholars need to expand from the tried and tested areas of theory...and generate new understandings of PPPs, and in the process inform public debate, policy and practice’ (Skelcher 2010: 302). In addition to the emerging interest in role of State in PPPs, some authors (e.g. Batley, 1994) observe that capacity of governments to manage these complex new relationships is a crucial issue of policy and not much attention has been given to it within research on developing

countries. Through this research I have attempted to fill these gaps in literature on PPP. My study of PPP projects at three administrative levels in India examining governance issues of highways and urban transportation projects has contributed to generating deeper understanding of the roles of the State vis-a-vis the private partners. This research adds new knowledge on crucial determinants shaping the efficiency and effectiveness of PPPs in India through study of diverse underlying layers of public policy, political economy of the states, public finance, public and private institutional structures, and political-bureaucratic attitudinal structures. It also contributes to improved understanding of the governance imperatives of PPPs in low-income developing country such as India.

Although a significant portion of budgetary allocations in most countries is invested in development of infrastructure, emerging evidence has noted serious data gaps which constrain effective planning for infrastructure requirements (Briceño-Garmendia *et al*., 2004). While Fitzgerald (2007) laments that most debates on PPPs are neither well informed nor balanced, Hodge (2009: 21) argues that '[s]everal PPP objectives relating to governance issues…deserve a better evidence base rather than the current anecdotal observations and assertions'. The distinct lack of comparative data and independent analytical research in PPPs is felt all the more in the Indian context, despite the fact that PPPs in road infrastructure in India comprise of 60% of the projects and substantial investments are planned by the Indian government for the transport sector through PPPs. Through this research I have attempted to generate additional evidence base to analyse governance perspectives of PPPs.

Moreover, issues of public policy are acquiring an increasing important dimension in areas where the State is partnering with private sector agencies. Evidence on PPPs in India points towards the need for informed public policy addressing different governance aspects of the projects. My research has explored and critically examined several important dimensions of PPPs in road infrastructure in India and has made policy recommendations for both the private and public partners for improving delivery mechanisms of PPPs. As I am taking a critical realist stand, the knowledge gained through this study is not meant to be only 'explanatory, and descriptive, but also evaluative, critical and emancipatory' (Sayer, 1992: 43). Insights gained from this research may be of use to PPPs in the social sector too where PPPs are being increasingly adopted, and where the division of roles and responsibilities between the public and private partners and the crucial role that the State needs to play, are still not well defined.

5 Brief outline of thesis

The *introductory chapter* outlined the context of the research, briefly traced the growth of PPPs, highlighted the important governance issues regarding PPPs and framed the agenda for research. The chapter developed the research objectives and research questions, and briefly discussed the methodology adopted for the study. The *second chapter* discusses PPPs as an emerging phenomenon of the State partnering with the private sector for provisioning of public services, from a theoretical perspective. It analyses reasons for its growth and critically evaluates its international experiences, and builds the rationale for an active role of the State in their governance. The *third chapter* provides a theoretical scope to the emergent concept of 'policy networks' and highlights their various governance dimensions. These two chapters present the theoretical framework for the research to analyse PPPs as a network mode of governance, and argue for an active role of the State within these partnerships. The *fourth chapter* discusses the philosophical underpinnings of the research, the methodological issues related to the research and the methods employed for data collection to answer the research questions. The *fifth chapter* presents an overview of PPPs in India, with emphasis on PPPs within the road infrastructure sector. Contextual perspective from the state of Gujarat is also presented in the chapter. The *sixth and seventh chapters* present the major research findings. Analysis of findings of the intra-city bus-based mass rapid transit system in Ahmedabad city is presented in the *sixth chapter*. The chapter discuses the need for the Bus Rapid Transit System (BRTS) and studies in detail the distinct features of the PPP model adopted for its implementation covering the multifarious facets of the partnership. It explores at a deep level the underlying structures and mechanisms that have resulted in the distinctiveness and the governance issues of the public-private partnership.

The *seventh chapter* analyses the national and state highways projects in depth to gain knowledge of various facets of PPPs and their governance issues. The underlying inter-linked causal factors covering the institutional, financial, institutional, politico-bureaucratic and socio-economic layers are studied. The chapter presents analysis of the key findings from a governance perspective highlighting the need for an active role of the State in governance of PPPs, while arguing for a more responsible and mature private sector. These two chapters explain the causal factors that shape PPPs at different administrative levels in India.

The *final chapter* summarises analyses of key findings of the study. It presents the main arguments and furnishes the policy recommendations for both the public and private sectors aimed at enhancing the efficiency and effectiveness of PPPs as mode of delivery of public services. This is followed by appendices. The final section of the report contains list of the literature and body of works referred to for this study.

CHAPTER 2

PUBLIC PRIVATE PARTNERSHIPS IN TRANSPORT INFRASTRUCTURE AND ROLE OF THE STATE: THEORETICAL OVERVIEW

1 Introduction

This chapter explores the growth of Public Private Partnerships as an emerging international phenomenon of the State collaborating with the private sector for provisioning of public services. It examines and analyses the factors that have made PPPs a preferred mode by governments in many countries to fill the infrastructure deficit. Critical analysis of literature also furnishes understanding of their shortcomings as modes of service delivery. The need for an active role of the State for effective and efficient governing of PPPs is subsequently articulated.

2 Public Private Partnership (PPP)

There are various meanings attached to the term 'Public Private Partnership'. According to Linder (2000), PPP is a rubric for describing all cooperative ventures between the government and the private sector, which include the non-State agencies, both profit and non-profit. More specifically, it is defined as a long-term collaborative arrangement between the State and non-State actors to jointly develop products and services and share the associated resources, costs, risks and profits, aimed towards achieving a public purpose (Klijn and Teisman, 2000). The presumed outcomes are more efficient services, improved balance of payments due to off-balance-sheet financing, reduced public debt, lower inflation, value for money and economic growth (Akintoye, 2009; Linder and Rosenau, 2000; Heymans and Schur, 1999). They are also argued to bring about transformation of delivery of public services which cannot be privatised due to political or financial reasons.

PPPs are increasingly becoming a preferred mode of service delivery in many countries in infrastructure sectors such as highways and bridges, civil aviation, railways and ports. They are also found in education, health, urban renewal, water supply and sanitation, and other social welfare services, albeit to a lesser degree. In the US, prisons are also run with private participation (Schneider, 1999). This research proposes to study PPPs

in road transport infrastructure. Within this context, PPP is defined as a long-term collaborative effort between the government and private agencies within which they pool their differentiated and specialised resources[5] for planning, design, construction, operation and maintenance of infrastructure services and share risks, investments, benefits and responsibilities (Grimsey and Lewis, 2005). Although there are many types of partnerships, typically the private partner designs, finances and builds a facility, provides and manages the service for an agreed period of time under a concession agreement to receive revenue through user charges (Angelides and Xenidis, 2009), termed as concession PPP, or from the government under a Private Finance Initiative (PFI) type PPP (Hall, 2009).

Several authors (Hodge, 2009; Osborne, 2000; Atkinson and Coleman, 1992) note that no single meaning can be ascribed to the term 'PPP', and its meaning is constructed in the broader socio-economic, cultural and country context in which it operates. Moreover, these different meanings are not exclusive categories as they have overlapping elements based on their intended purpose of application and significance (Linder, 2000). Weintraub (1997) explains that this is also because the terms 'public' and 'private' suggest social differentiations, not all connoting bipolar meanings. Different actors in the partnership have varying views on the purpose, operation and power structures (McQuaid and Christy, 1999). Comparative study of PPPs in the Netherlands and Spain by Boxmeer and Beckhoven (2005) demonstrates that power balance between actors in PPPs is largely determined by the degree of development of the welfare State and the traditions of democracy. Savitch (1998) argues that the degree of dominance of either government or private sector in industrialised countries often depends on the prevailing social-political ideologies; countries like France and Sweden with unitary forms of governance have a strong public sector, whereas in profit-driven private economies such as US, Canada and Hong Kong the private sector tends to dominate. UK, he posits, is midway.

3 Types of PPPs

As financial arrangements, PPPs can take different forms (Appendix 1). As management contracts they prescribe partial role for the private sector to manage or provide a service without sharing any risk. While through a lease agreement, some part

[5] Das and Teng (1998) identify them as financial, technological, physical (equipments etc.) and managerial. Miller and Shamise (1996) distinguish between property specific and knowledge specific resources.

of the risk is transferred to the private partner, in a joint venture the partners jointly finance, own and operate the project.

Among its various types, the DBFO (Design, Build, Finance, Operate) model is found to be widely preferred. The concession type model is most used where public partner transfers property or facilities to the private sector (for or without payment) for whole or part of contract and services are provided by private partner for a defined time period (ranging from 10 to 99 years), after which it is transferred to the public partner with or without payment of its depreciated value (Pierson and McBride, 1996). Such arrangements have been found in UK, Spain, Portugal, the Netherlands, and USA (Bult-Spiering and Dewulf, 2007). PFI projects in UK are inherently seen as being closer to privatised projects (United Kingdom, 2003) which includes sale of assets to a private company. While projects in France take a variety of forms such as management contract, sub-contracts or lease (Akintoye, 2009). In Italy, Hungary and the Czech some services like water supply are provided under 'institutional PPPs' which are joint ventures between the municipality and private operator (Hall, 2008). Majority of PPPs in US and Canada have been publicly funded, whilst large number in Australia is now privately funded (Hodge, 2009). In Brazil, PPP is an 'administrative' concession contract within which the government is a user of the service produced by a private agency, and pays for it (Wiss and Faria, 2007). PPPs vary across sectors and provinces in South Africa; they have been used mostly to expand basic services, and the exposure to this concept remains limited (Heymans and Schur, 1999).

4 Characteristics of PPPs

PPPs are described as 'integration alliances', as opposed to 'exchange alliances', as they enable pooling of specialised complementary resources of the partners (Chen and Chen, 2003), which are argued to bring in more value to the organisation than any other aspect does (Das and Teng, 2000; Peteraf, 1993). Typically in a PPP, the private partner pools in financial, technological and managerial resources whereas the public partner brings in capacity of governance and policymaking. Additionally, PPPs provide access to innovative solutions fashioned by private expertise for meeting specific project requirements (Grimsey and Lewis, 2005); innovation is observed to infuse competitive advantage in dynamic markets (Eaton, 2001). Working on design and execution of a joint project is found to result in dissemination of skills, reduced development time, and fewer errors (Clark and Fujimoto, 1991). Such intimate inter-organisation collaborations

are argued to enable co-evolution of specialised competencies between partners (Lorenzoni and Lipparini, 1999) and provide links between distinctive frameworks for formalising, criticising, testing and amending conjectures (Loasby, 1994).

A defining characteristic of a PPP is bundling of activities of design, construction, operations, maintenance and finance (Angelides and Xenidis, 2009). Under traditional contracts these are generally executed under separate contracts (Hart, 2003). A common misconception about PPPs is that they involve the private sector merely for financial partnering. As Grimsey and Lewis (2005) explain, in a PPP the private partner is involved in a broader ambit of 'infrastructure investment'; they do not do away with public investment but supplement it. Also, PPPs are argued to be economically feasible due to two reasons. Specialisation of a partner lowers the final total project cost. On the other hand, long-term relations generated by and based on trust lower transaction costs (Mothe and Quelin, 2001; Jarillo, 1988). Some authors (Osborne, 2000; Langlois, 1992) argue that partnerships are preferred even when transaction costs of collaboration may be relatively high as the enhanced value emerging from the partnership and rents due to superior productivity can subsidise the initial higher knowledge transfer costs. However, according to Chen and Chen (2003), PPPs reduce transaction costs as they are relatively more structured and partners have better control over resources.

It is also claimed that within a PPP substantial risks associated with construction, operation and maintenance of the project can be allocated to the private partners who are perceived to be better equipped to manage them at lower cost, thus lowering the total project cost (Ward *et al*., 1991). Large part of risk[6] in infrastructure PPPs is connected with technical complexities in documentation, design, financing, taxation, tendering, contracts etc. (Grimsey and Lewis, 2002). Along with these, the multitude of actors makes PPP a fairly complex procurement and investment process (Dikmen *et al*., 2009). Realistic identification and appropriate allocation of risk are listed to be critical to an efficient PPP project (Smith, 2009). In the traditional method of delivery of services, many of these are retained with the public agencies who are observed to be ill-equipped to handle them satisfactorily (for categorisation of risks, see Appendix 2).

[6] Grimsey and Lewis (2002: 111) identify the following risks- technical, construction, operating, revenue, financial, regulatory/political and environmental risks.
Frank Knight in his 1921 classic treatise, '*Risk, uncertainty and profit*', sharply distinguishes between 'risk' and 'uncertainty'. In both the cases, the outcome is not predictable with certainty, but in the former, the probabilities of the future outcomes are known either through past similar experiences or mathematically. Whereas in the later, the probabilities are stated to be plain 'wild guesses'.

PPPs also indicate a shift in the normative distinct roles for both partners (the public agency in role of the director and private partner as the contractor/provider) accompanied by a transformation of attitudes (Pessoa, 2008). PPPs are seen more as 'social contracts' (Macneil, 1980). The shared values and mutually agreed upon policy goals are argued to generate collective action, trust and reciprocity that perpetuate long-term relationships (Grimsey and Lewis, 2005). The 'relational approaches' (pull factor) as opposed to 'adversarial postures' (push factor) adopted in traditional contracts, have been postulated as critical to enhancing the sustainability and productivity of PPPs (Kumarswamy *et al*., 2009).

A common misconception about PPPs is that they are another form of contracting. However, as literature suggests, such is not the case.

5 Partnerships versus contracts

Literature makes a sharp distinction between partnerships and contracts, despite the frequent labelling of contracting-out arrangements as partnerships (Klijn and Teisman, 2000). Some scholars (e.g. Savas, 2000), despite defining PPPs through varying perspectives, are in agreement that PPPs need to be analysed in relation to the previous terminology such as privatisation and contracting-out. PPPs are supposed to be more about a service procurement policy rather than a capital asset management policy. Contracts are defined by a principal-agent relationship where the public principal is able to specify the service product and also define outcome, and the contractor merely delivers the service (Klijn and Teisman, 2000). The responsibilities of policy formulation and implementation are clearly delineated and differentiated in a contract, with total control resting firmly with the government (Abdel-Aziz and Russell, 2001). In a PPP, which is an outcome-based approach, the private partner takes up the responsibility of designing, constructing, and managing the service over the concession period and thus has higher level of ownership than a contractor. Moreover, as Hrab (2004) notes, the traditional contracts do not provide strong incentives to the contractor to provide efficiency in cost and quality.

The long-term relationship, with some agreements lasting for 99 years, and distinct financing models of PPPs (typical contacts are government funded, whereas PPPs are predominantly privately financed) are identified to set them apart from contracts (Smith, 2009). Furthermore, PPPs require more intense integration between the partners- the

sponsors, lenders or investors, and managers- and have a larger level of uncertainty regarding its value *ex ante* (Cheah and Garvin, 2009). The mutual coalescing interest and collaborative dimension of PPPs makes them different from contracts which are seen to be antithetical to collaboration (Milward and Provan, 2003).

Contracts are known to have limitations when neither specifications of the products nor performance indicators are clearly defined. This is more in case of infrastructure sector, where projects are characterised by a high degree of product ambiguity, require specialised knowledge of different organisations, and investments have long gestation periods. In such cases, partnerships have been found to mitigate the hazards of uncertainty and ambiguity (Klijn and Teisman, 2000). In a partnership, both partners are jointly involved from inception stage of the project to find integrated solutions, where the mode and type of interaction and intervention are tied up with the problem definition itself (Rochefort and Cobb, 1994). Klijn and Teisman (2000) note that while contracting may increase efficiency of the production process, PPPs possess higher potential for enhancing effectiveness of both partners.

According to Grimsey and Lewis (2005), the criteria which distinguish PPPs from contracts are sharing of risk and responsibility; resources inter-dependency; focus on the services rather than the physical infrastructure created; high trust-quotient; reciprocity; and life cycle approach to a project.

6 Analysing reasons behind growth of PPPs

Engagement with the private sector for provisioning of infrastructure facilities has become popular within both industrialised and low-income countries, although there has always been some degree of cooperation between the government and private sector even before PPPs became popular (Wetthenhall, 2003; Smith, 1999). The debate over private provision of public services began in the high-income[7] economies such as UK and USA, later finding acceptance in the low-income countries (Desai and Imrie, 1998). Between 1990 and 2001, nearly 2500 projects (of which 662 were transport projects) were implemented in developing countries by World Bank investment of US $ 135 bn (Guasch, 2004). Perceived intrinsic private sector superiority in delivery of services spurred PPPs in UK as part of the Public Finance Initiative of 1992, and the US as part

[7] I use terms ‘low-income’ and ‘high-income’ interchangeably with ‘developing’ and ‘developed/ capitalist/ industrialised’ economies respectively.

of philosophy of 'privatism'[8]; private provision of services was promoted since the 1980s by the Carter, Reagan and Clinton governments (Bult-Spiering and Dewulf, 2006). In the UK, the PFI adopted by the Thatcher and Major Conservative governments is the favoured approach for health, education, housing, transportation and local government services (Hall, 2008). PPPs are now written into legislation of many countries such as the urban policy legislation of UK and USA, national industrial policies of France and economic development policies in Italy, the Netherlands and UK (Bovaird, 2004). They lie at the core of European Union initiatives for economic competitiveness (Jacobs, 1997) and are the preferred model for development of trans-European transportation (European Commission, 1995). The strong Government commitment to market freedom and enthusiasm of the business community stimulated PPPs in Australia. The Netherlands, Hungary, Italy, Japan, Korea, Spain and France are some of the countries which have had substantial experience in implementing infrastructure projects under PPP model. Chile, Brazil, Mexico, Africa, Singapore, India, Canada are increasingly relying on this mode for delivery of public services.

The reasons for growth of PPPs have been varied across sectors and countries, largely depending on the context. According to Linder (2000), PPPs reflect ideological changes in debates of governance and changing alignments of prescriptive public-private distinctions. As McQuaid (2000) points out, one broad context has been the transformation of the State-market relationship where partnerships may not only be the result but also be the cause of these changing equations. Some scholars (Rosenau, 2000; Linder, 1999) argue that such partnerships represent the second generation of efforts to bring competitive market discipline in provisioning of public services by streamlining administrative procedures, while still being distinct from classical contracting. Evidence through detailed studies suggests that in many cases private participation has lead to substantial expansion in services with better efficiency through competition that has reduced prices (Harris, 2003).

Factors explaining growth and acceptance of PPPs as modes of service delivery are analysed in the following section.

[8] 'Privatism' dominated much of American ideology since early nineteenth century. It consists of a belief that private sector is superior to the government in delivery of services, and assures that PPPs are dominated by the private players in ways such that it ensures accumulation of private growth and capital (Barnekov and Rich, 1989).

6.1 Benefits arising out of resource inter-dependence

Evidence supports the hypothesis that when the current capabilities within organisations are inadequate to achieve the envisaged outcomes, alliances offer an attractive mechanism to negotiate the limitations (Hoskisson and Busenitz, 2001; Stuart, 2000; Gulati and Gargiulo, 1999), while being free from their long-term investment commitment (Ireland and Hitt, 1999). Within alliances, 'social actors manoeuvre for advantage' by 'acting strategically to manage their resource dependencies' (Pfeffer and Salancik, 2003: xii). Moreover, it has been recognised by economists that 'resource owners increase productivity through cooperative specialization' (Alchian and Demsetz, 1972: 777). As 'strategic alliances' (Chen and Chen, 2003) PPPs are argued to ensure value maximisation of firms through pooling valuable resources (Das and Teng, 2000). Within PPPs, the State partners with the private sector to access its specialised resources and pools its own administrative competencies, all aimed towards accomplishing State-directed goals. The new theory of resource- interdependence argues that to be effective, governments must blend their capacities with those of the non-governmental actors (Stone, 1993). As Kooiman (1993) notes, the public or private sectors do not possess all the knowledge to find solutions to complex and diversified problems of the modern society.

Oppen *et al*. (2005: 270) profess that coupling of 'material resources, skills and ideas can develop new definitions of problems and new solutions to them'. The flexible and adaptable forms of such partnerships are claimed to allow them to respond more nimbly to not only threats but opportunities as well (Provan and Kenis, 2007). This brings 'surplus value' (Klijn and Teisman, 2005) resulting in 'collaborative advantage' (Huxman, 1996). Prahalad and Doz (1987) argue that strategic alliances combine cooperation and competition to create collaborative value and synergy, which as Harrison *et al*. (2001) suggest is created by effectively integrated complementary resources, and which is associated with higher levels of performance. Prahalad and Hamel (1990: 80) thus advocate for 'collaborative arrangements to multiply internal resources'. Working on design and execution of a joint project ostensibly results in rapid dissemination of skills and information, reduced development time, and fewer errors (Inkpen, 2001; Clark and Fujimoto, 1991). Many governments attempt to fill the 'capability gap' in areas where they lack technical expertise through these alliances (Pessoa, 2008).

Furthermore, growth of PPPs is credited to the implicit assumption that the market stands for better efficiencies in production and delivery of services and partnering with the market is perceived to improve efficiency gains by means of improved resource allocation, effective organisation, innovation, technology, managerial efficiency, competition, discipline and entrepreneurial spirit of the private partner (Field and Peck, 2003; Linder, 2000). The profit motive provides it the incentive to innovate and become efficient. According to Samuelson (1948: 604), it is the free enterprise property of the market which endows it with 'tremendous dynamic vitality'.

6.2 Argument of economic efficiency

Fiscal pressures have often led governments to look for innovative solutions to maximise effectiveness in reallocating resources. During the last more than hundred years public sector role in provision of infrastructure, defined as a 'public good', has been pervasive. This was preferred to avoid negative externalities of the private sector, seen to be profit driven with proclivity to form into monopolies to detriment of common good (Walsh, 1995). In 1970s and 1980s, as demand for public infrastructure grew and governments became increasingly fund starved due to deficit financing and populist pressures to hold prices below costs, their capacity to provide sufficient and quality infrastructure was found to be inadequate (Pessoa, 2008). The public utilities were, therefore, largely neglected. Swaroop (1996) concludes that public finance for infrastructure is generally inadequate and full cost recovery of infrastructure charges has become more of an exception than a rule. In addition to poor allocation of funds for development of infrastructure, maintenance gets even little, which is assumed to be funded by future budgets which are typically insufficient (Wirtz, 2009). Moreover, these costs grow exponentially when neglected in the short run. Also, the public sector's record in design and construction of large infrastructure projects has been found to be poor (Hodgson, 1995) and way over-budget (Altshuler and Luberoff, 2003). Traditional methods also left a number of risks with the public sector regarding the asset ownership, which it was not sufficiently equipped to handle due to its monopoly position with no incentive for competition, poor fiscal discipline and limited fiscal autonomy to public bodies (Harris, 2003), and managerial inefficiency which increased production cost (Frantz, 1992). Many governments therefore attempted to improve performance through corporatisation and performance contracts which were largely unsuccessful.

Partnerships with the private sector are argued to present an attractive alternative to the market and contractualised relationships (Lowndes and Skelcher, 1998) and perceived to be broader in scope than privatisation and a qualitative leap from traditional contracting (Milward and Provan, 2003). Due to the 'buy-now, pay-later' attribute, PPPs are 'off the balance sheet', which means that PPP finances do not appear as large capital expenditures in the year that they occur, but as series of smaller revenue expenses over the life of the project. Evidence suggests that this helps PPPs to increase VfM of the investment; keep public sector budgets, and especially budget deficiencies, in control; and allow the public sector to avoid up-front capital costs thereby, reducing expenditure on large capital intensive projects (Kwak *et al*., 2009). The fiscal space created helps boost medium-term growth and generate fiscal revenue in the future (World Bank, 2005). Governments can allocate resources to other policy priorities as PPPs are financed off the balance sheet. Moreover, investment may also, in addition to meeting growing needs, create new needs and hence more opportunities for investment (Streeten, 1959). Evidence indicates that risks, when transferred to the private sector are better handled along with gain in overall efficiency. It has been estimated overall, that savings in government costs may be as much as 10-20%, while maintaining quality (Domberger, 1998). Incentives emerging from a profit motive in the private sector and opportunity to reach a maximum efficient size, that are typically absent in the government, are argued to lower private production cost of collectively consumed goods (Spann, 1977). Also, lack of ownership and competition effects and market discipline in the public sector are argued to result in low incentive to innovate, control costs and perform efficiently (Shleifer, 1998). Moreover, it is expected that separation of policy and regulation from implementation will ensure accountability through arms-length relationship, observed to be missing in public provision (Harris, 2003).

Akintoye (2009) points out that PPPs help to accelerate infrastructure development, and hence economic growth and efficient governance, as they emphasise value for money over life of the project, focussing not on the cheapest cost but on whole life-cycle costing implications. For most of the low-income countries, they enable governments to tide over huge public debt, and introduce innovation in design and delivery of public service thereby ensuring its long-term sustainability, he opines. Fiscal policies in the EU[9] and IMF policies which restricted public borrowing created incentives for these

[9] These were introduced in 1996 as part of the Maastricht treaty which stated that '[m]ember states shall avoid excessive government deficits' (Hall, 2008: 7).

partnerships in the EU countries (Hall, 2008). According to Grimsey and Lewis (2005), reassessment of definition of 'core' services which the State was presumed to provide; refinement in the private financing model which provides the whole-of-life infrastructure public services; and amalgamation of engineering concepts along with management principles which has given a new organisational underpinning to analyse the PPP model, have contributed to growth of PPPs. Furthermore, general acceptance of the 'user pays' principle has been linked to greater involvement of private sector in public service provision such as telecommunications and power which were considered to be natural government monopolies (Grimsey and Lewis, 2002; Smith, 1999).

The transactions cost approach postulates that for activities (such as the transport sector) which have high asset specificity[10] and complexity, combined with uncertainty and opportunism, low competitiveness and low government contract management skills, contracting costs tend to be high (Williamson, 1998; 1975). In such areas, bounded rationality along with information asymmetry gives rise to 'exchange difficulties' (Williamson, 1975: 9). Partnerships help to reduce transaction costs as they bring in the differentiated attributes of both the sectors, negotiated not purely within the market or the bureaucracy (Osborne, 2000). These provide incentive to the actors to act efficiently rather than opportunistically, by making credible commitments (Williamson, 1985). Moreover, these bring about enterprise and innovation of the markets, whereas cooperative governance structures (like the bureaucracy) provide a mission or systems orientation (Williamson, 1999). This becomes important when, in the face of incomplete contracts, contractual hazards build up.

6.3 Political perspective

Although financial, engineering and project management aspects of PPPs seem to be discussed more often, their political dimension cannot be overstated as the policy to opt for PPP is clearly a political one. Friend (2006) notes that as a public policy representing the government's wider approach towards infrastructure delivery, PPPs carry a significant political undercurrent as they are difficult to sustain without strong political support and typically need a 'champion' (Harris, 2004). In line with this argument, Laughlin and Pallot (1998) point out that the difference in uniformity in acceptance of PPP across Europe is mainly due to political willingness. According to

[10] Asset specificity defines the idiosyncrasies (uniqueness) in terms of the site, physical asset such as equipments, and human resources.

Hodge (2009), infrastructure contracts are defined as 'partnerships' more through a political positioning than through a semantic definition. In Australia, 'the warm glow of partnership language is...employed nowadays for voter consumption' compared to the 'harsher sounding imagery of...private finance contracts' (Hodge, 2006: 319). Investors are observed to be wary to invest in countries which are politically instable. Warner *et al*. (2008) while investigating PPPs in water, health and education sectors in developing countries find that private agencies frequently complain about poor political commitment especially in wake of political change-over. The political incentive seems to run high with the promise of faster delivery of infrastructure projects and the short-term political gains for politicians by showing an immediate cut in capital expenditure while showcasing better quality infrastructure (Monteiro, 2010). Also, politicians have a tendency to argue their cases based on successful cases rather than failures. While early completion of projects has potential of political gain, PPPs also carry explicit and substantial risks at the political level as governments are required to bail out failed projects which may erode their political gains. More so, as political risks cannot be transferred by the government. Furthermore, as Hodge and Greve (2007) point out, improved relation with the construction businesses is seen a bonus by most politicians. According to Coghill (2005: 92), '[s]ince PPPs generally favour business interests, for a major political party to oppose their use would tantamount to political suicide'.

6.4 As a new mode of governance

Partnerships between the State and private sector are lately being located within the emergent discourses on governance, and PPPs are being viewed as new 'governance tools'. They are argued to represent both a *pluralist* state, with multiple processes informing the policy making system and also a *plural* state, where public sector objectives are served by multiple inter-dependent amorphous agencies having differentiated expertise (Osborne, 2006). According to Linder (2000), collaboration and not competition is the central theme of partnerships; as joint ventures they stabilise volatilities in the market, and mitigate competitive pressures instead of exploiting them. Moreover, PPPs do not signal the retreat of one sector relative to another or the notion of shrinking of State. Instead, they seem to be moving in one direction of enhanced interdependence brought about by the increasing complexity of meeting socio-economic demands. As a governance tool such partnerships are postulated to alter the power balance by distributing power horizontally between government and the stakeholders,

and harness their collective synergy in policy process towards realising social goals (Pierre, 1998). This, according to Linder (1999), widens area of discussion and encourages 'moral regeneration'. Feigenbaum *et al*. (1998) explain that this is because the meaning of the sectors themselves is shifting. Rather than redefining the prescriptive demarcation across the public-private space, or the government ceding its 'territory' to the market, PPPs are argued to blur these 'traditional' divides (Starr, 1990).

Henry (2007) describes this as a phase where governments are redefining themselves 'less in terms of power and hierarchy and more in terms of partnership and collaboration'. Governments are devolving their decision making powers to the non-State actors in a PPP, thereby moving from the traditional vertical hierarchical form of governance towards horizontal forms of governing (Hill and Lynn, 2005; Vigoda, 2002). They are redefining their role from 'rowing' (service delivery) to 'steering' (policy making) by catalysing various network partners (Osborne and Gaebler, 1992). PPPs thus represent governance that is both institutional and networked (Goldsmith and Eggers, 2004). Some authors (Hirst, 1994; Green, 1993) suggest that problems of 'big' governments can be addressed by downsizing and partnering with specialised non-State actors for meeting social goals.

Evidence suggests that PPPs are predominantly found in countries where debt burden of the government is high, size of the market and aggregate demand is large, institutional corruption is less, and the country has a history of PPPs (Hammami *et al*., 2006). It is argued that the partnership model has been precipitated by economic globalisation which has structurally altered the nature of the welfare State. Governments are forced to reduce capital spending while still having social goals (Castles and Pierson, 1996). The impact of this 'international interpenetration' as Cerny (1990: 108) articulates, is seen in the welfare State being replaced by the 'competition State' which behaves more like a market player and takes the lead in spearheading the structural transformation of markets and brings about policy changes involving the private sector. State actors are promoting complex forms of coalitions in an attempt to survive these challenges of globalisation.

7 Critical evaluation of PPPs

Despite their potential benefits and increasing usage in infrastructure development, PPPs have been criticized regarding several aspects. Worldwide evidence suggests that their overall economic benefits are mired in uncertainty and debate.

Smith (2009) notes that the bidding costs tend to be very high owing to the highly technically nature of the bidding process. Since these are inherent project costs, they do not get compensated when contract is awarded to the competitor, thereby limiting competition for those firms which do not have adequate financial resilience (Rintala, 2004 in Smith, 2009). This makes cost of establishment of a PPP higher to the public sector (Gaffney *et al*., 1999). Hall (2009) asserts that long concession periods commit the future governments and reduce their flexibility of economic choices, which as Standard and Poor's (2008, in Hall, 2009: 4) points out may damage the public body's own credit rating, or its spending on other public services. Studies (Light, 2000; Rainey, 1991) have revealed that private firms are more prone to hazards of opportunism[11], forcing them to cut costs, reduce quality and increase profits. Also, capital infrastructure projects due to their intense asset specificity, complexity and high sunk costs can potentially lead to problems of opportunism in either of the partners due to the reduced alternative value of the asset (Globerman and Vining, 1996). Evidence from Canada reveals that transaction costs appear to be high in most PPPs. Also, governments have not always effectively reduced either their total costs or their budgetary risks with PPPs (Vining and Boardman, 2008). Moreover, study of UK defence demonstrates that there are several transaction costs that cannot be offset through trust-based relationships (Parker and Hartley, 2003).

The PPP model with too many actors in the fray has been criticised for fragmentation of reporting lines and blurring of existing mechanisms of accountability through contracts, legislation and other mechanisms (Loffler, 1999), which Skelcher (2010: 299) apprehends may lead to 'democratic deficit'. While new accountability structures have not emerged, the traditional ones appear to have diminished (Harlow, 1999). PPPs also have the potential to sidestep parliamentary accountability (Walker and Walker, 2000). Papadopoulos (2007) apprehends that accountability deficit may lead to legitimacy and governability deficits as accountability of decision makers is a means for their

[11] According to Williamson (1979: 234), '[o]pportunism is a variety of self-interest seeking but extends simple self-interest seeking to include self interest seeking with guile'. It is lack of candour or honesty in transaction, to include self-interest seeking with guile (Williamson, 1975: 9).

legitimation in democratic environments. Parliamentary inquiries in Australia (Public Accounts and Estimates Committee, 2006; Public Accounts Committee, 2006) have expressed serious concerns about complexity of PPPs and accountability arrangements as these are not clearly located within laws and regulations as is the public sector. Hodge and Coghill (2007: 691) demonstrate from the Melbourne City Link case that accountability structures were compromised and the outcome was achieved at a 'considerable price' as a result of 'unduly aggressive legislation'. Similarly, from her study of Canadian projects-Confederation and Charleswood bridges, Boase (2000) concludes that PPPs are marked by secrecy, lack of accountability and transparency, inadequate public scrutiny, and adverse environmental and socio-economic consequences. She suggests 'need for caution, vigilance and scepticism' (Boase, 2000: 75).

In addition, there are apprehensions regarding their evaluation, efficacy under all conditions, democracy, regulation, equity and access to the vulnerable population, and the problem of a *caveat emptor* when essential services for the general public are handed over to the private sector (Rosenau, 1999). These concerns stem from the inherently different, and sometimes conflicting, policy and business interests of the two partners (Peters, 1998; Reijniers, 1994). Although PPPs are argued to have mutually agreed goals, the 'mutual benefit theory' when applied in practise is not so straight forward and conflicts may arise from division of benefits and command of resources (Streeten, 1983: 877). Studies reveal that even joint ventures, where both partners have profit motives, suffer from high failure rates due to conflicting goals (Geringer and Herbert, 1991). In Melbourne, the government had to bail out the public transport operators to sustain the services, when the PPP ventures failed, thereby hugely burdening the taxpayers (Stanley and Hensher, 2004). PPPs in transport in China are being rolled back and increasing number of projects are now being given to State-run corporations as the PPPs exhibited malpractices by the public partner and opportunistic behaviour among private providers (Mu *et al*., 2011).

Policies supporting PPPs have been argued to have 'nothing to do with economics but everything to do with powerful vested interests that are happy to hide behind the complexity of this issue to enrich themselves' (Davidson, 2004: 15). Lowi (1979) apprehends 'private appropriation of the public interest' through the PPPs, as 'a purely private production arrangement does not appear to satisfy social needs' (Klijn and Teisman, 2000). According to Buchanan (1998), the private sector does not function as

altruistic organisation and should not be expected to fulfil a welfare function. Moreover, issues of participation become acute when governments take shelter under cloak of 'complexity' and grounds of 'commercial confidentiality' (Hodge and Greve, 2010). The seemingly complex financial agreements of PPPs have limited the possibility of meaningful participation of the common man with their management due to a marked lack of transparency. Despite claims of risk sharing and private financing, the stakeholder is often in the dark about the true nature of partnership. This cloak of secrecy adversely affects the community support in their favour even when the projects are beneficial.

The more recent international experience and evaluation of PPPs in the OECD and industrialised countries indicates mixed reactions and suggests that claims to proclaimed efficiency and economic superiority of PPPs 'ought to be more sober than those usually reported by advocates' (Hodge, 2009: 2) in view of the limited comparative data on PPPs and traditional procurement. PPPs are termed as a *Faustian bargain* by some authors (Flinders, 2005; Peters and Pierre, 2004) while others (Shaoul, 2009; Pollock *et al*., 2007; Shaoul, 2005; Linder, 1999) argue that PPPs are nothing more than a 'language game' with the meaning being ambiguous for policymakers and private sector alike, and that under the guise of 'multiple meanings' private operators are able to get a market share of public service provision. Shaoul (2011) argues that in a broad way, PPPs are a means to open up to the banks and financial institutions, primarily, public services and infrastructure which for mainly political and financial reasons could not be privatised. This has insidiously resulted in a subtle political power shift to the private sector based on its capital power, and reflects a global trend of neo-liberal agenda where large corporations are driving public policy. Several studies of PFIs in the UK have revealed claims of their effectiveness and profitability to be largely false (Hodge and Greve, 2007). They have been criticised for being expensive and resulting in excessive profiteering (Toms *et al*., 2009; Shaoul, 2005); frequent hidden wealth transfers to financiers, avoiding legitimate channels of accountability; sometimes 'engineered' to showcase their efficiency (Shaoul, 2009); flawed evidence to support claims of improved time and cost over-run (Pollock *et al*., 2007). To support these findings the controversial case of London Underground is presented; the PPP for its maintenance and rehabilitation failed within a few years due to multiple reasons, and the facility reverted back to the public agency with very heavy losses to the taxpayer. Complex financial arrangement between partners, particularly the sharing of risks and inability of

the government to effectively monitor the contracts, are observed to be principal causes for collapse of the partnerships (Hall, 2008). Similarly, the Channel Tunnel project has saddled the government and private investors with several financial uncertainties (Hodge and Greve, 2009). A World Bank report (Annez, 2006) reviewing private investment over a 22 year period finds that little private finance in urban infrastructure has been mobilised through PPPs in developing countries.

Additionally, analysts (Jupe, 2009; Davies, 2008; Ball *et al*., 2007) have been wary of claims of veracity of VfM and risk transfer validity, noting that they are subjective and 'inherently nebulous'. For example, in the UK, only 10 of 622 PFI projects signed till 2007 were audited, and merely three were audited for risk transfer (Hall, 2008). Evidence suggests that there are 'excess returns' to the private sector even after factoring in the risk factors (Hellowell and Pollock, 2010: S26). The government may overprice the risk and overcompensate the private partner (IMF, 2004). Moreover, often risks are ascribed to the private consortia which they never get to bear (Chris, 2005; Gaffney *et al*., 1999). Review of 227 new road sections across EU countries by Blanc-Brude *et al*. (2006) cautions against making any conclusions regarding VfM, as the life-cycle costs over the long-term of most of these projects are not totally known. Their study revealed that PPPs are 24% more expensive on various heads against expectations from traditional procurements. Similarly, studies in the USA (Boardman *et al*., 2005; Bloomfield *et al*., 1998) demonstrate that inflated figures often mask the real cost, and risks borne by the public through unrealistic risk-transfer and higher taxes are difficult to be captured. Analysis of 76 major infrastructure projects revealed significant private financing in less than half of the reviewed cases, 'imperfect partnership' with high degree of complexity and specificity, unrealistic risk transfer and strategic behaviour (such as private partners declaring bankruptcy) to claim compensation and avoid large scale losses. In addition, there is no central federal agency to oversee PPPs, which are typically granted to agencies of the Congress on a function or project basis (Smith, 2009).

Analyses of PPPs in Australia, which is among the top PPP markets, have likened the off-balance sheet financing to 'accounting trickery' to indicate inflated savings (Walker and Walker, 2000). English (2005) observes government dominance and tendency to withhold crucial commercial information from the public, financial and governance failure, and poor understanding about the case-mix funding in the State agencies leading to high risks and expenses eventually shifted to the public. Drawing from his findings of

eight PPP cases of Victoria, Fitzgerald (2004) reveals that use of inaccurate discount rates for estimating time value-for-money results in incorrect measures of net benefit. Evaluation of PPPs in UK by Pollock *et al*. (2007) furnished similar conclusion.

PPPs fail to achieve their stated outcome even due to causal factors arising from the government partners. According to Li *et al*. (2005), PPPs are relatively new concepts in some countries which lack adequate understanding of its complex nuances. Additionally, as markets are not well developed in many countries, this tends to result in a monopoly situation with some firms capturing large number of projects with higher costs to users. Several studies have identified weak institutional structures to contribute to ineffective partnerships. Unavailability of economic evaluation frameworks; poor clarity about contract management; hasty, poor and uninformed closure of contracts; and costly delays due to protracted dispute resolutions within government agencies contribute to this conclusion (Hodge, 2005). From an Asian survey on PPPs, Kwak *et al*. (2009) analyse reasons for failure of PPPs such as lack of clear government objectives and commitment; poorly defined sector policies; wide gaps between public and private sector expectations; inadequate legal/regulatory frameworks; poor risk management; low credibility of government policies; complex decision making; and poor transparency. Review of PPPs in US and UK has concluded that public institutions did not have requisite skills to successfully manage them (GAO, 2001; Bates, 1999). The importance of improved project and risk management skills within the government has been highlighted by several studies (Monteiro, 2010; Wilson *et al*., 2010; Qiao *et al*., 2001). Concerns have also been expressed that absence of sturdy governance structures may result in shifting the monopoly from the government to a commercial actor through 'State capture' (Hellman *et al*., 2000).

Additionally, effective governance of PPPs may be constrained by unilateralism and traditional posturing by the public sector. As Teisman and Klijn (2002) note, governments might adopt a hierarchical or dominant agency role instead of being the 'deal maker' (Linder, 2000: 26) which may jeopardise a PPP, as would lack of political maturity (Hofmeister and Borchert, 2004). Study by Henisz and Zelner (2001) has revealed that arbitrary behaviour of political actors can dampen incentives for private deployment of capital resulting in reduced per capita of infrastructure investment. Brinkerhoff (2002: 1282) coins the idea of 'governance gap' which may be caused by a lack of common understanding regarding complex partnership issues and if there is insufficient willingness to resolve differences.

8 Role of the State as a more active partner

Proponents of PPPs swear by the higher financial gains through such partnerships. However, as Bator (1958) notes, not always can commercial gains justify private provision of public goods. Although governments are relying on PPPs for filling their infrastructure deficit and capability gaps, recent studies of PPPs have demonstrated that '[t]he evidence to date is largely based on business case estimates, has an unclear counterfactual and suffers from a host of poor evaluative design features' (Hodge and Greve, 2009: 38). Comprehensive review of several 'successful' cases in some industrialised countries claiming efficiency gains concludes that 'it is well to be sceptical about the data', and that 'in many cases, studies rely on assertion, or on surveys of managers' perceptions' (Walsh, 1995: 231). As some scholars (for example, Marmolo, 1999) note, policy choices regarding mode of production and delivery are more beneficial when they are based on the assessment of which mode accomplishes maximum overall gain in allocation of resources, as opposed to the comparative efficiency of markets versus State becoming the central issue of debate and foundation for framing policies which have country wide impact (Demsetz, 1964). Evidence through a useful body of literature indicates that while there may be many cases where PPPs have been beneficial (Raisbeck *et al*., 2010; NAO, 2003), equal and maybe more number of cases presents a contrary picture. However, the gains are debatable. It may be possible that 'gains in income are accompanied by losses in welfare' because of inequalities the division of benefits generate (Streeten, 1983: 877). PPPs are thus found to fall short of defining a perfect mechanism for delivery of public services (Wirtz, 2009; Peters, 1998).

In view of the mixed reactions regarding efficacy of PPPs, and in the background of growing concerns about the more fundamental issues of equity, access and protection of public interest and a tendency within the private sector towards opportunism, there has been a growing support in literature for a significant and leading role of the State in the coalition as against demands for State minimalism. According to the hypothesis, the purpose behind a strong State with an expanded agenda of a different kind is to prevent distortions in resource allocation by the market forces (it was presumed by neo-classical economists that market forces and prices could be used as non-discriminatory and non-discretionary measures for building an egalitarian society). Patterns of such distortions resulting in 'highly unequal power, asset and income distribution' (Streeten, 1993:

1282) are visible in examples of PPPs from Australia (Wettenhall, 2003), Canada (Boase, 2000) and UK (Williams, 2010; Shaoul, 2009). The overarching goal of a PPP is argued to develop infrastructure for *public good* by coalescing efficiencies of both sectors, and not merely to collaborate with the private sector because a new philosophy demands it and it is fashionable to do so. Any intervention by the State to steer these partnerships therefore needs to be distinguished on basis of the purpose behind it; there needs to be a differentiation between 'more regulation' and 'effective regulation' as there are numerous ways by which an effective State can stimulate markets, enhance their efficiency and make them more people-friendly. Alvater (1972) reminds us that existence of market is linked to and depends on existence of the State. According to Bourdieu (2005) the economic world, more than any other, is inhabited by the State which structures the forces that characterise it, and plays a crucial part in ensuring its stability and predictability. While Periera (1993: 1339) observes that

> '...mixed situations, combining market and state coordination, are the long term and the general rule. As modern economies become more and more complex, the need for combined market and state coordination of the economy becomes bigger and bigger'.

The complementarity of the public and private domains is professed to work well when both build upon the comparative advantage of each and not by leveraging their power positions. Paul Streeten (1987) argues that without complementary government action, prices by themselves even when 'right' can be ineffective or counterproductive. The comparative advantage which the State brings to the PPP is through its role in structuring the environment and being a vigilant client. Moreover, following Grabowski (1994: 414), '[c]omparitive advantage does not evolve naturally, instead comparative advantage is created', just as Evans (1996: 1119) discovers that 'synergy is constructable' and can be fostered by 'robust, coherent state bureaucracies'. During the ongoing global financial crisis, the government in many European countries adopted several economic measures such as bank guarantees on loans by private companies and tax allowances to make PPPs viable (Hall, 2009).

There is an emerging consensus among scholars that engaging private partners places more, although different, responsibility on the government. Kettl (1993) points out that role of the State does not diminish when private sector gets involved in service provision; it just becomes different. Rather than abdicating its responsibilities the State assumes new ones (Allard and Trabant, 2007) in order to bring parity between the different intrinsic needs of the private and public sectors. The State is required to look

beyond the narrow commercial formulations of a problem (in order to steer clear of 'opportunistic ignorance'), and to take a wider view within a multidisciplinary framework by bringing in the social, economic and political dimensions of the issue into the discussion as reality is layered (Myrdal, 1968; 1951). As Hodge (2005) suggests, within the PPPs, governments are required to transit from being the financer/operator and act in roles of planner, economic developer, policy advocate, and steward for public funds. This is because PPPs are not merely a question of technical provision of services but form an inherent part of public governance today and can potentially alter how the public and private sectors are organised internally (Panayotou, 1997). The creation of an attractive investment climate by policy making, establishing effective regulatory mechanisms, effective steering of projects during their life cycle form some of the meta governance roles of the government. Skelcher (2010) reminds us that tight governance of PPPs through creating stringent oversight mechanisms remains a governance priority, whereas Salamon (2002) advocates for a competent government to ensure that private interests do not prevail over larger public interests. Similarly, Goodsell (2006: 629) places emphasis on a primary role of the government as it alone has the 'legal authority and mandate to seek out the public good'. Also, political and administrative accountability of the public sector is observed to form the central tenant of democracy. A strong State is more likely to ensure that PPPs secure public interest while providing facilities, improve existing efficiencies, and supplement limited resources of government at reasonable cost. Ineffective governance of PPPs may give rise to 'legitimate criticism of the Government which always remains responsible and accountable for delivery of services to the users', as private entities which normally use public assets to build these projects 'could short-change user and government interests, thus compromising the very purpose of inviting private participation' (Planning Commission, 2009: Preface).

Focus on a redefined role of the State within PPPs indicates a shift from the '*production function*' approach to a '*governance*' approach (Williamson, 1999; Dixit, 1996). As Wilson (1989: 359) reasons, this shift is not because the 'government is cheaper or efficient, but because it alone embodies the public's authority'. Williamson (1979: 235) highlights *probity* as an additional strength whilst viewing governance as the 'institutional framework within which the *integrity* of a transaction is decided'. Within the partnership, the public sector draws its strengths in regulation, ensuring equity,

continuity and stability of services, preventing discrimination or exploitation, and ensuring social cohesion (Osborne and Gaebler, 1992).

A critical role of the government is outlined in regulation of these partnerships. As interdependencies between the public and private sectors increase within PPPs, efficient regulation normatively is required to ensure balance of interests between partners (Saltman and Figueras, 1998; Carson, 1983), protect common welfare, ensure market discipline and fair competition (Savas, 2000; Rondinelli, 1991) and provision of efficient services (Stern and Holder, 1999). Regulation is also argued to provide buffer against political interference in pricing decisions which assures investors about safety of their investments. A sturdy legal regulatory framework that is efficiently enforced and clearly specifies the division of roles between the partners is found to contribute to building sustainable relationships (Wang, 2000). According to Kuttner (1993), these frameworks reduce opportunistic tendencies that react negatively to such safeguards as regulation, control and monitoring (Williamson, 1985). To the extent that PPPs function in imperfect markets, regulation, economists assert, is a way to control such markets (Sparer, 1998; Supiot, 1996). However, PPP regulatory framework encounters problems such as difficulty in designing effective incentive systems to promote efficient performance and penalise poor delivery (Greer, 1980), and possibility of regulatory capture (Fourie and Berger, 2000).

9 Conclusion

This chapter reviewed the relevant literature on PPPs and presented a theoretical overview of the factors spurring growth and acceptance of these modes as alternative to government delivery of public services. Brief summary of the worldwide experiences of PPPs, highlighting the critical areas of debate and discussion, has been furnished. The chapter outlined the crucial issues of governance emerging from the distinct characteristics of the two partners, thus arguing at a theoretical level for a more active role of the government in enhancing effectiveness and efficacy of PPPs as alternative modes of service delivery. In the following chapter the ‘networks’ approach of governance for analysing PPPs from a governance perspective is discussed. The approach provides the conceptual framework for understanding PPPs as collaborative forms of governance, and provides the rationale for a redefined role of the State in governing the partnerships.

CHAPTER 3

THEORETICAL SCOPE OF POLICY NETWORKS AND ROLE OF THE STATE IN THEIR GOVERNANCE

1 Introduction

This chapter further develops the conceptual framework for the research. The 'policy networks' approach is employed to provide the analytical tool to understand PPPs as forms of networks coalescing the public and private sectors, critically analyse their strengths and shortcomings, and explore the role of the State in governance of the partnerships. The literature on governance is reviewed to explore its changing meaning through various debates, leading to arguing for an active role of the State within networks in order to enhance their effectiveness and efficiency. The chapter concludes with understanding of PPPs as network form of governance and articulates for a more active role of the State partner.

2 The 'networks' approach

'Network' concept in governance is widely believed to be emerging from the changing landscape of social, political and economic studies and reshaping many of the contexts within these fields. The concept discusses these changes within the discourse of public administration, organisation theory and the emergent theory of new public governance. This has resulted in its application to explain the interconnectedness of various groups, and their ability to influence and steer policy making.

Networks approach is embedded in the contemporary debate of State-market dichotomy based on conventional division of roles and responsibilities, and failure of State and markets as modes of allocation of resources, wherein networks are perceived as either alternatives to both in this regard (Castells, 1996) or those that intermingle qualities of both (Mayntz, 1994). Policy networks have also been located within the more recent discussions on role of State and new forms of governance. It is yet doubtful whether the various forms of governance structures (the public sector, markets, networks and clans/communities) exist in their pure form. Evidence through literature (Keast *et al*., 2006) supports the view that the new forms of hybrid organisations exist alongside traditional forms of governance and in some case also supplement and supplant them.

Evers (1990) points out that they are not contained in tight inseparable territorially defined jurisdictions. Their boundaries not only shift but tend to become blurred and opaque.

3 'Policy/governance networks' defined

For a mathematical approach, network describes a relationship between two or more entities (Bourzedoum, 1993). Networks have been used to conceptualise systems with self-organising and self-learning capacities in network technologies (Katz and Shapiro, 1985) and business administration (Thorelli, 1986). The term 'policy network'[12] does not carry an objective description nor is there a common understanding of its various nuances (Borzel, 1997). However, ample literature on 'policy' or 'governance' networks (Castells, 2000; Marsh and Rhodes, 1992; Powell, 1990; Rhodes, 1990) describes them as patterned linkages (formal and informal) of interest intermediation and modes of organisation between government with non-State actors sharing resources, aligned beliefs, coordinated by collective identity and action, and characterised by mutuality and complementary strategic agendas. Networks are commonly understood to represent power and resource dependency between government and interest groups arising from their heterogeneity (Borzel, 1997). There is a common belief that networks do not substitute the need for theoretical explanation and merely provide a framework for analytical interpretation (Dowding, 1995; Kenis and Schneider, 1991). Although, as Wellmann (1988) contends, social structures and patterns of linkages have greater explanatory power to describe processes with determine policy outcomes. Networks are often loosely referred to as hybrid, associative or horizontal forms of governance. As forms of governance, they are argued to posit both a *plural* State with multiple inter-dependent actors contributing to the service delivery as also a *pluralist* State in which multiple processes inform the policy making (Osborne, 2006). The basic assumption is that networks influence (although, not necessarily determine) policy outcomes (Borzel, 1997).

For this study, the networks framework is used an analytical tool for study of PPPs.

[12] I use the terms 'policy networks', 'governance networks' and 'networks' interchangeably in this study.

4 Growth of the 'networks' concept

The concept of governance network has been used in policy science since early 1970s. The interactive approach to public policy is visible in the work of Allison (1971), Cohen *et al*. (1972) and Lindblom (1965). The discussion of 'policy networks' to define 'governance without government', however, has been more recent. It has largely been European, with considerable work being done in the UK (Stoker, 2004; Peters, 1997; Rhodes, 1997), the Netherlands (Kickert *et al*., 1997a) and Germany (Scharpf, 2000; Mayntz, 1999; Schneider, 1999). It is believed by some authors (e.g. Marsh and Rhodes, 1992) that the concept grew out of the more restricted idea of 'iron triangles' of the USA, in 1960s and 1970s, where small interest groups liaised with bureaucratic agencies and governments to exclude other interests and influence policy (Ripley and Franklin, 1990). This phenomenon was termed as 'agency capture' (McConnell, 1966). The more recent literature (O'Toole, 1997; Thomas, 1997) relates networks with broader questions of managing the State and accepts the influence networks exert on policy making. Some authors (Kettl, 1987; Salamon, 1981) observe that although the private sector involvement has become more prominent lately, the US government has engaged with private sector in policy making long before networks came to be discussed. In the British literature, networks are seen as structures for exchange of resources. Rhodes and Marsh (1992) analysed networks as a power dependency model at a meso level lying between rational choice theory at micro and State theory at macro level. The Wilks-Wright team (1987) points out that although the networks approach explains similarities, it cannot be generalised. The Dutch literature (Klijn, 1997; Kickert *et al*., 1997a; Kickert *et al*., 1997b; Koppenjan and Klijn, 2004) discusses networks as new modes of democratic governance.

5 Characteristics of networks

One of the defining characteristics of networks is resource interdependency (Castells, 1996). Actors within networks pool their differentiated and complementary resources towards meeting shared goals. According to Scharpf (1997), the power equation between the actors in a network is determined by the importance attached to these resources. Scharpf (1997) explains that network governance is based on *negotiation rationality*. Actors within networks are guided by their capabilities, preferences and institutional norms that shape their behaviour patterns. The agreed upon rules and norms imbibe trust, enhance communication, reduce uncertainty and form the basis of

horizontal interaction. Resource interdependency combined with perceptions and strategies of individual actors, which may conflict, make networks complex entities (Klijn *et al*., 1995). Yet, they are characterised by long-term enduring relational contracts, high trust quotient, reciprocity and management by negotiation (Bovaird, 2006).

The 'networks' concept discusses a social issue through 'nodes' made of actors, the 'process' of interaction between the actors, within a 'framework' shaped by the structural context. Despite being formed by a coalition of actors, networks are found to be 'more than the sum of the actors' (O'Toole, 1997). Although they are connected and interdependent, they are not tightly coupled (Mayntz, 1993a). This makes them operationally autonomous (Marin and Mayntz, 1991), self regulatory (Scharpf, 1994) and resilient (Kooiman, 1993). Networks are argued to be open systems (Atkinson and Coleman, 1992), devoid of clear demarcations and not limited by institutional boundaries (Scharpf, 1990).

Networks are also postulated to be flexible and agile in responding to emergent issues (Mandell, 2001), capable of developing products and service solutions more cost-effectively and be more responsive towards users' needs (Kjaer, 2004). They are found to enhance value of intangible assets like tacit knowledge or technological innovation (Teece, 1986) through lateral communication, which Buckley and Casson (1988) suggest results in emergence of 'common values'. Networks are also found to co-opt specialist knowledge from stakeholders (Considine and Lewis, 2003). Bramoulle and Kranton (2007) note that specialisation can lead to welfare gains when links of innovation and information between different contributors in society are created for public good.

'Governance' networks are perceived to bring about a *public purpose* into policy domain (Marsh, 1988) as they provide a platform for citizens to critique, oppose or dissent any public policy (Dean, 1999). This is found to contribute to democratic empowerment and informed deliberation (March and Olsen, 1995). The theorists of the school of liberal democracy (Pateman, 1970; Mill, 1958) perceive self-governing institutions within the society as necessary for promotion of equality and collective orientation towards common good. Under their model of 'empowered participatory democracy', Fung and Wright (2003) argue that capacity for effective problem solving enhances with deliberative collective action ensured through bottom-up participation.

Sorenson and Torfing (2005) state that governance networks tend to follow all the guidelines advanced by Fung and Wright. They widen the scope for discursive contestation and provide democratic means of regulating informal political processes, which leads to evolution of new political institutions. Communities and citizens can engage in a more constructive discourse by means of networks transcending the hierarchical institutions in a more informal manner (Fox and Miller, 1995; Rosenau, 1992). By conjoining policy makers and implementing agencies, they tend to increase the acceptability and compliance of policies formulated through a bottom-up approach (Rhodes, 2000), thereby giving life to what English (2005) calls the 'joined-up government'. Stone (1989) avers that weaker states can enhance their governing capacity through partnering with non-State actors. Another viewpoint sees social cohesion in networks resulting in creation of social capital that is argued to be necessary for good governance (Putnam *et al*., 1993).

Networks are also seen to present a conceptual response to limitations to markets and hierarchies with regard to allocation of resources and provisioning of services.

6 Networks: Beyond markets and hierarchies

Following Barnard (1968), it is widely accepted that organisations need to be efficient and effective for them to exist. In the same vein, networks are argued to form and sustain when they are effective and efficient alternatives to markets and hierarchies. Some scholars (e.g. Mayntz, 1994) view them as a hybrid mix of the two as they typically mix virtues of State, such as accountability and transparency, and efficiency and quality attributes of the market. According to Bardach and Eccles (1991), market signal of price and State legitimacy is intermingled with trust within networks. Some other authors (Kenis and Schneider, 1991; Powell, 1990) perceive networks as an alternative to both.

Explaining the distinction between markets and hierarchies, Powell (1990) points out that markets represent individualistic, unconstrained and non-cooperative social action. They offer choice, flexibility and opportunity. The administrative structures on the other hand are vertically integrated, have detailed rules, reporting protocols and lines of authority, formalized decision making well suited for repeated mass production and distribution. Their strength lies in accountability and reliability. The limitations of markets and hierarchies are however exposed when confronted with interdependent

activities and unidentified fluctuations. Networks are non-market, non-hierarchical forms of collective action and are found best suited for exchange of commodities which cannot be easily quantified or where prices are unsuccessful at capturing complexities of dynamic exchanges which are idiosyncratic in terms of technology, style of production or price. Transactions are marked neither through discrete exchanges (of markets) nor through administrative fiat (as in hierarchies); cooperation and reciprocity and mutually supportive actions articulate networks.

On the other hand, as Börzel (1997) notes, networks do not necessarily have 'dysfunctional consequences' of markets and hierarchies, and have reduced cost of transaction through close multi-sector collaboration. Kaneko and Imai (1987, cited in Powell, 1990) point out that 'thicker' and 'freer' information flow within networks reduces information asymmetry and thus transaction costs. Moreover, reciprocity of transaction and relational coordination reduces uncertainty. Putnam (1993: 74) finds that vertical frameworks, even with the most important of members, 'cannot sustain social trust and co-operation' due to their less reliable information flows as sanctions which support norms of reciprocity against opportunistic behaviour are less likely to be acceded to in vertical structures. While networks, by virtue of their embeddedness in social contexts, are observed to provide safeguards that are not dependent on exogenous and formal mechanisms and are therefore long lasting (Menard, 1994; Granovetter, 1985).

Additionally, networks are also being located within the recent discourses on governance and in midst of the weakening-strengthening-of-State debate. Despite claims towards 'hollowing of the State' (Rhodes, 1997) and 'rolling back the State' (Batley, 1996) implying reduced capacity of the core executive, some studies challenge this perception and indicate a transformation of the State from an 'actor' to an 'arena' in policy making (Kohler-Koch, 1996).

7 Analysing governance through policy networks

There is one view held by some commentators which argues that power of the State to control and command has diminished with growing influence of the private sector (Kickert *et al*., 1997a). Boyer and Drache (1996) point to volatility of international capital markets and regulation of financial markets to result in decline of State capacity to govern economy. While Fry (1998) draws attention to sub-national governments in

some countries seemingly bypassing State institutions. Termed as 'retreat of the State' (Strange, 1996), this phenomenon implies limited hegemonic powers, restrained autonomy and weakened capacity of the nation State to govern. It refers to a situation where external and internal restructuring deprives the State of its traditional sources of power. Networks comprising non-State members are argued to emerge in this backdrop to fill in the governance vacuum.

The counter-view challenging this notion of decline of the State suggests that the State is transforming rather than weakening (Kjaer, 2004; Weiss, 1997). According to Peters and Pierre (2004: 194), '[t]he strength of the state has become contextual and entrepreneurial rather than, as was previously the case, something derived from the constitutional and legal strength of the state institutions'. Similarly, Lindberg *et al*. (1991: 3) argue that '*governance*' indicates the State's 'emergence and rearrangement' which could increase control of the State (also see Newman, 2005; Taylor, 2000).

In order to understand how the 'networks' approach came to define governance it is worthwhile to survey literature on public administration to see how these concepts have been formed and modified.

7.1 Classical public administration

Deeper understanding of governance is more likely when role of the State is studied in context of classical public-private divide with distinct fundamental values, beliefs, ideologies, and sense of responsibilities underpinning both domains. Whereas the State has a service orientation and is required to look at the larger interest of people and set the national agenda in terms of policies, the private sector is expected to act as the driver for economic growth and generate wealth based on consumer satisfaction (Hodge, 2009). During the 1950s and 1960s, public provision of goods was built on the theory of 'market failure'; the market due to its profit-driven attitude was observed to be incapable of meeting the social needs which the State was argued to address. This was partly driven by the war followed by the Great Depression in 1920s and 1930s. In order to escape the inequities and imperfections brought on by negative externalities of the market, several thinkers favoured nationalisation and 'socialisation' of national resources such as land, mineral deposits, and insurance services, banks and industries (Lewis, 1949; Meade, 1948; Simons, 1948). The traditional conceptualisation of the State being the sole provider of services and goods for public welfare, however, came

under severe strain in the decades since 1970s. The government in its controlling and regulating mode was found to be outdated (Bekke and Kickert, 1995) and the arguably delegitimated State was viewed as path-dependent (Peters and Pierre, 1998) and inflicted with pathology of politicized bureaucracy (Peters and Wright, 1996). This was attributed to the bounded rationality of decision makers, predisposition toward rigidity, extreme focus on rules rather than the outcome, and growing rent-seeking behaviour of policy makers (Doyle, 1999). The rule-bound, rigid, slow and uniform governments with their 'bloated, wasteful and ineffective' bureaucracy (Osborne and Gaebler, 1992: 92) came to be widely perceived as inefficient and inadequate because of their hierarchical and vertical structures of management. These attributes were observed to prevent them from effectively managing the challenges of the complex mutli-sectoral and multi-organisational world of organisations. As Presthus (1975) points out, the structural approach of public administration focused more on organisational structure and personnel management. It tended to neglect roles of individuals and informal organisations in policy making and its implementation, and thus came to be generally referred to as 'organisation-without-people approach'. The private sector, on the other hand, came to be perceived as innovative, flexible and agile (Rom, 2000), to have more incentives for low-cost innovative products and be more attuned to shifting directions to respond to market changes (Daniels and Trebilock, 2000).

7.2 New Public Management

The inadequacy and inefficiency of the State to provide public goods and services coupled with the growing presumption of market superiority in management and delivery of services paved the way for New Public Management (NPM) in late 1970s, which had its moorings in neo-classical and new institutional economics (Hood, 1991). This reflected a swing of the pendulum from 'public interest view' and 'market failure' to 'private interest view' and 'bureaucratic failure' (Mackintosh, 1992). NPM assumed supremacy of the private sector for effective resource allocation and was based on the general belief that the private sector was more efficient than State-owned enterprises (Vining and Boardman, 1992; Boardman and Vining, 1989). It claimed that the government could work better when managers were more 'deregulated' with less rules and regulations and exposed to external competition. A market focus coupled with 'supply and demand' and 'user pays' ethos (Keast *et al*., 2006) tried to infuse entrepreneurial management techniques from the private sector to increase public sector

efficiency through contracts and competition within the public agencies and with the private sector. It stressed on disaggregation of public services, measured performance, output control and growth of markets, and hence, price signals (Hood, 1991).

The NPM, however, did not find universal acceptability. The fundamental flaw was arguably the notion that application of private sector techniques can address all performance and efficiency related problems affecting the public sector. Osborne (2006) observes that although it was flaunted as a new paradigm of public administration, it was nothing more than a transition in the evolution from traditional public administration to a more holistic understanding and theory of public governance. NPM did not account for the complexities and realties of the increasingly embryonic multi-structured socio-economic-political arena of policy making and focussed merely on the assumed wisdom of the private sector. It was criticised by scholars (e.g. Peters, 2001) who drew a sharp distinction between public management and running the government as a private concern. Some others (Pierre, 1995; Lewis, 1994) criticised NPM for reducing governing to the level of economic action, and citizens to little more than consumers where their rights as citizens have been diminished. The argument made was that government is concerned with a variety of social and economic activities that cannot always be reduced to figures which can be quantified and which cannot be achieved by following market mechanisms alone; within the market-based approach a strong tendency was observed towards quantifiable components of performance. Furthermore, the intra-governmental focus on the 'administration versus management' dichotomy seriously limited its universal applicability (Flynn, 2002; Metcalfe and Richards, 1991). Market provision of many public services, on the other hand, has been contested on the ground of marginalising the vulnerable communities while its profit motive is found unsuitable for public interest (Kettl, 2000). While its managerial focus provided tools for better implementation of government policies (Pollitt, 1988), such an orientation undervalued the importance of citizens' role in governance and need for collaborating with them based on equal partnerships (Peters, 1999). Examining applicability of NPM using market and deregulation to the developing countries, Peters (2001) demonstrates that ideas like NPM may not be directly applicable in the social and cultural contexts of these countries. Such countries, he notes, may require building their administrative capacities and strengthening the State before they dismantle these in order to adopt NPM.

The failure of NPM gave rise to concept of New Public Governance.

7.3 New Public Governance model

The advocates of New Public Governance define *governance* to be more than *government*. According to Rhodes (1995: 1-2), 'governance signifies a change in the meaning of government, referring to a *new* process of governing; or a *changed* condition of ordered *rule*; or the *new* method by which society is governed' (emphasis in original). Kooiman (1993) distinguishes between *governing*, which she describes as the process of goal oriented interventions presupposing action by the actors, and *governance*, which is result of the process of governing and indicates social coordination. Moreover, she states that government and governance are both means of governing society; while the former relates to forms connected with liberal representative democracies and the State as it is understood traditionally, the latter refers to a broader set of actors-elected representatives, public officials and interest groups. Commenting on governance, Leftwich (1994: 371) notes that '[g]overnance…refers to a looser and wider distribution of both internal and external political *and* economic power…Governance denotes the structures of political and crucially, economic relationships and rules by which the productive and distributive life of the society is governed'. According to Rosenau (1992), *government* refers to activities backed by formal authority and *governance* is more encompassing as it embraces both formal and non-governmental mechanisms. This definition counters the image of government as a unitary, hierarchical, directive and all pervasive institution and lays stress on a 'centreless society' (Luhmann, 1982) in a polycentric State defined by multiple actors. Skelcher (2000: 12) terms such a State as a 'congested State'.

This concept of governance explores the relational aspect of the State and its capabilities to project power beyond its own boundaries. The view of the State as a simple unitary class has been gradually abandoned to accommodate State power depicting complex social relations with non-State actors. The new meaning of governance does not point to State actors as the only entities in policy making and allocation of resources (Kickert *et al*., 1997a; Easton, 1965). It acknowledges the imperatives and dilemmas of modern day governments operating in a 'differentiated polity' (Rhodes, 1997). In this milieu amorphous non-State agencies possessing differentiated expertise inform the collective policy process (Kooiman, 1993) giving birth to policy networks, where governing is accomplished *with* and *through* networks. Summarising, according to Stoker (1998: 18), 'governance' is a set of actors and

institutions and actors drawn from and beyond government; blurring of boundaries dividing roles to address socio-economic issues; power dependence between institutions engaged in collective action; self governing networks; and shift in role of government from commanding to steering.

Central to the formation of networks are notions of functional specialization and resource interdependence. All governments face a vast array of interests, and aggregation is seen as a functional requirement and reality (Rhodes, 1997). It has been argued that no single actor has the resources, knowledge or sufficient action potential to handle issues or dominate unilaterally (Kooiman, 1993). Beate Kohler-Koch (1996) defines governance as a pattern which emerges in a socio-political context as an effect of interactions of various actors. Kohler-Koch and Eising (2000: 5) describe governance as:

> '[s]tructured ways and means in which the divergent preferences of interdependent actors are translated into policy choices to 'allocate values' so that the plurality of interest is transformed into co-ordinated action and the compliance of actors is achieved.'

This view finds support in the classical theory of democracy. According to Robert Dahl (1989), democracy provides a means to reach common decisions in society characterised by a plurality of interests that are often conflicting. This pluralist perspective is shared by Noberto Bobbio who notes that '[f]or a democratic system, the process of 'becoming' of transformation, is its natural state' (Bobbio, 1987: 17).

Furthermore, for scholars of this school, governance is not government setting policy and letting other agencies implement it, as suggested by Osborne and Gaebler (1992) when they differentiated between 'rowing' and steering'. Instead as Stoker (2000) argues, the government now collaborates with other actors for both formulating and implementation policies. Although, the government is a significant actor, it is not the 'controller'. As Beate Kohler-Koch (1999) explains, in a network mode of governance, the State is vertically and horizontally segregated and its role changes from being an authoritative allocator to that of an 'activator'. In this mode, along with a multitude of non-State interest organisations, the State is involved in multilateral negotiations to allocate functionally specific 'values'. The State is explored both as an *actor* and a *structure* and governance is understood as role of the State to influence and guide public policy (Lindberg and Campbell, 1991). Within this understanding of governance, the unit of analysis for governance is not 'the state understood in the institutional sense but

the state as a collection of policy arenas incorporating both governmental and private actors' which compete for power and legitimacy in policy making (Laumann and Knoke, 1987: 9). This arguably distances it from *anarchy* of markets and *command and control* of hierarchies.

Henry (2007) describes the journey of change through different paradigms chronologically. According to him, this shift towards a fundamental change in the way the government and governance are currently being perceived is primarily caused due to such trends as globalisation, redefinition, and devolution of powers. Globalisation is challenging the traditional roles and powers of governments, with the governments redefining themselves 'less in terms of power and hierarchy and more in terms of partnership and collaboration'. They are opting to work through non-governmental entities to implement public polices, improve their performance and for delivery of services. Over the past decades, this shift from 'institutional government' to 'networked governance' (Goodsell, 2006; Goldsmith and Eggers, 2004) is seen through 'a gradual addition of new administrative forms that facilitate governance' (Hill and Lynn, 2005: 173). Public policies and programmes are also being implemented by a network of private entities such as business corporations and non-profit organisations, and the private and public entities are losing their distinct identities (Kettl, 2002). Furthermore, as pointed out in the literature on welfare mix, while welfare delivery is often procured by the State, it is produced by market actors, and distributed through voluntary civil society associations (Pestoff, 1995).

Also, the 1980s saw re-emergence of regulationism where capitalist economies were seen as being socially embedded. The State was recognised to play a crucial role in reproduction and regulation of capital accumulation (Jessop, 1992 cited in Jessop, 2001). Gramsci (1971) analyses how government institutions were not merely technical in nature and the way the civil society shaped functions and effects of the government. Foucault (1980) stresses on dispersion and multiplicity of institutions which determine exercise of State power. He advocates an ascending approach emanating from complex strategic relations and conduct of diverse social agents outside the State. Much of this wave was credited to social scientists who claimed that the State was 'society centered' and the society determined the operations and influenced subsequent outcomes. Public administration theorists, however, postulated that societal factors are not wholly irrelevant, but their impact on a State was secondary and filtered by the distinctive administrative dimension of the State. The neo-Statists argued that the world cannot be

strictly divided into State and society (Mitchell, 1991). They posited that State autonomy is not a fixed structural construct but evolves as a response to its adjustment with external and internal forces. The State can hardly play the super ordinate role as prescribed by the early political theorists due to the centrifugal dynamism of differentiated polycentric modern societies (Willke 1987, cited in Jessop, 2001).

8 Analysing functioning of networks

Although networks have been recognised in literature to possess potential benefits on account of their structure and processes, there is a general consensus among scholars that they cannot substitute the formal institutions due to their own deficiencies.

Several studies have revealed that such multiform mutli-actor entities are associated with varied problems. They tend to become extremely complex requiring strategic management (Keast *et al*., 2006). Moreover, decision making may get lengthy resulting in delays and cost escalations due to many actors in the fray (Rhodes, 2000). According to Hirst (2000), networks do not possess the legitimacy of the democratic nation-State required for arbitrating for stabilising its structure. Furthermore, consensus may become difficult in a bargaining mode owing to two main reasons. One is 'prisoner's dilemma', where defection is more rewarding for the rational actor than compliance due to risk of being cheated (Scharpf, 1992 cited in Borzel, 1997). The other is 'structural dilemma', where conflict is caused by antagonistic interest of actors and intra-organisational constraints resulting in a sense of insecurity (Benz, 1992 cited in Borzel, 1997). Also, closed-networks face an imminent danger of becoming isolated from the outside world and blinded to new ideas (Gargiulo and Benassi, 1999). They may also lead to co-relative over-burdening and problems of free-riders where some benefit disproportionately at cost of others (Granovetter, 1985; Olson, 1965), and thus create 'social liability' and not 'social capital' (Gargiulo and Benassi, 1999).

Ferlie and Pettigrew (1996) point out that decision making in networks tends to be merely satisficing, not maximizing. Drawing on evidence from field of housing, Murdoch and Abram (1998) demonstrate that plural models can lead to strategic drift and lack of direction in policy making. Analysing experiences from Holland, Klijn *et al*. (1995) observe that networks set limit to ability of the State to implement policies. From his German experience, Mayntz (1993b) reports that networks tend to become *auto-poetic* (self-governing). They may steer inputs in directions they determine (Kjaer,

2004). Associated with high degree of closure, this results in networks resisting State interventions and regulations thereby exhibiting control issues (for examples from UK see Benyon and Edwards, 1999; Reid, 1999). Networks are also observed to lack stability over time (Fung and Wright, 2003).

Moreover, entities within networks are observed to have conflicting aims. On an ideological level, Naschold and von Otter (1996) identify the 'paradigmatic conflict' between public welfare and philosophy of competition. Whereas 'equity of the market' philosophy dominates the private sector, 'equity of need' is argued to guide State activities (Pollitt, 1993). The other drawback of networks is that objectives may get blurred. This may in turn lead to indeterminate outcomes. According to Jessop (1998), there is an inherent risk of governance failure within networks as actors may continue to remain in conflicting postures and fail to redefine objectives or reach any compromise. In highly conflict ridden areas of policy making, mere dialogues may not resolve the situation. As Goodsell (2006) argues, broad based deliberations may even be counter-productive, as time is of the essence.

Additionally, Provan and Kenis (2007) discuss dilemmas of network governance such as efficiency versus inclusiveness, internal versus external legitimacy and flexibility versus stability. Some authors (Keast *et al*., 2006; Skelcher, 2000) apprehend that crowding may lead to a sense of fragmentation in policymaking which may require more resources for coordination thereby increasing transaction costs. Moreover, networks are found to be governed by 'otiose and ineffective mechanisms of accountability' (Rhodes, 1988: 403) due to diffused power centres (Kjaer, 2004), weak citizen representation, multi-level governance and reliance on 'peer' accountability rather than conventional forms (Papadopoulos, 2007). Through study of 1600 projects in EU, Kohler-Koch (2006) concludes that less than 17% address questions of legitimacy and democracy. Power equations within networks are found to be instrumental in determining their efficiency. Keohane (1986) argues that reciprocity does not insulate actors from considerations of power, and networks are frequently criticised for aspects of dependency, particularism and subtly creating barriers for newcomers. Moreover, being auto-poetic, networks may exclude the unrepresented interest rather than allocate resources more efficiently than the State or markets (Marsh and Rhodes, 1992; Lowi, 1969). This may create privileged oligarchies leading to 'agent capture'. Streeck and Schmitter (1985) posit that this implies a radial argument for privatisation while forwarding argument of 'private interest government', where

policy making favours a certain few. State intervention is recommended in such circumstance to distribute resources for the larger interest (Daugbjerg, 1998).

Countering the criticisms, Kickert *et al*. (1997b) argue that this is not the problem posed by plural networks *per se*, as networks provide the structural and analytical framework, but is primarily due to their ineffective management, which opens the discussion for an active role of the government as the lead organisation in forming these 'purposive' or 'goal-oriented' networks (Kilduff and Tsai, 2003), to steer these networks more effectively towards accomplishment of shared goals.

9 Role of government within networks

The contemporary discourse on governance rejects reification of the State and postulates an 'associative' narrative of an emergent and dynamic State interdependent on a web of complex social institutions and actors. It analyses forms of associative networks relying neither on anarchic markets nor on bureaucracies. It sees diminution of role of government as a provider and direct allocator of resources with enhanced power for pluralist or meta-governance, and rejects the theory of decline of the State. This view implies limiting role of 'government', while still enlarging role of the 'State' seen in its acts of engaging with and coordinating non-State agencies towards pursuing public goals (Gourevitch, 1986). *The State involvement may be low, but its steering capacity is perceived to be significant.*

Terming 'demise of the State' as misleading, Linda Weiss (1997) states that the 'powerlessness' argument of State is over-exaggerated and even, over-generalised. She highlights adaptability of State, its differential capacity, and enhanced importance by virtue of the catalytic role it plays in consolidating national and regional networks and facilitating internationalization. 'Catalytic States' (Lind, 1992) are argued to achieve their social goals less by relying on their own resources than by adopting a dominant role in coalitions and networks with the private sector. Weiss (1997) postulates that those States will be successful in the era of globalisation which can augment their conventional sources of power with collaborative power. Commenting on the relation between good governance and development in the era of globalisation, Werlin (2003) indicates that prosperity or richness of a country is primarily attributable to the quality of governance than to the richness of its natural resources. Similarly, Jreisat (2004) argues that progress and development of society depend on ability of the prevailing

systems of governance to act responsibly and adequately. This argument is forcefully underscored by Chibber (1997: 17) when he describes good governance as a 'vital necessity' without which no development can take place; success stories around the world have demonstrated that what is needed is an effective State that can play the role of facilitator, catalyst and partner, and not a minimalist State. Growth rate is found to be higher in countries with better state policies and stronger institutional capabilities. According to Jabbra and Dwivedi (2004), good governance is essential for poor countries if they intend to receive benefits from globalisation, as when managed effectively, the interplay between good governance and globalisation can become a transformative process that stabilises society.

Scharpf (1994) argues that networks function under 'shadow of hierarchy' (1994: 38), and State defines the context to a considerable extent within which networks function, and networks benefit from being embedded in the hierarchical structures as the State can sanction opportunities. Peters (1998) observes that partnerships with the private sector, in order to be sustained, need support and legitimacy from the State. Some authors (Kjaer, 2004; Jessop, 2003) refer to role of government for 'meta-governance', suggesting a broader process of formulating policy and a range of mechanisms for allocating and coordinating recourses, influencing structuring of economic space through macroeconomic policies, juridical regulation and shaping conditions for self regulation. Evans (1995) finds this as a pre-requisite of the State as a network partner while still ensuring that it does not succumb to the pressures of demands of concentrated interests. In this view, bureaucratic coherence is not perceived to be contradictory with networks, but one that represents effectiveness of the State.

There is broad convergence among many literary observers (Kjaer, 2004; Rhodes, 1996; Scharpf, 1994) that when networks function along with hierarchies, governance adorns a complex character of confronting and managing complex institutional arrangements; in such a situation, new techniques of strategic management are required and governance does not mean '*no* government' but is carried out with '*more than* government'. The instrumental or steering approach (Stoker, 2004; Perri6 *et al*., 2002) views networks as structures to be managed, and the government is required to have right tools (Salamon, 2000) to effectively steer and manage mix of hierarchies, markets and networks. Rhodes (1997) states that 'accountability gap' widens when no new arrangements are introduced to manage the new structures with new and more actors in policy making. The traditional systems have been found to be largely inadequate to deal

with these new forms of governance. Waldergrave (1993) draws the distinction between *responsibility*, which can be delegated, and *accountability*, which firmly remains the sole domain of the government. Similarly, Fleurke and Willemse (2004) apprehend that such a situation where governments do not play a key role may cause 'deficit of political democracy'. Perri6 (1997) therefore advises on government devising and imposing tools to achieve integrated planning within networks to attain public objectives.

Several scholars (Hirst and Thompson, 1995; Badie and Birnbaum, 1983) advocate for a prime role for the government within networks. They argue that among all actors, only the government has constitutional legitimacy, authority, autonomy, mandate, and legal authority to seek and protect larger public good. Goodsell (2006: 633) points out that the public administrative machinery is more than an agency 'to execute policies, enforce laws, reach targets, and do what they are told'. Rather, it is a 'social asset at the core of democratic governance'. The same argument features in the World Development Report (World Bank, 1997) that acknowledges that an effective State is essential for development to take place. Such a State facilitates provision and growth of physical, economic, social, and other infrastructures, without which social and economic development are not possible. Moreover, *governance structures* are also found to be necessary for providing a secure predictable political basis for markets to function (Williamson, 1985). The confidence and trust generated in the public by an effective State gives rise to 'trust capital', which is argued to have stronger force than financial and human capitals (Harisalo and Miettinen, 2002).

10 Conclusion

This chapter outlined the theoretical framework of 'networks' approach to governance, and discussed the features and characteristics of 'policy networks'. It critically analysed the governance issues of networks thus arguing on a theoretical level for an active role of the State in their governance. Combined with the previous chapter, this chapter provides the conceptual framework for this research where I have analysed PPPs as networks between the government and the private sector agencies, in order to gain deeper understanding of the issues of governance of PPPs.

As mentioned earlier, despite some dominating financial, legal, contractual and project management aspects, there are distinct governance features of PPPs that can be analysed

by studying them as network forms of governance. Within the PPP mode, provisioning of services moves out of the sole preserve of the government, as the State engages with non-State partners to supplement its efforts in planning, design and implementation of public services. Within a resource inter-dependency model, PPPs are argued to blur the theoretical boundaries of the private and public domains and thus pool complementary attributes of government agencies and private partners aimed at achieving State-directed public objectives. PPPs are perceived to be agile and responsive to emergent situations and can respond to users' demands more effectively, and are argued to provide access to innovative solutions by the private partner. Similar to networks, PPPs arguably reduce transactions cost by thicker information flows, reduced information asymmetry and uncertainty, reciprocity of transaction, and relational coordination.

The literature on PPPs indicates that similar to networks that bring together multiple and heterogeneous entities into a partnership for a common objective, PPPs bring actors from the government and the private sector with differing and distinct motivation and priorities, values, ideals and ethics, and ideologies (based on the normative and conventional division of their roles) in a close long-term relationship. Growing body of evidence reveals that PPPs in the industrialised countries are saddled with several fairly serious issues of governance. On the other hand, literature on networks highlights similar issues regarding conflicting interests and motivations between network partners, and complexities of functioning within networks such as agency capture and tendency by the non-State actors to steer policies to fulfil self interests.

Despite the claims supporting the superiority of the PPP mechanism as compared to the provisioning of services by the government, evidence from worldwide experience of PPPs has revealed serious concerns in respect to their transparency, accountability, equity and efficacy under all conditions, and the risk of agency and elite capture. A growing body of literature studying PPPs in the OECD and capitalist countries has questioned the veracity of claims regarding their economic superiority, profitability and effectiveness pointing out that inaccurate discount rates, and flimsy and unprofitable risk analysis based on subjective criteria are often employed for estimation of the profits within PPPs. Studies have also revealed flawed evidence to support claims of improved time and cost over-runs by adoption of PPPs, excessive profiteering and hidden wealth transfers to the financiers and private partners. It is also pointed out that the entire mechanism of PPPs is resulting in subtle but definite political power shift towards the private sector facilitated by the power of its capital.

Additionally, the literature highlights political, economic, administrative and social constraints in case of some low-income countries against achieving the desired outcomes of PPPs. Studies also reveal evidence of 'crony capitalism' and 'clientelistic' nature of decision making in order to benefit a few powerful actors within the private as well as in public sector.

The government of India is increasingly relying on private sector participation for fulfilling the country's infrastructure deficit. India has the second largest road network in the world. The government is employing the PPP framework for its largest roads and highways development programme in the country claimed to be one of the largest such programmes in the world. Targeted investments in the road sector have been doubled for 2012-2017 over the immediately preceding corresponding period. About half of these investments are expected to come from the private sector. However, according to Hodge (2009: 21) '[s]everal PPP objectives relating to governance issues…deserve a better evidence base rather than the current anecdotal observations and assertions'. While the more recent research on PPPs advocates a cautious approach towards these modes and a serious discussion into the governance aspects of PPPs rather than the contractual, legal and technical issues, in the Indian context, policymakers seem to be anchoring their arguments on such anecdotal evidence. The empirical evidence base to demonstrate whether they have been able to bring private efficiencies in delivery of public services, in the diverse contexts of road transport in a vast country such as India, has been thin and sketchy. The available studies (Datta, 2009; Singh and Kalidindi, 2009; Rastogi, 2004; Ghosh *et al*., 1997; Stewart-Smith, 1995) tend to evaluate PPPs largely from financial, legal, contractual, organisational, project management and engineering perspectives. Analysis of PPPs from a governance perspective, investigating the role of the State in the partnerships, has been largely missing in the Indian literature on PPPs. Thus there exists a substantial gap in the knowledge on PPPs in the Indian context. This research attempts to fill the aforesaid gap in the literature on PPPs in India.

Accordingly, I set out to understand the nature of such partnerships in the road transport infrastructure in India. My study explores the nature of role of the State and private partners within these partnerships, and the division of responsibilities, risks and benefits between the two. In order to gain deeper understanding of issues of governance at the national, state and local levels, representative cases in national and state highways were selected, along with an urban transportation system. Literature suggests that as PPPs are

embedded in a country context with differing power relations between the State and the market, they tend to be operationalised in different ways. This research attempts to analyse the causal underlying structures and mechanisms that shape PPPs in road transport sector in India, and produce the observable events of the partnerships either achieving their stated outcomes or failing to do so. Furthermore, evidence in literature supports an active role of the State within PPPs for their effective governance. This research explores whether these theoretical propositions are applicable to the Indian context. A further aim of this research is to suggest policy measures aimed at enhancing the effectiveness and efficiency of these modes of service delivery.

The following chapter outlines the research design adopted for this study. It discusses the philosophical underpinnings of this research and describes the chosen methodology.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

1 Introduction

This chapter discusses the research design adopted for this study. I have rooted my research within a critical realist framework that helps to understand and explain the multi-dimensional structural underpinnings of a social phenomenon. The chapter succinctly discusses the principal tenets of critical realism, and explains its relevance to the topic under study. The modes of inference and methods of data collection employed for this study are subsequently discussed. The chapter concludes with discussion of modes of analysis of data, issues of validity and ethical dimensions of the research.

2 Understanding the social reality

The philosophical moorings for this research follow the 'critical realist' thinking of human sciences forwarded by Bhaskar Roy and further elaborated and developed by scholars such as Andrew Sayer, Derek Layder, Margaret Archer, Andrew Collier and Tony Lawson. The point of departure from other schools of logic, such as positivism, is that for critical realists, reality is not reduced to what is perceived by the senses. 'Events' do not explain the social world; rather they are the starting point for deeper investigation into the structures and mechanisms which cause the phenomenon to take place (Danemark *et al*., 2002). Secondly, meaning for understanding any particular phenomenon has to be explained; it cannot be measured or counted. This explains a strong interpretive element in social science (Sayer, 2000). Moreover, critical theory is 'founded on the idea that *reason* is the highest potentiality of human beings and that, through its use, it is possible to criticise and challenge the nature of existing societies' (Blaikie, 2000: 52, emphasis in original). Danermark *et al*. (2002) observe that reasoning and man's ability to analyse, relate, abstract and interpret form a fundamental pre-requisite for knowledge development; science can never be limited to merely observe, register and report.

Critical realism counters and rejects the 'structuralist' (Levi-Strauss, 1949) view which emphasises the role of social structures in determining human actions, and the 'voluntarist' account where human beings through their thoughts, habits and discourses

shape social structures. The ontological stand of realists is that both structures and agency (i.e. humans) possess distinct *sui generis* powers and properties which produce the social world that we inhabit. Social structures are marked by their *anteriority* e.g. various social, economic, legal and linguistic systems precede us. Moreover, they are relatively enduring and have powers of enablement and constraint (e.g. systems of discrimination such as racial prejudice in some countries, and caste systems in India constrain the discriminated while enabling the discriminators). Humans with their powers of knowledge, reflexivity, self-consciousness, intentionality and emotionality can, individually and collectively, change and create structures. Thus, both structures and agencies cannot be reduced to each other, and interplay between the two produce contingent yet explicable outcomes (Carter and New, 2004). According to Archer (1995: 213), social contexts provide 'directional guidance' to the agents by providing them options which might limit their actions or enable them, and explanation of any event involves conjunction of structure and agency (Carter and New, 2004).

Critical realists' worldview distinguishes between the social world which is the object of study, (termed as '*intransitive*'), and our knowledge of it (referred to as '*transitive*') (Bhaskar, 1975). Carter and New (2004) claim that the general tendency in various branches of social science is to attribute knowledge about the world to the world itself, resulting in what Bhaskar terms as 'epistemic fallacy' (1989: 133). The intransitive exists independent of our cognition and is not changed by our knowledge of it or the processes through which we learn about it; whereas the transitive is 'affected by our learning about it' (Olsen, 2008). The former is known by our concepts and theories about it, but is neither a product of it nor is constituted by it. Thus things in reality may be different from how we perceive them to be (Carter and New, 2004).

Critical realism stems from the belief that the reality, neither natural nor social, is 'fixed, flat or transparent' (Danermark *et al*., 2002: 43). The social world is differentiated, stratified and changing, and reality of this realm consists of three overlapping domains: the *real*, *actual* and *empirical*. Whereas the *empirical* domain consists of events and phenomena which can be observed and possibly measured, the *actual* comprises events, happenings and phenomena, whether or not these are observed (i.e. they may occur independently of them being observed). The *real* domain is the deeper dimension, has an objective existence and exists without our cognitive consciousness of it. It encompasses actual and empirical realms, has distinct structures and possesses generative powers and mechanisms which may or may not be observed,

but are known by effects they generate. Events become empirical facts when they are observed (Bhaskar, 1989). Thus even when our attention is focussed on an 'immediate concrete situation', the 'multiplicity of successively and coexistently emerging' generative mechanisms remains undiminished (Weber in Bourdieu *et al*., 1991: 149).

Moreover, the nested reality is hierarchically stratified. The higher strata evolve from basic shallower ones and possess *emergent* powers and mechanisms with unique, qualitatively different, autonomous, and new non-reducible properties, i.e. the emergent powers and liabilities cannot be reduced to those of their constituent components as they are more than a sum of the constituent components from the lower strata (Bhaskar, 1975). Moreover, the researcher may, in most cases, focus on the stratum within which the research problem inhabits and take the underlying strata for granted; the choice of the mechanism(s) also depends on the choice of subject of research. This counters the 'materialistic reductionism' argument of empiricists (i.e. 'atomism' and 'holism') which leads to erroneous conclusions regarding causal mechanisms (Danermark *et al*., 2002) e.g. language cannot be reduced to just what people say to each other, rather it is a 'cultural emergent property' of man's interaction with the material world (Archer, 2000). It also rejects the kind of research which investigates merely associations or co-relationships between objects based on 'variables' belonging to different strata and in the process may lead researchers to wrongly identify the generative causal powers and mechanisms (Sayer, 1992). Social reality tends to resemble a 'structured mess' which proves to be 'notoriously recalcitrant to dissection into variables' (Carter and New, 2004: 16).

The consequence is that 'high strata sciences' are open systems. This is opposed to 'closed systems' in which generative mechanisms operate independently of other mechanisms and in isolation. 'Closed systems' are impossible in social reality as it is difficult to isolate higher strata mechanisms from the lower ones in which they are rooted and emerge from. Moreover, social reality has limitless variables interacting and influencing each other with its 'historical and interdependent character of social activities' (Bhaskar, 1989: 51). As Danermark *et al*. (2002) point out, systems in nature are never closed; the openness and closure is only a matter of degree.

Social objects have their inherent powers and liabilities, which may or may not be exercised, because of their structures and mechanisms. A mechanism operates only when it is triggered by an 'efficient cause' e.g. a match has inherent power of producing

fire but is lit when you strike it (Collier, 1994: 43), which implies that relation between generative mechanisms and their effects is external and contingent. Although a generative mechanism may exit and may even be triggered, the effect may not be seen as external conditions determine when it shall operate. The outcome is result of a complex influence of various mechanisms. There are many mechanisms concurrently active, as social reality is differentiated and stratified; some mechanisms reinforce each other while others counteract and frustrate each other's manifestations. Thus even though mechanisms are at work, their effects may not be observable (Danermark *et al*., 2002). A bad abstraction based solely on observation at the concrete level may therefore not adequately inform about the causal factors which, although operational, may not be observed.

The above two points taken together lead to the conclusion that, objects merely *tend* to behave in a certain way and these tendencies are *transfactual*, i.e. actual behaviour is dependent upon countless combinations of several accidental circumstances and interplay between mechanisms within different strata of reality which produce concrete events. '[C]ausal laws…must be analysed as tendencies' (Bhaskar, 1978: 50) as at any given moment there is 'an uncertainty as to the actual outcome of the activity' (Danemark *et al*., 2002: 56). Moreover, since regularities only tend to be so, the general modes of inference such as induction and deduction, may have limited use for critical realists. No constant conjunctions of events prevail, as open nature of society makes it impossible to make universal laws[13]. Thus knowledge of reality is fallible and transitive; it can be the object of further studies and can be corroborated or falsified (Bhaskar, 1975). Moving away from law like predictions, claims of tendencies are now being made even in the world of natural science. Capra (1982: 80) explains that at subatomic level, rather than existing with certainty at definite places, matter shows 'tendencies to exist'; atomic events do not occur with certainty at any definite time or in any definite way. Instead, they exhibit 'tendencies to occur'.

Following from the above is the conclusion that predictions cannot be made in social reality, which has open systems and regularities merely *tend* to be so. According to realists, explanations are different from predictions. Predictions in social reality will be inaccurate and unreliable, as a causal claim is not about regularity between objects or

[13] 'The citation of law presupposes a claim about the activity of some mechanism but not about the conditions under which the mechanism operates and hence not about the results of its activity, i.e. the actual outcome on any particular occasion' (Bhaskar, 1975: 95).

events but about investigation into the causal structures and mechanisms which themselves undergo unforeseen and unpredictable changes (Sayer, 1992). Here, observable effects of operating mechanisms vary depending on contingent circumstances. Thus, what causes a phenomenon to occur has nothing to do with how many times we observe it to happen or whether we can predict it or not (Harre, 1972). Secondly, in the realist definition, knowledge of regularities is incapable of furnishing their 'historical configurations' (Bourdieu *et al*., 1991: 149). However, Danermark *et al.* (2002: 1) argue that although it may be impossible to make predictions in social reality, a well-informed discussion regarding the potential consequences of mechanisms operating in different contexts is possible on the basis of analysis of causal mechanisms. Moreover, no generalisations can be made in social inquiry as they are '…indifferent to structures. Even where they refer to like-constituted entities they say nothing about whether each individual is independent of or connected to any other' (Sayer, 1992: 101). Moreover, as noted by Carter and New (2004: 1), the human relations are so immersed in complexities, that social reality could never be 'reduced to a set of unchanging generalizations'. Conceding that reality is too complex to be predicted or anticipated, the realist concept of generality refers to existence of more or less universal preconditions for the object to exist (Danermark *et al*., 2002).

3 'Knowing' the social world: Epistemological tools

According to Bhaskar (1978: 13), any research into social reality should concern itself with the fundamental question of '[w]hat properties do societies and people possess that might make them possible objects for knowledge?' Or as Sayer (1992: 91) writes, '[w]hat is it *about* the object that causes it to do such and such?' Abstractions which are based on conceptualisation of the object under study provide the starting point for realists. For such abstraction, they do not presuppose a world without its antecedents (formed by social, economic, political, cultural and gender-related factors). Or in other words, construction of knowledge is the understanding of the social world which itself is a construct; a '*presuppositionless science'* is a *'positivist illusion'* (Bourdieu *et al*., 1991: 149). Knowledge of reality is thus, conceptually and contextually mediated and situated, where facts are not theory-*neutral* but theory-*dependent* and not theory-*determined* (Danermark *et al*., 2002), as Sayer (1992) points out that observation is influenced by theory. The world can be understood from pre-existing concepts and theories which however do not determine structure of the real world. The critically

gained knowledge depends on purpose of the study and position of investigator; knowledge of a finite part within an infinite phenomenon becomes significant only when it is based on the perception of its meaningfulness, and that is what makes it an object of investigation (Weber in Bourdieu *et al*., 1991). Contrary to empiricist epistemology that values 'value neutrality', critical realism stresses on analysis of values as part of research strategy (Olsen, 2004). Additionally, it is not impervious to the meaning ascribed to it, which thus makes the frame of meaning an indispensable tool for understanding (Sayer, 1992). Thus, there is central position of interpretation in defining social reality. Therefore, production of knowledge is a social practice and derives from its subjective experiencing (Sayer, 2000). For realists, knowledge of social world is a social product and not independent of its production or the men who produce it (Bhaskar, 1978).

The principal tool required of the researcher employing critical realism is her ability of logical reasoning which involves different ways of thought operations, abstracting, imagining, interpreting and drawing conclusions; and also to be able to derive meanings between relationships with consistency (Danermark *et al*., 2002).

4 Research design

This is an exploratory research. According to Vogt (1995: 105) '[*s*]*ocial science exploration* is a broad-mixing, purposive, systematic, prearranged undertaking designed to maximize the discovery of generalisations leading to description and understanding of an area or psychological life' (italics in original). Manne *et al*. (2001: v) describe exploration as a more accurate way of investigating and representing social research due to its 'open character and emphasis on flexibility, pragmatism, and the particular, biographically specific interests of an investigator'. They argue that social research should be exploratory as it makes the study an 'interest-governed process'. Stebbins (2001) points out that since social reality exhibits rapid changes, exploration even in well-researched fields is advocated as a good practice in order to ensure that established theory is enriched by the new developments in the area of study. PPPs in India are relatively new phenomena and remain a fairly un-researched field of study. It thus seems that an exploratory study, investigating into its various governance imperatives instead of confirmation of a hypothesis, may aid generation of meaningful knowledge in this field. Sayer (1992: 244) argues that for an intensive research the study has 'to be exploratory in a strong sense'.

Critical realism does not prescribe any particular tool for research; it in fact overrules any methodological classification. It argues for a methodological mix postulated by the ontological and epistemological needs of the research. It could be an intensive or extensive design or a mix of both, depending on the subject and purpose of investigation. Also, different theoretical perspectives and interdisciplinary approaches may be necessary to explain a certain phenomenon (Danermark *et al*., 2002). Following the critical realism spirit, this study employs interdisciplinary approaches such as public administration and public policy (viewing PPPs as new forms of governance), public finance (understanding the State versus market funding of PPPs), organisational theories (examining PPPs as new forms of networked organisations), and political science (exploring PPPs within the State-market debate, and understanding whether and how the political economy of Indian states influences their existence, acceptance and growth). Use of these approaches has been helpful to furnish knowledge of various inter-linking underlying mechanisms explaining several aspects within PPPs from different intellectual viewpoints. This multi-dimensional inquiry has enriched the study.

The research is also largely and primarily intensive. Choice of this approach has been guided by the thinking that an intensive approach is well suited for explaining social phenomena as it furnishes understanding not only about these events but enables acquiring knowledge about and meaning of the causal generative mechanisms underlying them (Denzin and Lincoln, 2005; Danemark *et al*., 2002; Taylor and Bogdan, 1984). Describing intensive research as 'endlessly creative and interpretative', Denzin and Lincoln (2003: 37) argue that it lays emphasis on the qualities of entities, the processes and their meanings, while stressing on the 'socially constructed nature of reality' (Denzin and Lincoln, 2005: 10). Moreover, it is claimed to be fundamentally interpretative and views a social phenomenon holistically (Creswell, 2003). Following Sayer (2000), as meaning has to be understood through interpretation in social research and cannot be measured, this is appropriate for a study guided by critical realist reasoning as it ties up search for meaning through a research with interpretation. The classical strengths of qualitative data, like their attention to perspectives, depiction of details, and portrayal of processes in an emergent mode, are helpful in overcoming the abstraction inherent in extensive studies using quantitative modes (Patton, 1980). Intensive research employing qualitative research methods are more likely to reveal interactions and interdependence of various parts of a system rather than quantitative methods which are more suited for understanding about characteristics of the parts. The

latter are therefore found to be inadequate to meaningfully analyse the context and complex causation factors that underlie social processes (Byrne *et al*., 2009). Blaikie (2000) observes that even when the study is extensive, it begins with words and the interpretation of numbers is also through words. Denzin and Lincoln (2005) explain that the interpretative interweaving of text, images and montages, among other data, represents the specifics of a complex situation, which is the result in an 'emergent construction' according to Weinstein and Weinstein (1991: 161). Ragin (1994) notes that big-picture representations (offered by quantitative researches) often either fail to represent or seriously misrepresent important social phenomena due to lack of *in-depth* examination of specific cases. Maxwell (1996) points out that a qualitative approach preserves uniqueness of the individuals and situations it studies, in their analyses. It also explains how the unique circumstances in which they occur shape them and lend them meaning.

Moreover, critical realism counters the 'statistical mode of explanation' (Nash, 1999: 453) which according to Byrne (1998) provides 'traces of reality' as it charts statistical relationships and regularities between variables on the concrete level. They cannot however, inform about the cause and furnish explanations, as causative structures and mechanisms are constituted by internal relations between objects and must necessarily be understood qualitatively. The causality is analysed by way of examining actual connections rather than 'ambiguous evidence of aggregate formal relations among taxonomic classes' (Sayer, 1992: 244). '[W]hat causes an event has nothing to do with the number of times it has been observed to occur and nothing to do with whether we happen to be able to predict it' (Harre, 1972: 117) as the exercise of generative mechanisms is very often unclear from patterns of empirical events, even when they are regular.

5 Research strategy

A retroductive strategy is adopted to investigate into the subject of research. Bhaskar (1989: 11) called retroduction 'a movement of thought'. It is a way of inference where the researcher moves from level of individual observations to deeper strata of reality in order to gain knowledge about the basic underlying structures (Lawson, 1997). Retroduction is described as a 'way of reasoning' which answers questions about what must exit for an event or phenomenon to be possible (Danemark *et al*., 2002). As the social world is stratified, any attempt to understand it must take the researcher to the

level beyond that of the observed events to the understanding of the causative structures and mechanisms in the deeper realms (Carter and New, 2004; Porpora, 1998). According to Danermark *et al*. (2002), abduction and retroduction are two important tools to reveal the causal mechanisms, generated by the properties possessed by social objects, which aid in the endeavour of explaining the social phenomena. With abduction, the researcher can observe and interpret social phenomena in a new framework which may help generate deeper and newer concepts. Alvesson and Skoldberg (2009) argue that retroduction furnishes opportunities to understand truth, rather than establish it. It is an accepted tool to answer the '*why*' questions pertaining to exploratory research which delve into *explanation* of events or phenomena. It is argued to be an 'appropriate logic of enquiry' for a study within realm of critical realism, as it aids to reveal the underlying mechanisms which effectuate an event (Blaikie, 2000). It provides a framework to move from empirical generalisations to transfactual conditions expressed by abstract concepts (Danemark *et al*., 2002). Retroduction as a mode of inference provides knowledge of *how* a process works.

The process of retroduction is a 'thought operation' (Danemark *et al*., 2002). Thought experiment in social science is different than physical experiment in natural sciences where some mechanisms are isolated. In social science these cannot be physically isolated but can be only abstracted in thought. Abstractions aid to analyse objects, as parts of wider structures, in terms of their constitutive structures and causal powers while separating them from that which is more contingent. Thought experiment involves three stages of description, explanation and redescription, all aimed to continually expose, understand and explain the nested and stratified layers of reality (Blaikie, 1993). This is achieved through an iterative process involving repeated movements between stages of organised description of experienced events to develop abstractions focussing on generative mechanisms causing these. This involves a double movement moving from the concrete→abstract, abstract → concrete (Sayer, 1992: 87). While doing so, the 'social scientist will move back and forth between theoretical description of things and their inter relationships at various levels, and discovery and explanation of their properties' (Carter and New, 2004: 9). On reaching a better understanding of reality, the investigator modifies its concept (Carter and New, 2004). In practical research this double movement often progresses simultaneously and stops only when the investigator ends the analysis (Danemark *et al*., 2002). Bhaskar (1975: 125) employed the four-stage 'RRRE' model of explanation for open social systems moving from *resolution* of a

complex phenomenon into its constituents (through causal analysis), *redescription* of component causes of an event, *retroduction* of the possible causes of the events, and *elimination* of possible alternative causes.

6 Research methods

Critical realism does not prescribe any particular method for research. There is 'no such thing as the method of critical realism' (Danermark *et al*., 2002: 73). Sayer (1992) propounds a triangle of research method, object and purpose of study which need to be taken in relation to each other. For my research I have chosen the case study method combined with qualitative interviews, as '[i]ntensive research uses mainly qualitative methods such as structural and causal analysis,…and/or informal and interactive interviews' (Sayer, 1992: 244). Interviews, in qualitative research, are termed as 'the gold standard' (Silverman, 2000) and remain the most commonly used means of gathering data (King, 2004). Burgess (1984: 102) describes interviews as 'conversation with a purpose', the purpose being collection of information to aid understanding of the issue under analysis of the researcher.

As early as 1934, Willard Waller described the case study approach as being essentially 'artistic' and one that produced insight (Waller, 1934: 295). Gerring (2007: 20) defines a case study as 'the intensive study of a single case where the purpose of that study is – at least in part- to shed light on a larger class of cases (a population)'. The defining characteristic lies in its ability to infer a larger whole from a much smaller part, while both still retain their significance in the final product. As a research method, this approach remains much stronger at assessing *whether* and *how* a variable mattered to the outcome than at assessing *how much* it mattered (George and Bennett, 2005). This method enjoys a natural advantage in research of an exploratory nature (Gerring, 2007) as it enables making meaningful and contextual observations (Denzin and Lincoln, 2005). Yin (2002: 2) notes that the case study methodology 'allows investigators to retain the holistic and meaningful characteristics of real-life events'. While Byrne (2009) notes that cases provide an explicit dialectical synthesis between the cause and interpretation of causes, Rubinson and Ragin (2007: 374) argue that case-based investigation can be employed 'to address causal complexity'. Case study therefore seems to be an appropriate method for research rooted in critical realist philosophy.

Furthermore, retroductive approach helps in discovering theoretical structures which aid in conceptualising the empirical and deductive patterns that a single case reflects (Alvesson and Skoldberg, 1994 in Saether, 1998). Ragin (1994) claims that critical realism supports the view that cases are real entities which represent the causal mechanisms, while still being an iterative and a tentative process. According to Stake (2000: 435) case studies 'draw attention to what can be learned from a single case'. Even within a single case, analysis may be at different levels thus providing deep insight of the research subject (Yin, 1984). He describes the kind of case studies I have conducted as 'instrumental case studies' where 'the case is of secondary interest, it plays a supportive role, and it facilitates our understanding of something else' (Stake, 2000: 437) i.e. although cases of PPPs in urban bus transportation and national and state highways have been chosen, the aim is to understand PPPs through them, and within PPPs, to gain deeper knowledge about the issues of governance.

Moreover, case study seems to be appropriate method for an exploratory research. As Peter Evans (1996: 1119) notes, '[g]eneralizations derived from a small number of cases have to be considered exploratory. Still, common themes derived from such a diverse set of analyses certainly must be considered useful clues'.

7 Operationalising the research

There is an agreement among several scholars (Nagel, 1986; Popper, 1972; Myrdal, 1944) that there is no view without a viewpoint. Similarly, although internationally PPPs have been discussed and analysed through various perspectives, the purpose of my study was to understand the causes which have made PPPs a favoured means of service delivery in India in road transport infrastructure. I was also interested in knowing how PPPs are operationalised in India in terms of the roles and responsibilities of the State agencies and the private partners within these new frameworks. I was keen to know who benefits from this and in what way, or as Pawson and Tilley (1997: 210) write, '*what* works for *whom* in *what* circumstance'. From the point of view of a civil servant the aim of this research was to gain deeper understanding regarding the varied issues of governance of PPPs, in order to enhance their efficiency and effectiveness as modes of delivery of public services.

The philosophy of critical realism was found to be most appropriate for this kind of research as this enabled me to seek the answers by not only observing the events (which

started me on the quest) but by identifying and revealing the generative mechanisms embedded in the underlying inter-linked 'nested' 'web-like' multidimensional structures emerging from different social, economic, administrative, organisational, behavioural and political contexts surrounding the object of study. As a critical realist, my research is theory-laden. I scanned through literature to understand the meaning of concept of PPPs in different contexts, through their worldwide experiences. It provided answers to the preliminary knowledge gaps within me and helped me to critically analyse PPPs in India in terms of their contextual distinctiveness and similarities. Conceptual understanding of PPPs helped me to sharply frame my questionnaires which were fairly well-structured (while still being exploratory), seeking to unravel in greater detail the selected structural layers which would furnish answers to my research questions. As King (2004) observes, the realist interviews are more structured as compared to other types of qualitative interviews.

In my research, retroduction helped me to move from the observable events to the causative forces embedded in the structures underlying these events and producing them. In order to understand the growing reliance on PPPs in roads sector in India and to explore the nature and role of the State within the partnerships, I investigated the layers of public finance, public administration and political economy of the states where PPPs have been more accepted. This also furnished knowledge regarding the growing acceptance of PPPs as a new form of governance where the State sees itself more as a facilitator and a partner than a direct provider. I further explored the historical background of the State-market divide and understood the changing nature of public administration over the past few decades and impact of the growing expertise within the private sector in areas which were hitherto considered the pervasive domain of the State. Issues such as the lack of adequate resources within the government and poor service delivery when provided through government agencies, were analysed to understand increased dependence on the private sector within the 'policy networks' framework. The motivating reasons for the private sector to be engaged in delivery of public service (such as seeking larger markets for their expansion and possibly a way to influence public policy by engaging itself with the State) provided significant clues to draw answer regarding the changing State-market landscape.

In order to explore whether PPPs are 'partnerships' and operate as 'policy networks' in India, in the way the terms are described in literature on PPPs and governance, I examined how the roles, responsibilities, risks and benefits are divided between the

public and private partners within PPPs in roads in India. I also examined to what extent private sector resources have been invested in the projects under study. I substantiated this knowledge through secondary data from other PPPs projects in the roads and other infrastructure sectors. I also attempted to study the economics of awarding large contracts in order to understand 'who' benefits in the final analysis; whether and in what ways do the users benefit from PPPs; and whether the association between the government and private agencies furthers the private interests of certain elite actors within both the sectors. As the last issue is a sensitive matter, many respondents were reluctant to share information regarding it. Those who provided some information did on clause of anonymity and did not want to be recorded. I therefore heavily relied on anecdotal evidence and secondary data found in media reports and reports of Parliamentary Committees to substantiate my findings.

The third research question seeks to examine and identify the factors that shape PPPs in roads sector in the Indian context, and in cases where these deviated from normative description, I examined the mechanisms which caused this and the structures from which these mechanisms emerged. The roles of the private and public partners were also investigated. I relied on primary data collected through interviews and secondary data from media reports, government reports and other published reports. The research also revealed that inter-linkages between several layers of complex and at times unobservable social-economic-political structures, generated instances of land grabbing by the private partners and rent-seeking and corruption within both the partners. While empirical facts at the first glance suggested particular causal factors, deeper investigation unravelled different and more complex inter-linked causal mechanisms. For example, most of the respondents found the policies of the government and the development-oriented business community of Gujarat largely responsible for the economic growth of the state. I, however, argue that these are the empirical events which are the result of the underlying fundamental causes such as the political economy of the state driven by their political leaders, which shapes the State-business relationship and sets the agenda for private investment.

In order to answer the last research question, I explored what changes in the institutional and behavioural structures and mechanisms of the public and private sector would be needed to improve the efficiencies of PPPs. Data to answer this query was provided through understanding of the existing mechanisms and the roles and responsibilities of the State, and whether these result in reduced or limited efficiency of the PPPs. The

weaknesses of PPPs were traced to the legacy of hierarchical administrative systems, prevailing bureaucratic mindset of officials, profit-driven attitudes of private partners, collusion between politicians-bureaucrats-private developers, and weak regulatory structures and inadequate institutional capacities of public agencies to effectively govern the partnerships. The data for this was furnished by interviews and secondary sources of information.

For a critical realist, '[i]n order to be able to explain and understand social phenomena' she must critically evaluate them (Sayer, 1992: 5). Sifting through various layers of issues regarding PPPs enabled me to evaluate them based on my understanding of the several inter-linked issues. I critically analysed the strengths and weakness of the public and private partners (as agencies) and the complex *a priori* structures within which the partnerships operate. This provided me with data that informed my last query, which fulfilled the purpose of this action-oriented research. As '[s]tructures are not fixed and immutable' within a realist ontology, they can be changed by specifically directed actions of the agents (Hill, 1997: 62).

'If we know what underlies a certain course of events we can also – this is the assumption- intervene and direct future courses of events and make them correspond better with our intentions and purposes in various ways. Alternatively, if we find that we cannot influence the course of events, we can still, by predicting it better adjust more accordingly' (Danermark *et al*., 2002: 52).

8 Data collection

As mentioned in the earlier section, I used the case study method to supply me with data for my research questions. A mix of cases was selected to furnish varied dimensions of a particular issue and enrich my findings. For my study I selected PPP projects within road infrastructure sector in the western state of Gujarat in India. I decided to focus on PPPs within one state (i.e. Gujarat) in order to keep the political and geographical variables as constant while I selected diverse cases within that state. I chose Gujarat as it is the only state in India where maximum number of PPPs in road infrastructure has been initiated. The first PPP in road transport sector in the country, the Ahmedabad Baroda expressway, was developed in Gujarat. Moreover, two of my sample projects are the largest PPPs in the country.

There are broadly two kinds of highway projects in India, national level projects that connect cities in different states, and state level projects connecting cities in the same state. While the national highways projects are developed by the national government, the state highways are implemented by the state government. I purposively selected two projects each from among the national and state level PPP projects in highways being implemented in Gujarat in order to compare and contrast the issues of governance of PPPs at these levels and have a deeper understanding of structures and mechanisms causing them. For both the sample projects in national and state highways, one is operational and the other is under construction. This enabled me to understand the aspects of partnership and governance issues during the construction and operation phases. I further selected an urban transport project being implemented by a local civic body to gain richer insights into PPP in India and to understand how it is shaped while facing local urban situations and factors. Gujarat was the appropriate choice as it is the only state where the Ahmedabad Bus Rapid Transit System (ABRTS) has been able to achieve most of its envisaged outcomes. Moreover, since a part of the project is operationalised while another is still under development stage, this case offered me understanding of issues of governance during both the phases, similar to my sample cases in highways. As nature of State institutions differs from each other at these three levels my sample cases provided me with a holistic perspective of role of the State within PPPs in road infrastructure in India and nature of partnership between public and private sectors at different levels.

The focus of the research was on the processes of decision making, powers and liabilities of the existing structures (political, administrative, social, economic, organisational and behavioural) and the agents (bureaucrats, members of the private consortia and the users) that are engaged in PPPs either as providers, purchasers, regulators or users. Hence, primary data was collected through qualitative interviews from three categories of respondents comprising policy makers in the selected government departments, members of the private consortia, and randomly selected users of these services. The viewpoints of those not directly involved (such as academicians, scholars, retired bureaucrats, consultants etc.), were incorporated through informal semi and unstructured interviews to enrich the discussion and analysis. I interviewed three layers of respondents within the government and private agencies. These included the top decision makers (such as the Secretaries of the state and national governments, heads of government corporations, and project heads within the private agencies),

middle level officers of the government (such as Project Directors) who monitor and supervise the project and project managers from the private sector, and the lower level supervisory and engineering staff with the public and private agencies. While I conducted a focus group interview with some users of the Ahmedabad BRTS, I also interviewed several randomly selected users of the highway and BRTS projects.

Primary data for this research has been collected through qualitative methods. However, it is supplemented with data from secondary sources to reveal a more complete picture of reality. I used secondary data from government and parliamentary reports and records (published and unpublished), audited records, studies commissioned by the government investigating PPPs, media reports and reports of funding agencies (such as WB, IMF, ADB). Document research of government reports and documents helped me to the understand the growth of PPPs in India, as the documents are expected to inevitably be shaped by political ideological assumptions dominant at any given time (Scott, 1990). Secondary data also enabled me to get a deeper insight into the context of development of PPPs in the country under different governments. Study of secondary data from PPP projects in highway projects other than the sample cases, civil aviation and railways helped me to corroborate my findings from the sample cases.

I selected my respondents through 'snowball sampling' (Goodman, 1961). The key informants within the government and private sectors provided information on the other informants who could be helpful in my work. This helped me to save time in searching for respondents while being able to get focussed information from the ones whom I met. The purposive sampling also attempted to capture their heterogeneity and to bring representativeness of responses and data (Maxwell, 1996). According to Patton (1990: 169ff), most sampling in qualitative research falls into the category, he terms as '*purposeful sampling*', which LeCompte and Preissle (1993: 69) call *criterion-based selection*. Sayer (1992: 244, emphasis in original) notes that in an intensive study, 'the individuals need not be typical…they may be selected one by one as the research proceeds and as an understanding of the membership of a *causal* group is built up'.

I gathered data through semi-structured, unstructured and informal interactive interviews (indicative guide to the questions for the interviews, along with questionnaire for respondents in the public and private sectors for national highways and the ABRTS are placed at Appendix 3). For the highway sample projects my initial respondents were the General Manager of the regional NHAI office, and the Secretary of the Gujarat state

Roads and Buildings Department. While the Ahmedabad Municipal Commissioner and team leader of ABRTS project at CEPT were my first respondents for the Ahmedabad BRTS. They provided me with an overview of the projects selected for this research. They also guided me to other officers in the organisation and provided me details of the private partners of the sample projects. Based on the initial information provided by them, I prepared my semi-structured questionnaires for different respondents.

I interviewed the following respondents for this research:

Table 4.1: List of respondents interviewed for this research

Sample Projects	**Respondents interviewed**
Ahmedabad BRTS	The Ahmedabad Municipal Commissioner (previous and present) Dy. Commissioner, AMC looking after AMTS bus service Secretary, Urban Transport, Government of Gujarat Executive Director, GIDB, Government of Gujarat Manager (Projects), GIDB, Government of Gujarat Director, JnNURM division, Government of India Principal Advisor, Planning Commission, Government of India Executive Director, AJL Director, JnNURM, AMC DGM (Operations), AJL ITMS supervisor, AJL Team leader of ABRTS project, CEPT Team leader of ABRTS project, ITDP Urban transport expert and member of ABRTS team, CEPT Academicians at Indian Institute of Management, Ahmedabad The bus operator Two representatives from the ITMS service provider Representative from GIPL, ITMS service provider Contractor for the BRTS corridor Focused group of 14 college students Randomly selected 20 users travelling in the ABRTS buses
National highway PPP projects	Secretary, Roads and Building Department, Government of Gujarat Joint Secretary, MoRTH, Government of India Director (PPPs), MoRTH, Government of India Executive Director, NHAI, Government of India General Manager (Projects), NHAI, Government of India General Manager (Finance), NHAI, Government of India Advisor to Dy. Chairman, Planning Commission, Government of India Principal Advisor, Planning Commission, Government of India Director (PPPs), Planning Commission, Government of India General Manager, regional office, NHAI Two Project Managers, regional office, NHAI General Managers of the concessionaires of the two projects Project Management heads of the concessionaires of the two projects

	Head of ICs for the two projects Academicians at IIM, Ahmedabad Randomly selected 20 users
State highway PPP projects	Secretary, Roads and Building Department, Government of Gujarat Advisor to Dy. Chairman, Planning Commission, Government of India Principal Advisor, Planning Commission, Government of India Director (PPPs), Planning Commission, Government of India Executive Director, GIDB, Government of Gujarat Manager (Projects), GIDB, Government of Gujarat General Manager, GSRDC, Government of Gujarat Manager (Projects), GSRDC, Government of Gujarat General Managers of the concessionaires of the two projects Project Management heads of the concessionaires of the two projects Head of ICs for the two projects Head, PMC for the two projects Academicians at IIM, Ahmedabad Randomly selected 20 users

(Source: Author's construct)

I did at least two rounds of interviews (more in some cases on need basis, and in case of key informants) in case of all the respondents excepting four cases of elite respondents, such as secretaries to the governments. In these cases, only one semi-structured interview was possible due to time constraint. I designed separate questionnaires for the respondents at different levels in the private and public sectors. I started with semi-structured interviews formed after my first interviews with the initial respondents. The focus of my questions was sharpened and refined subsequent to my interviews with the other respondents from both the partners, and other respondents. As I progressed in my research and the issues started getting defined thematically, my questionnaires became more structured in terms of the information I wished to gather from the purposively selected interviewees in both the private and public sectors. This also aided the questionnaire for the interviews with the other respondents such as the randomly selected users.

In case of ABRTS, the Municipal Commissioner who was championing the project was transferred during the period of my research. Hence, I could interact with his successor and get his perspective too. I observed that some respondents within the government were reluctant to share information, while others were forthcoming and candid. Some wished not to be named and were averse to being recorded; this reticence was observed more in the elite decision makers.

Data collection for this research was done over the period from September 2010 to February 2012.

9 Analysis of data

My experience from the initial interviews taught me that a well structured thematic questionnaire formed a crucial component of the data gathering process, and marks the first step in systematic analysis. I explained the academic purpose for the interaction to the respondents and recorded the interviews on a digital recorder with their permission. Interviews were conducted in English, Hindi and Gujarati as I am proficient in these languages. These were later transcribed by me in English. I was careful to systematically store the interview data and saved multiple copies at different locations, such as hard disks and the web. I simultaneously maintained an 'interview diary' which contained my questionnaire and interviews notes which I took even when interviews were recorded. These acted as a back-up to any possible loss of digital data and were my guide to pauses and gestures by the respondents which helped me with my analysis. Sometimes these were regarding conversations the respondents had with other colleagues (in my presence) which offered me an insight into issues related to my subject. I was particular about transcribing the interviews while still in the field. This is considered to be a vital element when interviews are used as research techniques (Dexter, 1970). Together with my notes, these transcriptions significantly aided my analysis. When the respondents wished to not be recorded, immediate transcription was an urgency to prevent missing trivial yet useful data. Such timely transcription also helped me to do partial analysis which redefined my subsequent questionnaires. It exposed possible gaps in knowledge which warranted a second round of interview after I revisited them. I was also careful to do partial thematic coding while transcribing[14]; in hindsight this contributed to a more meaningful analysis at a later stage and helped me tremendously in time management. Furthermore, this enabled me to engage in what Glaser and Srauss term 'constant comparison' which lead me to focus on 'what data to collect next and where to find them' (Glaser and Srauss, 1967: 45). Thus the process of transcribing was a continuous one which progressed simultaneously with my data collection. This was fruitful as it kept me focussed and informed me in terms of choosing my respondents 'purposively'.

[14] This was the result of my interaction with friends who are PhD scholars

I analysed my data manually for which I relied upon the transcripts and my interview notes. I classified the corpus of my text into 'content categories' (Weber, 1985: 7) which was guided by the purpose of the research. These codes were not numerical, rather they were themes of arguments which would answer my research questions (such as, what are the factors shaping PPPs in India, and within this section what factors rise from the public and private agencies, and from the environment they operate in). Miles and Huberman (1984: 56) refer to them as 'retrieval and organizing devices'. I compiled these segments from various texts (Tesch, 1990: 86) and observed whether a 'thematic pattern' was emerging (Gumperz and Hymes, 1972). While in the first level of analysis I saw the 'universal instances...within the body of data' (Tesch, 1990: 81), in the second round I paid attention to the specific instances within my cases. Also, while the first round offered 'events', the second one enlightened me on the structures and mechanisms. I was constantly searching for 'connections' and 'relationships' within 'pieces' of my data (Tesch, 1990).

10 Validity of the research

Validity issues have been observed to be cause of concern in qualitative research as authenticity of conclusions and predictions of the study get affected (Maxwell, 1992). These are largely because of lack of use of 'standard' quantitative experimental tools accepted under positivist presumptions (Salner, 1989). Some scholars (e.g. Guba and Lincoln, 1989) have rejected application of statistical paradigms to intensive research, while others (e. g. Kirk and Miller, 1986) assert that procedures for ensuring validity in qualitative approach are different than those in quantitative approach. Brinberg and McGrath (1985) argue that validity needs to be judged on purpose of the research. The 'realist' approach supports the view that validity must not be adjudged by the procedures but by the relationship of the study with the phenomena that it intends to give an account of which is outside this study, and the understanding such a study generates (Hammersley, 1992; Maxwell, 1990; Norris, 1983). Since there is no objective knowledge of the world we study, an independent entity with which to compare ones accounts does not exist. Furthermore, there will always be a possibility of equally valid accounts of such phenomena from different perspectives (Maxwell, 1992).

Moreover, researcher bias has been highlighted by Maxwell (1996) while discussing validity threats in intensive studies. This rises from the researcher's own theories and notions which may potentially compromise selection of data and its interpretation.

Researcher bias was a reality in a limited way in my study as being a civil servant I was interested in understanding the governance issues of PPPs in order to enhance their efficacy and efficiency; thus I did bring a viewpoint to the research. Moreover, my epistemic position entailed subjective interface and interaction with the social world. Whereas value neutrality is a component of empiricist epistemology, as I am employing the reasoning of a critical realist, my study attempted to 'incorporate the analysis of values' into the research strategies (Olsen, 2004: 146). There is congruence of thought among several thinkers (Laughlin, 1995; Hesse, 1980; Popper, 1972; Mannheim, 1936) that all observation is contextual and selective as it is from a particular standpoint as without somewhere to stand on, no knowledge is possible. Supporting a critical realist approach, Gunnar Myrdal (1944: 1057) argues that scientific facts did not exist *per se*, but were constructed and 'abstracted out of a complex and interwoven reality'. The bias of a researcher is obviated by the fact that the viewpoint is not the sole property of individual cognition. Unbiased thinking, Streeten (1950: 595) writes, should bring value judgments into the open rather than avoiding them. Arguments become biased and inconclusive when the value premises and assumptions on which they are based are not explicitly stated and 'are disguised as factual propositions'. Scholars like Olsen (1994) and Harding (1991) thus recommend being open about value preferences of the researcher and researched.

Awareness of possible existence of this bias helped me to be more attentive to reduce its ill-effects by being focussed on exploring and examining the multiple issues connected with PPPs from different perspectives, thus gathering a sufficiently complete view of the complex multi-dimensional reality of these projects. The fact that I have not been professionally associated with any of the sample projects and was not known to the respondents prior to this research, helped to substantially reduce any possible researcher bias. On the contrary, openness about my professional status helped me with the official respondents as it vouched for the seriousness of the research. Moreover, many officers could informally share internal happenings within the departments and ministries due to the perceived assurance that the information would be analysed in the right perspective by a fellow civil servant; misuse of official information has been observed to result in reticence within government officials on many occasions. Considering the shroud of secrecy that prevails in most of the government departments, quality data for such a research has been largely possible due to my being a part of the official set-up. Additionally, respondents from the private sector were candid about their observations

and experiences of PPPs presumably because of their perception that policy recommendations through this study may be able to mitigate some structural weaknesses surrounding PPPs in the country.

Following Yin (1989) and Olsen (2002), multiple sources of information are useful for enriched analysis and triangulation. In my research, I triangulated data from heterogeneous respondents from various levels within the public and private sectors, non-State agencies and the users. In addition to enabling me to explore issues from varying perspectives, this provided me an opportunity to corroborate my findings from multiple sources. Where I suspected the respondent to be secretive or non-cooperative, I collected the needed information through other sources. Moreover, I used statistical data to strengthen qualitative findings and qualitative data to explain statistical figures, which has taken care of the threat whether what the researcher saw and heard has not been made up (in the present day, validity issues of 'data' have largely reduced as most interviews are recorded). When used together, qualitative and quantitative data are observed to furnish different types of information and aid in assessing the robustness of findings (Jick, 1979). As Hammersley and Atkinson (1983: 191) state, 'data in themselves cannot be valid or invalid; what is at issue are the inferences drawn from them', and what is that we wish to learn from the data (Hirschi and Selvin, 1967). Thus description, interpretation and explanation of the data occupy importance in critical intensive research (Kaplan, 1964). I therefore employed a narrative style of writing and used 'thick descriptive' (Geertz, 1975) data to convey my analysis and findings which are accepted as a valid tool against potential validity threats (Creswell, 2003).

11 Ethical dimensions

Ethical considerations in a qualitative research are valid concerns and generally stem from the power position of the researcher as perceived by the informant; who has control of setting of the interaction and the research context; and uni- directionality of the research flowing from the researcher (Cassell, 1980). In my research, ethical issues were minimal as my informants were not vulnerable or disadvantaged and did not perceive me in a position of power above them. The respondents were voluntary participants and there was no element of coercion in the fieldwork. In fact, the power relation was reversed at times i.e. power flowing from the political and bureaucratic 'elites' (Dexter, 1970). In order to avoid the consequences of such a power-relation, I carried a carefully structured questionnaire which would elicit the needed information in

the limited time available. Focussed questions also helped to depict genuineness of the purpose of interaction to the interviewees. Since many 'elite interviewees' were wary to be recorded, I took notes of the interview in my interview diary, being attentive to not miss the respondent's thrust on particular issues.

Furthermore, I was conscious of the male-dominated character of the construction industry in India where few women are actively engaged. I therefore took care to meet respondents in public places such as offices or open spaces, during working hours, which did not compromise my safety. Moreover, despite being a fairly senior civil servant from India, while seeking information from respondents who were not elite interviewees, I desisted from engaging in the '*verandah* model' of fieldwork (Wax and Cassell, 1979). I took care of the Kantian imperative of treating the interviewees as ends in themselves and not means to an end, thus respecting their individual autonomy (Kant, 1959). My aim was to seek the viewpoint of the respondents. Hence I gave them ample time to articulate their responses with minimum intervention on my part. Following the more circumscribed role of an investigator (Bosk, 1985), I merely asked the questions and was cautious to not dominate the interview process. Moreover, I digitally recorded the interviews after taking their consent and explaining the academic purpose of this research to them. Even in informal discussions the purpose of the interaction was well placed before the respondent. I have been careful not to name any of the respondents in the report, thereby protecting their confidentiality (Dexter, 1970).

12 Limitations of the study

While PPPs in India are the preferred mode of service delivery for highways, and are increasing being adopted for urban transportation, they are relatively recent as compared to PPPs in the OECD and industrialised countries. Moreover, none of the PPPs in India has completed its concession period. A comprehensive study of any PPP project through its life cycle was therefore not possible, which may be viewed as a limitation. In addition, two PPP projects each in national and state highways and one project in urban transportation were studied at one state viz. Gujarat. The selection of projects from a single state was dictated primarily by constraints of time and financial resources. The limitations of such selection were sought to be minimised through selection of a state where substantial work is being done in PPPs in highways compared to the other states. In addition, representative projects were selected at three different administrative levels, at the levels of national and state governments and a local civic body. While one project

each for national and state highways is in construction phase, the other two projects were selected which are operational. Whereas, part of the urban transportation project in city of Ahmedabad is operational, the second phase is being constructed. In addition, this purposive selection of the sample projects allowed me to study the governance perspectives of PPPs from three perspectives providing rich data to inform public policy regarding PPPs at three levels, regarding the construction and operational issues of PPPs.

13 Conclusion

This chapter discussed the design strategy and methodological aspects of this research. The relevance of the adopted strategy to the research topic and justification of chosen modes of inferences and data collection were discussed. The basis of selection of sample projects, and the manner in which the research was operationalised were also described. The following chapter provides a contextual perspective of PPPs in highways in India and the western state of Gujarat, and locates PPPs in roads infrastructure within the broader framework of socio-economic development and urban renewal schemes of the national and state governments.

CHAPTER 5

CONTEXTUAL PERSPECTIVES: INDIA AND GUJARAT

1 Introduction

This chapter locates PPPs in road transport infrastructure within the broader socio-economic context in India and the western state of Gujarat. It briefly discusses the extent and growth of PPPs in infrastructure in the country, and examines the causal factors underpinning growth of PPPs in highways sector in the country. The macro policy environment and the initiatives of the national and state governments contributing to growing reliance on PPPs as alternative modes of service delivery are analysed. The chapter also provides a brief overview of the western state of Gujarat, and analyses the reasons for higher prevalence of PPPs in highways and urban transportation in the state.

2 Transport infrastructure: A key driver of economy and growth

Infrastructure has been widely acknowledged as a crucial enabler for long-term sustained economic growth of a country. Various studies in the recent past on infrastructure and public investment have concluded that the impact of infrastructure on growth is not only substantial and significant, but frequently greater than other forms of investment (Shah, 1992; Aschuaer, 1989; Costa *et al*., 1987). According to World Development Report (WDR) of the World Bank (1994), increase of 1% investment in infrastructure stock increases GDP by 1%. Within infrastructure, the role of an efficient transport system has been assessed to be essential for economic development (Fujii, 1999). The importance of transport infrastructure for a country's economic growth has been fairly well documented. Roads have contributed to economic growth by facilitating trade and enhancing industrial and agricultural productivity (Bhandari, 2002). Recent studies in context of low-income countries have underscored the role transport essays in the country's development trajectory. The need for their development is thus found to be urgent and enormous in developing economies. The WDR notes the positive impact rural roads have had on agricultural output and income in Bangladesh and India (World Bank, 1994). Study by Fay and Yepes (2003) has predicted exponential growth of

producer and consumer demand for infrastructure in emerging markets between 2005 and 2010, with almost 90% of investment in telecommunications, power and road. Infrastructure, particularly roads and telecommunications, has been assessed as a crucial factor in reducing rural poverty in China between 1978 and 1997 (Fan *et al*., 2002). Similar conclusion is drawn in case of developing countries by Guasch and Kogan (2001). Datt and Ravallion (1998) found that Indian states with a better infrastructure base demonstrated significantly higher long-term rates of poverty reduction, between 1960 and 1990. New roadways in remote areas open them to more and better employment opportunities and enhance their tourism potential. Roads significantly influence the expansion and reorganisation of land in and around cities (Raza and Agarwal, 1996). Whereas study of Indian towns by Raj (1993) shows that fast growing towns with higher index values of various physical infrastructure facilities (roads included) are relatively better equipped to attract industrial and commercial activities. He argues that a large part of urban India's growth potential has been lost due to infrastructural bottlenecks. Poor quality of transport infrastructure was found responsible for India's low FDI attraction by Singh and Wallack (2009).

3 Extent and growth of PPPs in infrastructure sector in India

India is one of the largest emerging economies. Growth in its GDP was 8.4% during 2010-2011 (PIB, 2011). The government has acknowledged that enhanced investment in infrastructure has spurred growth in GDP to 8% in 2009-2010 (Indian Express, 2011a). While there are many definitions for 'infrastructure', the government recognises the following services within infrastructure: railways, roadways, airways, ports, power, telecom, and information technology (Planning Commission, 2010a). Substantial investments are envisaged in the infrastructure sector in the coming years. The planned investment over 12th Five Year Plan (FYP) for the period 2012-2017 is about INR 40,152 bn (about US $1 tn). This is considered crucial for achieving growth rate of 8% in the 12 FYP. This is about 10.8% of the country's GDP and about twice the planned investment during the 11th Five Year Plan (2007-2012) which was INR 19,480 bn at constant prices (2006-07). Of this, 50% is expected to come from the private sector (Economic Times, 2011a). Private sector financing was about 30-35% in 11th FYP (2007-2012), while it was 25% during the 10th Plan. For the 2011-2012 annual plan, INR 2140 bn was allocated to infrastructure. This constitutes 48.5% of total plan allocation and is an increase of 23.3% over the previous year. According to World Bank

(2010), 'India has now become the largest market for private participation in infrastructure in the developing world'. India attracted US$ 71.9 bn in infrastructure in 2010 which is an 85% increase from 2009. This is the highest investment in any developing country in 2009-2010. India accounted for 43% of total investment in PPPs in any developing country. Furthermore, according to a recent study by the Cambridge University and Royal Bank of Scotland (RBS, 2011), emerging countries will spend about US $20 tn in the next 20 years on infrastructure, registering growth of 158%. Asia will account for bulk of this demand with about US$15.8 tn in investment; India is listed as one of the countries that is expected to benefit substantially from this growth. Sector-wise, roads will see the second maximum investment (US$ 4.2 tn) after power (US$ 12.7 tn).

The following table gives a snapshot of the investments by the centre, states and the private sector during the 10th, 11th and 12th Five Year Plans.

Table 5.1: Investment by centre, states and private sector in infrastructure

Investment from	**10th FYP (2002-2007)**	**11th FYP (2007-2012)**	**12th FYP (2012-2017)**
Central government	3,674.19 (40)	6,558.33 (34)	10,841.11 (27)
State governments	3,254.39 (35)	5,590.81 (29)	9,235.02 (23)
Private sector	2,280.38 (25)	7,331.56 (expected-37)	20,076.13 (expected-50)
Total	9,208.96	19,480.69	40,152.25

(Source: Planning Commission, 2011)[15]
(INR bn at 2006-07 prices; per cent share in brackets)

Market-based initiatives in India started with efforts towards economic liberalisation in 1991, pressed by donor organisations like IMF and World Bank and the need for high growth rate (Peters, 2001). World Bank through its private sector lending arm, the International Finance Corporation (IFC), encouraged private participation in emerging economies. As part of its Multilateral Investment Guarantee Agency (MIGA) it offered political risk insurance which provided implicit guarantee to the investors (Ramamurti, 2003). It is believed by some observers that the economic reforms in India predate 1991. They began in 1980 with an attitudinal shift in the central government towards the

[15] Note distributed by Planning Commission at national conference on PPPs in National Highways at New Delhi, 12 September 2011.

private sector (Kohli, 2006; Rodrik and Subramanian, 2004; De Long, 2003). Sen (2007) however argues that the shift towards the market began in 1970s itself with increase in private equipment investment and financial deepening, and it has more to do with substantial economic policies than attitudinal shifts within the government. Basu (2008) contradicts this by observing that although there was enhanced growth in the 1908s, such changes proved to be unsustainable. Pederson (2000) argues that India's liberalisation can be explained through three theories, which are mutually interrelated and explain the different stages of the Indian reform process: some crucial changes in the Indian society, pressure from international lending agencies like IMF and WB regarding structural changes in the economy, and changes in the powerful Indian bureaucracy or 'state elite' (p.275). In the 1990s, after the initial round of roll-back and downsizing the State, and reducing the protectionist and regulatory policies, the second round saw a more direct involvement of the market by way of providing more efficient public services (Peters, 2001). Emphasis was placed on reduced role of government with enhanced dependence on the market (Tandon *et al*., 2001). Through what was popularly termed as 'delicensing', the product-market economy was opened up first, followed by the financial sector comprising banks, insurance companies, etc. Then came the public utilities; the power sector first engaged with the private sector in 1991. It later expanded to telecom, roads, ports, railways and airports (Sarangi, 2002). The 95 km long Ahmedabad-Baroda expressway in the state of Gujarat was the first expressway in the country to be taken up for development under the PPP model. This was made operational in 2001, whereas the 85 km long Mumbai-Pune expressway in the state of Maharashtra was opened to the people in May 2000. The first PPP in highways was the 90 km Jaipur-Kishangarh project in Rajasthan which was executed at a cost of INR 6.15 bn. The six-laning of a two-lane road was initiated in 1997. Construction started in 2002 and was completed in October 2005.

In addition to the core infrastructure, there have been efforts towards involving the private sector in social infrastructure such as health, education, and urban services like sewerage, waste disposal and slum rehabilitation, and some areas in agriculture like rainwater harvesting. Recently a fund of INR 50 bn has been set up by the national government for supporting Research and Development (R&D) in PPPs in the field of vaccines, drugs and pharmaceuticals, supercomputing, solar energy and electronic hardware.

According to division of powers under the Constitution of India, roads sector falls under the Concurrent list i.e. both the central and state governments can legislate in this domain[16]. While planning and development of national highways fall under jurisdiction of central government, state governments are responsible for state highways, major district roads, village roads and other roads. States are also responsible for development of urban transportation. Vinayak Chatterjee (Business Standard, 2009) sees a continuum in the philosophy of the government opening itself to market-led forces, with the momentum for PPP starting at the centre and trickling down to the states. Urban local bodies are also adopting the PPP mode for development of urban infrastructure such as urban transportation, slum rehabilitation, waste management etc. (Bagchi, 2001).

The stated objectives of the government for opting for private participation in infrastructure are three-fold: 'significant' infrastructure deficit requiring 'large' investments which cannot be met with budgetary resources in face of competing demands from the other sectors; transport infrastructure like roads, airports and ports are amenable to commercialisation and thus private sector interest; and private sector efficiency in construction and delivery of services (Government of India, 2005). The national government is increasingly depending on private sector participation to supplement government efforts which will be focused on providing infrastructure to remote areas and rural roads (Planning Commission, 2010a). The Economic Survey of India for 2009-2010 (Economic Survey, 2009: 233), which gives an overall view of the economy, accords primacy to the infrastructure sector to 'complement and sustain' the growth of other sectors. It acknowledges not only the fiscal importance of PPPs, but considers them more as tools for accomplishing social goals of the government. PPPs are perceived as modes to access private sector expertise and cost-reducing technologies to enhance efficiency in operation and maintenance of projects. According to definition of PPP by the central government, the projects are adopted 'for the provision of public assets and/ or related services for public benefit' (Government of India, 2010b: 6).

Even though the experience with PPPs in the country is relatively recent, the commitment towards encouraging private participation is observed both at the centre and within the states, although not all states have been able to structure their projects such as to attract active private participation due to several reasons. More than a decade long experience in PPPs in infrastructure has enabled the central government to create

[16] Under List III of the Seventh Schedule of the Constitution of India. http://channarayapatna. kar.nic.in/ htmls/rev/klr/ConstitutionofIndia7thSchedule.pdf [Accessed 15 December 2011].

an enabling framework for PPPs which has also helped the state governments. In order to study imperatives of the infrastructure sector, the central government constituted the Expert Group on Commercialisation of Infrastructure Projects, also known as the Rakesh Mohan Committee, in 1996. The report observed that the inadequate road network resulted in higher transportation costs and had an adverse impact on international competitiveness of the Indian economy. Furthermore, it pointed out that most urban infrastructure services were not commercially viable as these were provided within a non-market framework which ignored the cost and revenue aspects of service delivery. The committee recommended formulation of a framework for involving the private sector in provisioning of these services. It highlighted the important role of the government in formulating a framework for PPPs and in structuring the contracts, defining the scope and duties of the regulatory agencies, and protecting users' interests (Planning Commission, 1996). Additionally, the Cabinet Committee on Infrastructure (CCI) was formed in 2009. It frames and reviews policies and approves projects across various sectors, and takes decisions on financial, institutional and legal measures required to enhance investment in infrastructure. The Public Private Partnership Appraisal Committee (PPPAC) on the other hand is formed to streamline and simplify procedure for reviewing and approving central PPP projects of INR 1 bn and more. Additionally, Model Concession Agreements (MCA) for BOT-toll projects have been drafted for national and state highways along with urban metro-rail, green-field projects, ports and airports. Aimed to provide a level playing field to the private partners, it allocates risks and responsibilities to the partners and prescribes timelines for various stages of project life-cycle. The Planning Commission is currently drafting a MCA for BOT-annuity projects. Model documents have also been framed for selection of advisors and consultants. Together these help to ensure competitive bidding in a transparent manner, reduction of ambiguity in allocation of risk and possibility of disputes, and clarity in obligations of both partners. Moreover, manuals have been drafted specifying standards and specifications for construction, operation and maintenance of various services. This knowledge-base is shared with the states that have not framed such documents. This has helped to provide uniformity across central and state projects.

For the projects that are not financially viable for the private sector, the central government provides Viability Gap Funding (VGF) up to 40% of the project cost. In addition, the government has also set up the IIFC (India Infrastructure Finance

Company), a dedicated lending window for infrastructure sector that provides debt up to 20% of project cost either by refinancing of banks or by direct lending. The initial corpus was built on strength of government guarantee of INR 100 bn. Additionally, the private investors are provided tax holiday on 10-years of project income out of 20 years of construction period, automatic approval for 100% equity investments, permission for 100% FDI (Foreign Direct Investment), and relaxation of customs rules to import high end construction machinery and equipment. The Department of Economic Affairs (DEA) within the Union Ministry of Finance in collaboration with ADB has set up PPP Pilot Projects Initiatives. Under this, the central government demonstrates to the states ways to structure PPP projects in challenging sectors in terms of better identification of projects, contract management process, project evaluation, capacity building and effective overseeing and monitoring.

Additionally, the Secretariat for Infrastructure has been established at the Planning Commission[17], which is the policymaking body at the central level headed by the Prime Minister as its Chairman. This Secretariat provides the knowledge and research base for informing policies for development of infrastructure. A high powered national committee has also been formed to deliberate on various issues of financing of infrastructure and removal of regulatory impediments in investments.

4 Area of study: Road transport infrastructure sector

Within the infrastructure sector, there is a demonstrated higher reliance on private sector participation to supplement government efforts in highways and ports. Road sector accounts for 60% of total PPP projects (645) by number and 45% by value, due to small average size of the projects. About 93% projects have been developed under BOT mode in the last five years, and about 170 of 190 projects have achieved financial closure. Ports account for a meagre 10% in terms of number of projects, although they have a larger contribution in terms of value and contribute 30% of the total. The dominance of these two sectors in the PPP pie is evident from the fact that if they are excluded from the total value of 645 PPP projects (2011-2012 figures) amounting to INR 2241.75 bn, the total value is significantly lowered to INR 557.57 bn.

[17] The Planning Commission was formed as an apex advisory body in 1950. It formulates the Five Year Plans for an effective and balanced utilisation of resources; it also determines priorities of allocation of resources and provides budgetary support to various sectors at national and state levels. In addition to making recommendations to the central cabinet, it works in close coordination and consultation with various ministries for issues regarding Plan formulation, implementation and evaluation.

4.1 Potential in the road infrastructure sector

With 3.3 mn km, India has the second largest road network in the world, after USA. It comprises 200 km of expressways, 70,934 km of national highways (NHs)[18], 131,899 km of state highways, 467,763 km of major district roads, and rural and other roads admeasuring 2,650,000 km. About 65% of freight and 80% passenger traffic is carried by roads. The annual growth in traffic has been 10.16% over the past five years. Moreover, national highways constitute about 2% of the road network but carry 40% of the road traffic. Moreover, although national and state highways form less than 10% of total road network, they handle over 75% of total road traffic (NHAI, 2011). The highways are therefore termed as 'growth corridors'.

Road density in India, in terms of population (2.75 km/1000 people) and land area (770 km/1000 sq. km) is low when compared to world average of 6.7 km/1000 people and 841 km/1000 sq. km respectively. Since independence in 1947, while number of motorised vehicles (excluding two-wheelers) has increased more than 40-fold, from about 300,000 mn to 13 mn, national highways have just about tripled. Moreover, about 25% of the NH network is still single-laned, while 53 % is double-laned and only 23% is four/six/eight-laned (Economic Survey, 2011a). The quality of roads has been a cause of concern as about 90% of highways are structurally deficient to support the 10.2 tonne load per axle that trucks are allowed to carry. Also, trucks cover less than 200 km/day, which is 25% of the global average (PIB, 2010). Demand of freight and passenger transport is being met jointly by roads and railways. Road transport, between the two, has steadily expanded its scope and is competing with railways as a mode for long distance freight hauling in addition to providing last mile connectivity for freight carried by railways. Its inter-modal share in freight transport has jumped from 14% (1950-51) to 61% (2004-05). Share of road transport in passenger traffic has witnessed a quantum jump from 15% (1950-51) to 87% (2006). Passenger traffic is estimated to grow at 12-15% while annual growth in cargo traffic is projected at 15-18%. Spurt in economy has lead to higher growth in manufacturing sector which has increased demand for transport infrastructure. Road development has however been found to be lagging behind growth in vehicular traffic resulting in capacity saturation in some of the main arteries (Planning Commission, 2008a). Also, this is not keeping pace with the 37% growth in automobile industry (Business Standard, 2010a).

[18] About 15,000 km of NHs are built and maintained by the NHAI and rest are built and maintained by the state governments.

Table 5.2: Achievements on National Highways between 1949 and 2002

Period	Total Length # (km)	Widening to Two Lanes (km)	Widening to Four Lanes (km)	Strengthening of Pavement (km)
1947–1969	24000	14000	Nil	Nil
1969–1990	33612	16000	267	9000
1990–2002	58112	3457	1276	7000
Tenth Plan (2002–2007)	66590	4177	6769	8377
Total	–	37634	8312	24377

(Source: Planning Commission, 2008a: 290)
Note: # Length at the end of the period.

Thus, in view of the critical importance of the road network for the sustained growth of national economy, there exists substantial potential for development in this sector. Government of India launched the National Highway Development Programme (NHDP) in 1998-1999 for developing a network of world-class highways at an investment of INR 2357 bn for the period 2010-2015 (Planning Commission, 2010a). This is the largest national programme for development of NHs in the country and one of the largest in the world. Total of 52,200 km[19] of road network will be upgraded and built as part of NHDP through Engineer-Procure Construct (EPC) and PPP modes. It includes the six-laned 5846 km long Golden Quadrilateral (GQ) connecting the metro cities of Delhi, Kolkata, Mumbai and Chennai located in four corners of the country, and the North-South and East-West (NS-EW) corridors spanning across 7300 km long connecting Srinagar in north to Kanyakumari in south, and Silchar in east to Porbandar in west (Appendix 4). Till August 2011, 15,000 km was upgraded to 2/4/6/8 lane and work for 10,000 km was under progress (see Appendix 5 for summary of PPP projects in NHs). The NHDP is being executed by National Highways Authority of India (NHAI). Some highways which are not part of NHDP are being developed by the central Ministry of Road Transport and Highways (MoRTH) which provides policy inputs, sets standards and specifications, and extends financial and technical support for development of roads. In addition, the Ministry provides budgetary support and technical assistance under the Central Road Fund to state highways. In order to meet the

[19] This includes 6-laning of 6500 km, 4-laning of 24,700 km and upgrading of 20,000 km of NHs besides development of 1000 km of expressways.

growing demand of national highways, it has set an ambitious target of building 20 km per day, which translates to 35,000 km at the rate of 7,300 km per year during 2009-2014 (Economic Survey, 2010).

The central government set up NHAI as a statutory autonomous body under the National Highways Authority (NHA) Act, 1988 to exclusively look after construction, maintenance and management of national highways. Its initial mandate was limited to the few roads constructed with financial assistance from ADB and JBIC (Japan Bank for International Cooperation). This expanded with launching of NHDP and amendment to the NHA Act in 1995 which allowed private participation in construction of roads. Preconstruction activities in terms of selection of agencies for project preparation, construction of roads, monitoring and consultation, along with monitoring of construction and operational activities are the responsibility of NHAI. The sources of funds with NHAI are budgetary allocations; levy of cess on fuel (at INR 2 per litre) that contributes about INR 50-60 bn per annum towards NHDP; toll collections; lease of roadside land; charges for advertisements and hoardings; lending by international institutions such as WB, ADB, JBIC; private financing under PPP; and market borrowings. Of the total NH network of 71,000 km, 55,000 km is under NHDP. Of this only 25,000 km have been upgraded, as in 2011.

Investments being projected in the road sector over the next decade indicate a 40% rise. Of the total investments, 60% is expected to come from the private sector (The Financial Express, 2011a). This is estimated to account for 28% of total investment in infrastructure planned by emerging economies, and is next only to China (PIB, 2010). Compared to the 11th FYP, targeted investments have been doubled to about INR 3140 bn in the 12th FYP. For the 12th FYP the government places ‘maximum emphasis on viable BOT projects to reduce the demand for Government resources’ for development of highway projects (Planning Commission, 2011).

Table 5.3: Revised projections of investment in roads and bridges during the Eleventh Five Year Plan

(INR in bn at 2006-07 prices)

Sector	**10th FYP (Actual)**	**11th FYP (Revised Projections)**
Roads and bridges	1,271.07	2,786.58
Centre	504.68 (39.71)	909.16 (32.63)

State	674.16 (53.04)	1,418.55 (50.91)
Private	92.23 (7.26)	458.87 (16.47)

(Source: Planning Commission, 2010b: 301, figures in brackets indicate sectoral shares compared to total investment in infrastructure)

There has however been a slump in addition in capacity in roads sector last year as fallout of the global economic crisis and various policy related factors. While the sector grew by 21.4% during 2009-2010, it regressed by 32.2% during April-November 2010 (Economic Survey, 2011a). However, during the first four months of 2011-2012, INR 210 bn has been invested in national highways. These projects are reported to have generated additional revenue of INR 100 bn.[20]

5 State of Gujarat

Gujarat is in west of the country and spread over 196024 sq km (6% of the total area) with population of 50.67 m (5% of the total). Of this, 18.93 m (37.36%) reside in cities, compared to national figure of 28%. Gujarat has been termed as 'FDI magnet' along with Maharashtra and Tamil Nadu (Saez, 1994: 334). It is among the three most urbanised states in the country and is urbanising at a rapid pace (the urban growth was 20% in the last two decades) as a result of increasing industrialisation and expansion of the service sector. It has 26 districts, 18,618 villages and 242 towns. Almost 60% of the state's urban population lives in six large urban centres i.e. Ahmedabad, Vadodara, Surat, Rajkot, Jamnagar, Junagarh and Bhavnagar. Ahmedabad, its commercial capital, has population of 5.816 mn which is 11.48% of the state population (Census of India, 2011). This is expected to grow to 11 mn by 2035 (ABRTS, 2006).

One of the leading industrial states in the country, Gujarat registered a Gross State Domestic Product (GSDP) growth of 16.8%, while the per capita income increased by 16% in 2009-2010 (Financial Express, 2011b). The national GDP stood at 8% for the same period (India Budget, 2010). Gujarat is the world's largest producer of processed diamonds, cumin and castor; third largest producer of denim; and third largest crude oil refining hub. It is the country's leading producer of pharmaceuticals, petrochemicals, chemicals, soda ash, salt and plastics. The per capita consumption of electricity (1446 KWH in 2008-2009) is almost twice the national average (GIDB, 2010).

[20] Speech by the Minister of State, MoRTH at national conference on PPPs in national highways, New Delhi, 12 September, 2011.

Forbes magazine (Forbes, 2010) has listed Ahmedabad, with its per-capita income twice that of the country, along with Bangalore and Chennai among the fastest growing cities of the world. It has termed Gujarat as the 'most market-oriented and business-friendly' among Indian states. Also, according to a NSSO (National Sample Survey Organisation) survey, Gujarat has the highest rate of urbanisation in the country. About 6.5% of all urban households are of migrants from within the state, which is highest in the country. Also, 90.6% of state's rural migrants refuse to migrate outside the state as they find it a better place to live in (Economic Times, 2010b).

Gujarat is leading in terms of private investment in infrastructure, followed by Maharashtra. According to government data, as in September 2011, 50 projects worth INR 808.08 bn were completed with private participation; the largest are in oil and gas and ports sectors, followed by power. Another 29 with an aggregate investment of INR 410.56 bn are under implementation. The Ahmedabad-Gandhinagar Metro project with an estimated expenditure of INR 100 bn is currently under development.

6 Political economy of Gujarat

Some analysts are of the view that the trajectory of economic growth and development of Gujarat is due to the market and investor-friendly pro-active policies of its present political leadership. The recent development of Gujarat has been attributed by many to the governance models adopted by the Chief Minister who has been at the helm of affairs since 2001 (The Economist, 2012; Reuters, 2012). Time magazine (Time, 2012) mentions that it is because of the unstinted present political leadership that Gujarat's auto industry has grown from one automotive plant to an expected capacity of 700,000 cars in 2014; billion-dollar investments have been announced in 2011 by Ford and Peugeot. The Chief Minister in the article explains that '[I]t is not luck...It's a carefully devised process'. Although some scholars (e.g. Sud, 2008: 14) while studying the case of TATA motors shifting its Nano car facility to Gujarat from West Bengal are concerned about the lack of a clear 'debate, contestation and eventual consensus building that one would have expected in a politically accountable "good" government?' Murali (2001) investigates State activism in the competition for private investment and attempts to understand why some states have performed better than others since 1991. He notes that 'Gujarat has, arguably, been the most pro-active state in India in the competition for investment' which is mainly due to its 'investor-friendly agenda' (Murali, 2001:7).

Gujarat, as many scholars note, has had a history of development and economic growth which precedes 2001. According to Sinha (2005), Gujarat has been a classic case of developmental state since its formation in 1960. 'It has long prioritized growth more than other objectives and

the state has played an active role in the industrial realm' (Murali, 2001: 24). The investment and ownership pattern of Gujarat was different that the other states even in1963; Gujarat outpaced the other states in term of total and private sector investment (Singh, 2003). According to Singh (2003: 469) 'consistent monitoring, circumvention, and mitigation of the central bureaucracy allowed Gujarat to ensure a high flow of investments to its region'. In the post reform period, between 1991 and 2010, Gujarat received 11.8% of investment in the country by total value. It recorded the highest rate of growth of per capita income among the 16 major states (Bobbio, 2012). Dholakia (2000) notes that the development strategy in the state of according a high priority to industrialisation has been unambiguous since its inception in 1960. In the post reform period, liberalisation initiatives in Gujarat focussed on providing infrastructural support to the productive units in the state. Studying the dynamics of the Gujarat's growth, Hirway (2000) finds that it was the leading state in the manufacturing sector, whose growth rate was consistently increasing from 3.04% in 1960s, to 5.55% in 1970s, 8.73% in 1980s and 11.92% in 1990s. This has been credited to business-friendly policies, institutional structures set by the various governments which attracted private investment and facilitated administrative procedures, and the 'generally highly positive and supportive attitude of the government to the new industries' (Hirway, 2000: 3109). Cali and Sen (2011: 1553) study State-business relations (SBRs) while comparing the economic growth of various states in India and conclude that 'effective SBRs contribute significantly to economic growth across states in India'.

7 PPPs in road transport infrastructure in Gujarat

Gujarat is reportedly one of the leading states in PPPs in road transport infrastructure. It has an extensive road network of 74,038 km which includes 3,229 km of national highways, state highways of 18,556 km, and 31,641 km of rural roads (RNBD, 2011).

Table 5.4: Details of road network in Gujarat

Type of road	Length, in km
National highways	3229
State highways	18556
Major district roads	20641
Other district roads	10493
Village roads	21119
Total length	74038

(Source: RNBD, 2011)

With 96% of all its roads being all-weather surfaced roads, it has the largest network of such roads compared to 57% of the country; about 98% of rural areas are connected with motorable road (GIDB, 2010). National highway projects with investment of INR

41 bn are currently under development in Gujarat, while projects worth INR 162.19 bn (covering 543 km of NHs) are being processed. In state highways, 18 PPP projects with investment of INR 21.80 bn have been completed and projects costing INR 59 bn are in bidding or construction stage. The state government plans to build 782 km of major state highways with private sector participation. Moreover, it is the first state where six-laning of a major stretch of national highway (Surat-Baroda on NH-8) will be completed.

The investment in ports, power and roads was US $2.14m, US $2.85m and US $250m respectively, as in 2010. Majority of this is through private participation (GIDB, 2011a). It is the first state to have PPP in ports. It has initiated PPPs in other sectors such as urban transport, water distribution, water treatment and sewerage systems, education and health (GIDB, 2011b).

Gujarat was the first state to create a statutory legal and regulatory framework for involvement of private agencies in infrastructure development through enactment of the Gujarat Infrastructure Development Act, 1999 by the Parliament. The Act provides for a consistent, transparent and competitive arrangement for streamlined selection of private partners based on competitive public bidding. Consequently, the Gujarat Infrastructure Development Board (GIDB) was formed in 1995 which became the first such statutory organisation in the country with a mandate to promote private sector participation in various sectors. It acts as a gateway between government departments and the private sector, and guides the departments in policy matters and in structuring and administering PPPs. It also provides financial support to the private partners up to 20% of the project cost, which is in addition to the VGF provided by the central government.

In addition to this, the Gujarat State Road Development Corporation (GSRDC) was created in 1999 as a wholly owned company of the government. It is an autonomous body and similar to NHAI at the central level. Its mandate is to focus on and execute PPP projects in state highways. The state Roads and Buildings Department identifies state highways which can be developed through the PPP mode and GSRDC subsequently takes up the process of executing them. It is responsible for activities of structuring and administering the PPP such as preparing the bid documents, selecting the private partners through a tendering process, and supervising and monitoring the projects.

In order to provide focused attention to infrastructure development, 'Gujarat Infrastructure Agenda' and 'Blueprint for Infrastructure in Gujarat 2020' (BIG 2020) were drafted in early 2010. To fulfil the agenda outlined in these, total investment in transport is estimated to be INR 2736.34 bn during 2010-2020, of which road sector will get INR 720 bn. Of this, 53% is expected to be funded by the private sector (GIDB, 2010).

8 Initiatives in urban infrastructure in Gujarat

With the 74th amendment to the Constitution of India (1992), state governments are required to devolve responsibilities on the civic bodies for developmental works in order to develop them as 'active units of self-governance'. A wide variation is observed across states regarding assignment of tasks to the municipalities; differences are also observed within the state based on the classification of civic bodies. In some states only few activities have been entrusted to the civic bodies. While in states such as Tamil Nadu, Maharashtra and Gujarat the city municipal corporations are responsible for providing bus services, water and electricity supply, and running municipal schools (Garg, 2007). In Ahmedabad the urban infrastructure services are provided by two civic bodies i.e. the Ahmedabad Urban Development Authority (AUDA), established in 1978, and Ahmedabad Municipal Corporation (AMC), formed in 1950 under the Bombay Provincial Corporation Act (1949). The AMC is thus older than the state which was formed in 1960, after it separated from the Bombay Presidency. While urban services in some areas are administered by AUDA, the remaining parts of the city are under jurisdiction of AMC.

As part of BIG 2020, the Gujarat government has planned to develop four cities (Ahmedabad, Surat, Vadodara, and Rajkot) as Mission Cities by providing them 100% basic urban infrastructure. Estimated cost for the urban infrastructure schemes is pegged at INR 1119.24 bn. These will be largely funded by urban renewal schemes such as JnNURM, launched by central government in 2005 (GIDB, 2010). The JnNURM is a significant step towards evolving a policy-based urban development framework. The programme combines efficient provision of improved urban infrastructure and civic amenities (such as housing, water supply and sanitation, slum rehabilitation, and urban transport) with improved urban governance reforms, seen as catalyst for the former two. Under JnNURM, 65 cities have been identified as 'mission cities' where projects of urban renewal will be partly (35% of the total) funded by the central government.

Emphasis has been laid on involvement of private sector in various projects. Gujarat has taken the lead by completing 27 out of 70 projects sponsored and completed under JnNURM, as in January 2011 (Economic Times, 2011b).

The central government is also setting up the PPP-Urban Infrastructure Fund (UIF) to leverage urban infrastructure projects worth INR 60 bn. It will offer soft loans to urban local bodies implementing urban infrastructure projects involving any nature of private participation.

9 Conclusion

The chapter presented a macro view of the policy initiatives of the national Government resulting in enhanced reliance and growing acceptance of PPPs in infrastructure in India with particular focus on the roads infrastructure sector. The socio-economic factors of Gujarat were discussed along with the policy initiatives taken by the state government to promote private participation in roads and urban transportation. It is pointed out that a distinct policy shift has been observed towards PPPs in the infrastructure sector both in India and in Gujarat.

The review of literature on PPPs has however highlighted evidence of several serious issues of governance of PPPs. Studies have also revealed that many of the claims, regarding PPPs as a superior mode of delivery of public services, are flawed. In this background, this research aims to study PPPs in road transport sector in India to examine whether PPPs are ‘partnerships’ and operate as ‘policy networks’, as described in the literature. It examines the nature of division of roles, responsibilities, risks and benefits between the public and private partners, and investigates to what extent have private sector resources been invested in these projects. The factors shaping the PPPs in the Indian context are analysed to understand the reasons behind any deviation in these projects from the widely accepted theoretical models. For this purpose, one intra-city transportation and two state and national highway PPP projects each, have been selected for in-depth study.

The following chapter analyses the empirical findings of the Bus Rapid Transit System (BRTS) of Ahmedabad city of Gujarat. It analyses the distinct features of the ABRTS model of PPP and examines the key issues of governance by investigating the causal multi-dimensional underlying structures and mechanisms generating the various aspects of the PPP in the urban context.

CHAPTER 6

ANALYSIS OF EMPIRICAL FINDINGS: INTRA-CITY ROAD TRANSPORT PROJECT

1 Introduction

This chapter analyses the bus-based urban transportation system of Ahmedabad city in Gujarat. The prevailing public transport systems within the city are briefly analysed to understand the context of development of the Bus Rapid Transit System (BRTS). The chapter further discusses the distinct features of the PPP model of the BRTS in terms of the partnership of Ahmedabad Municipal Corporation (AMC) with its various partners. This analysis reveals the underlying structures and mechanisms covering political-bureaucratic, economic, administrative, institutional and social domains that shape the PPP in the urban context and contribute to the distinctiveness of the BRTS. Deep understanding of the ways in which these inter-linked structures and mechanisms influence relationship of AMC with its private partners is expected to enrich policies regarding such projects in the country.

2 Significance of study of Ahmedabad Bus Rapid Transit System (ABRTS)

Urban transportation systems in India are developed by state governments or urban local bodies. Ahmedabad BRTS has been planned, designed, partially financed and executed by the Ahmedabad Municipal Corporation. The ABRTS, popularly known as '*Janmarg*' meaning '*the people's way*', is planned for 88 km of inter-linked corridors. Currently it is operational for 58 km and work on remaining stretches is ongoing. In addition to the surface-based network, a 4 km long elevated corridor near the city railway station at Kalupur is also planned.

ABRTS is the only urban bus-based mass transit system in the country that has been able to achieve most of its stated outcomes and has become popular among the city people, although other cities such as Delhi, Pune and Indore have also developed similar systems. The Ahmedabad BRTS has been awarded the Best Mass Rapid Transport award under JnNURM programme of central government in 2009 and 2010, and International Sustainable Transport Award in 2010. It was the runner–up for award of 'Outstanding Innovation in Public Transport' by the International Transport Forum

(ITF) and International Association for Public Transport in 2010. Ahmedabad has been identified as a 'Best Practice City' by the World Bank, whereas the Asian Development Bank has described the city BRTS as one of the ‘new urban innovations and best practices’ which can be emulated not only by other cities in India, but also in other developing countries (Indian Express, 2010a). Ahmedabad also won the prestigious national award of ‘*Nagar Ratna*’ (Urban Jewel) for 2011 for its efforts towards urban renewal, as well as the national award for best city for implementation of basic services for urban poor, largely due the performance of ABRTS.

The following sections analyse the factors underlying the growing need, and contributing to the popularity and success of the bus rapid transport systems in various countries including India.

3 Reasons for growth and acceptance of bus rapid transit systems

The BRTS is a high-quality customer-orientated bus-based mass transport system which is found to deliver fast, comfortable and affordable mobility to urban population. This is achieved through dedicated right of way, assured and timely service through frequent operations coupled with intelligent transport management. BRTS is increasingly being viewed as a dependable and cost-effective solution for providing high quality rapid transit for urban areas even in budgets of municipalities of low-income countries. Typically, it is found to be 4-20 times cheaper than a tram-based urban transport system and 10-100 times less expensive than a metro system, as it largely uses the streets and does not go underground. More than 40 countries across six continents have experimented with it in one form or the other. Its flexibility enables it to serve a variety of access needs and locations in congested cities. Furthermore, it can be easily integrated with other mobility modes. It is also claimed to represent greater equity across various urban segments (ITDP, 2007).

3.1 Contextual perspective from India

Cities of South-East and South Asia are characterised by high population densities, highly mixed traffic lanes, high incidence of non-motorised traffic, preponderance of cyclists and pedestrians, and short distance trips (Newman and Kenworthy, 1989). According to World Bank (1991: 38-39), large number of cities in most low-income countries relies heavily on buses which form the major means of mobility for the low-

income sections. Emerging trends in population, economic growth and urbanisation indicate that, contrary to the European countries where dependence on private motorised vehicles is high, dependence on public transport systems in Asian countries will continue to be high (Tiwari, 1999). World Bank (1991: 25-27) notes that, although high-capacity urban transport systems are satisfactorily operating in the high-income Asian countries, in most of the low-income Asian countries, due to low income levels and resource scarcity within the governments, a bus-based public transport system is the only economical and financially viable solution. Buses are the predominant mode of travel in middle-income Asian countries and 'form the backbone of urban public transport services' (Tiwari, 1999: 58).

In India, bus transport accounts for about 90% of all public transport in the cities (Pucher *et al*., 2005). Other than Mumbai where rail is the chosen mode of urban transport, almost all Indian cities rely predominantly on buses. Due to reasons outlined in the previous paragraph, the requirements of urban mobility are found to be better served by flexible services offered by buses. However, most public buses in small and medium sized Indian cities are old, poorly maintained, slow, unreliable, and frequently overcrowded (Acharya, 2000). According to Acharya (2000), overcrowding is found to increase the frequency of breakdowns, which coupled with poor repair and maintenance results in deteriorating levels of comfort and service. A large number of public transport buses in India thus operate under sub-optimal conditions. This has forced a section of the middle class passengers to switch to personal motorised two and four wheelers further worsening the already congested roads and adding to the problems of pollution. Pucher *et al*. (2005) observe that public transport systems in India have outdated technology, inefficient management, are overstaffed and have low productivity. In spite of larger passenger volumes (due to their cheap fare structures), they are dependent on large government subsidies. To cope with the demand for public bus transport, some cities have authorised private operations of buses on some routes through route licenses. Of these, Delhi and Kolkata have the largest fleets. These buses have the advantage of lower operating costs, higher productivity, and more revenue per km. There are however serious issues of safety, rash driving, competition between operators for increasing their ridership, service quality and problems of coordination (Pucher *et al*., 2004). Blore's (1992: 100) study of Kolkata's buses reveals that the commuter gets only 'few of the vaunted benefits of privatisation either by way of choice or efficiency'.

3.2 Contextual perspective from Ahmedabad city

Gujarat has recorded a 160-fold rise in number of registered vehicles in four decades since 1961 (AMC and AUDA, 2006: 50). In 2006, Ahmedabad accounted for about 21% of registered vehicles in the state, of which 73% were two-wheelers (AMC and AUDA, 2006: 51). While Ahmedabad city has witnessed about 10% rise in number of vehicles (GIDB and CEPT, 2007: 12). The high growth rate of vehicular population has been largely attributed to the state's economy which has been continuously doing better than many other states, and the steep escalation in the population. Ahmedabad city accounts for 20% of the state's GDP and about 25% of the state's urban population, which is estimated to double over the next two decades (AMC and CEPT, 2008). It registered 54.88% rise in decadal population (since 2000), which is among the highest in the country and is attributed to the rapid urbanisation of the state of Gujarat. Furthermore, the city's traffic comprises more than 70% two-wheelers, the largest in the country, and around 10% cycles (GIDB and CEPT, 2007). Hike in numbers of vehicles combined with the deterioration in public transportation over the past decade has resulted in increased patronage of two-wheelers and shared auto-rickshaws. This has increased congestion on the city streets and worsened the air quality (CEPT, 2005: 2).

The table below compares the pattern of decadal vehicular growth at national, state and city levels.

Table 6.1: Total number of vehicles registered and decadal vehicular growth pattern in India, Gujarat and Ahmedabad

Year	India		Gujarat		Ahmedabad	
	Total growth	Decadal growth (%)	Total growth	Decadal growth (%)	Total growth	Decadal growth (%)
1961	665000	-	43230	-	N.A.	-
1971	1865000	180	147967	242	62922	-
1981	5391000	189	522451	253	165620	163
1991	21474000	298	2052391	293	538182	225
2001	54991000	156	5576040	172	1210278	125

(Source: AMC and AUDA, 2006: 51)

3.3 Role of public transportation

The Ahmedabad Municipal Transport Service (AMTS), operated by the AMC, has been providing public bus services for more than five decades. However, the service quality and ridership of AMTS has significantly deteriorated over the years. In 1980s, it contributed to about 40% of city trips performed amounting to nearly 650,000 trips.

Over 2000-2005, this shrunk to 400 buses catering to about 350,000 trips accounting for approximately 7-8% of the total city trips (AMC and AUDA, 2006).

The following table indicates the growth of AMTS vis-a-vis two and three wheelers in Ahmedabad.

Table 6.2: Total motor vehicle growth and growth of two/three wheelers and AMTS buses in Ahmedabad (1971-2001)

Year	All vehicles		Two wheelers		Three wheelers		AMTS bus	
	Total number	Growth (%)	Total number	Growth (%)	Total number	Growth (%)	Total number	Growth (%)
1971	62922	-	21701	-	4865	-	525	-
1981	165620	163	86550	299	16741	244	610	16
1991	538181	225	361371	318	38359	249	756	24
2001	1210278	125	863003	139	65868	72	886	17
Total Growth (1971-2001)= 1823%			3877%		1253%		69%	

(Source: AMC and AUDA, 2006: 51)

The above table shows that while the vehicular traffic increased 18 times between 1971 and 2001, the growth in two and three wheelers was about 39 and 13 times. AMTS buses on the other hand registered a poor 0.69 times rise.

Reasons for the decline of public transport systems in Ahmedabad include shrinking fleet size, low fleet utilisation, decreasing average load-factor, falling average operating speed, rise in number of cancelled service in addition to poor connectivity in peripheral areas resulting in lack of service reliability, discontinuity in ring roads, partially developed right-of-ways, inadequate parking facilities, lack of pedestrian facilities, and manifold increase in competition from private vehicles and two-wheelers (AMC and AUDA, 2006). Other common problems are over-crowding during peak hours, unsafe driving and rude behaviour of the drivers, and poor condition of buses. This has resulted in a large section of people shifting to auto-rickshaws, shared four-wheelers *(chakdas)* and two-wheelers. Before introduction of the ABRTS, AMTS catered to about 20% of the total trips in the city (ABRTS, 2006).

4 Initiatives by the Gujarat Government

The initiatives by the state government to address the growing need for public transport were elaborated by the senior officials and policymakers in the Gujarat government. They stated that in view of the increasing demand for public transport in the city, the state government decided to develop an Integrated Public Transit System for Ahmedabad in 2002. GIDB developed a Master Plan for Ahmedabad which examined the needs of mixed transport[21] based on the city's social and economic profile, travel demand pattern, road network characteristic, services provided by AMTS and the proposed intra-city railway network. The government opted for a multi-modal system comprising metro rail, light rail, mono rail, bicycles, pedestrian pathways and a bus system. Within these modes, BRTS was decided to be developed first and later to be integrated with the metro rail, as it could be developed faster and was cheaper to implement than the metro system. Whereas a metro requires about INR 200-300 m/km[22], a BRT can be constructed in about INR 40-50 m/km (Tiwari, 2007: 2). The metro may be cheaper in the long run but requires a much larger initial cost. Additionally, as a stand-alone system metro is found to be incapable of meeting mobility needs of majority of city residents and is dependent on feeder services provided either by buses or three-wheelers. As about one-third of the city population lives within 500 m distance of ABRTS corridor (ABRTS, 2006) it is proposed to be a feeder service to the metro, while AMTS is planned to provide feeder service to BRTS.

Although the state government was geared up for urban infrastructure development with the reform agenda firmed up as part of Urban Infrastructure Year (2005) for the state and had designed its own Urban Transport Policy, the central government contributed to the development of BRT significantly through JnNURM, launched in 2005. In addition, the central government framed the National Urban Transport Policy in 2006 which focuses on mobility of people rather than mobility of vehicles with renewed attention to making public transportation an attractive option, and the need to provide quality service at affordable price. These principles also provided philosophical underpinning to the development framework of ABRTS.

[21] Based on the traffic survey conducted by CEPT in February in 2006, and the other surveys carried out in the past.

[22] The 108 km extension of the Delhi Metro phase-III will cost INR 300 bn inclusive of taxes; per km cost is about INR 2.80 bn [TOI, Delhi edition, 12 April 2011].

A unique contribution of JnNURM is the acknowledgement at a policy level of the fact that most Urban Local Bodies (ULBs) entrusted to carry out urban development projects are generally short of funds (Mathur and Thakur, 2004; Bahl and Linn, 1992), and their sources of revenue are inflexible and non-bouyant (Lall and Mohanty, 2008). Moreover, taxation powers of the local municipalities are dependent on state governments. According to a study by the Twelfth Finance Commission, share of municipalities in their own taxes is less than 0.3% and their revenue is less than 0.75 % of the GDP (Garg, 2007). Acknowledging this, JnNURM provides for 35% of project cost to be funded by the central government, 15% by state government and remaining by the ULB[23]. According to a government report (Government of India, undated), an estimated INR 1205.36 bn would be required for urban infrastructure projects in the identified 65 ULBs over a seven-year period. Started with an initial corpus of INR 500 bn, JnNURM has a revised funding of INR 660 bn from November, 2010, informed the Director, JnNURM at AMC (see Appendix 6 for features of JnNURM).

5 ABRTS: A popular mode of transport

My interviews with the commuters on the Ahmedabad BRTS, my focus group interviews, policymakers, transport experts and academicians coupled with secondary data from media reports revealed that ABRTS has become a popular mode of transportation for the city people. It offers speedy, frequent and assured services which are comfortable and affordable, which was also experienced by me during my ride on the BRTS. According to data provided by AMC, a total of 102 buses run along a dedicated route of 58 kms, from 6 am to 11.30 pm at intervals of 2.5 to 4 minutes during peak time and 6 to 8 minutes during off-peak hours (as in October 2011). The average bus speed of 25-27 km/hr during the peak period is reportedly the highest in the country. The minimum price for a ticket is INR 2 and the maximum is INR 28 for the 58 km length. The average price of INR 5 for 5 km is about 40% higher than for the city bus service; 65% of the total passengers travel between 1-5 km. One of my respondents from the focused group, a student, stated '[*E]arlier I would travel from Vasna to here [the University area] in 30 mins. Now I reach in 10 mins. I save INR 2 in the journey. This, the ticket is INR 2 and there the ticket was for INR 4*'. Another student mentioned that "[I]n case of AMTS, if it is cancelled, it is not known. But BRTS is regular. After

[23] AMC was the first ULB in the country to issue tax-free bonds of INR 1000 m in January 1998 to access market capital. This was remarkable as it did not carry state security and heralded the first step towards market-based self governance for a local civic body.

5-10 mins, there is some bus". A girl travelling in the ABRTS, explaining its safety aspect, narrated this incident- '*[I]t is more safe than the AMTS as I have an experience- the bus was empty and I was the only one sitting at the back of the bus. Then they announced that since you are the only girl, please come and sit in the front. Do not sit at the back*'. Elaborating on the expectations of the user, Director (JnNURM) at AJL stated- '*If I want to go by bus, there should be a dedicated space, a bus stand where I can stand, where I get bus within a reasonable time, no pick-pocketing, nobody jostling me, [and] no rickshaw driver is standing between me and the bus*'.

Extension of BRTS route to Soni Ni Chali, one of the crowded areas in old Ahmedabad, has resulted in transition of 45% of AMTS passengers to BRTS (Indian Express, 2010b). Officials at AMC pointed out that the planned final BRT route includes the crowded areas of the old city, the city railway station and outlying industrial areas and is expected to benefit the labourers to a large extent.

According to media reports (Business Standard, 2010c), when the service commenced in October 2009, about 22%, 21% and 0% of two-wheeler, three-wheeler and four-wheeler users shifted to ABRTS. After ten months, these figures touched 24.5%, 23.5% and 2%, respectively. According to official data, the ridership was 135,000 in October 2011, registering a 6.5 fold-rise since it started. Steadily rising fuel prices have also been a significant reason for shift from personal motorised vehicles to this mode, specifically for the middle and lower income families, a transport expert observed. Moreover, as BRTS tariff is not yet dynamic although plans in this direction are afoot, user charges have not been raised since it started, a senior AMC officer noted.

The comparative official operational figures for ABRTS, for October 2009 and 2011 are enumerated below.

Table 6.3: Comparative data for BRTS operations for October 2009 and October 2011

Operational indicators	October 2009	October 2011
Total number of passengers travelling per day	18000	135000
Number of buses operating per day	21	102

Average number of passengers per bus per day	850	1350
Total revenue generated per day	INR 0.082 mn	INR 0.825 mn
Operating charges per day or per km	INR 35.4 (per km)	INR 43.11 (per km)
Proportion of operating charges financed from user charges	BRTS monthly operating expenditure is approximate INR 33.2 m and income is approximate INR 24.8 mn per month. Difference of INR 8.2 mn is financed by AMC.	
Mileage	2.25 km per litre	2.25 km per litre for diesel bus and 3.5 km per kg for CNG buses

(Source: provided by AMC via email, October 2011)

Additionally, from my personal ride in the BRTS and AMTS buses, and my interviews with the commuters and the focus group, it was found that the BRTS bus stations are safe, weather-proof and provide comfortable seating, unlike those of the AMTS. The distance between two BRTS stations is only 500 m, thus providing people ease of catching a bus from their localities without walking too much. People from areas such as Naranpura, who depended heavily on shared auto-rickshaws due to poor public transport services, have almost completely shifted to BRTS. A large number of students coming to the University area from various parts of Ahmedabad prefer it as it provides assured, timely, safe and easy mode of travel. Media reports (Times of India, 2010a) note that many parents want their children to travel by BRTS rather than the two-wheelers on crowded roads as this reduces instances of accidents; senior citizens are also opting to travel by BRTS buses due to similar reasons. While DGM (Operations), AJL pointed out that ABRTS is highly preferred during festivals like *Navratri*[24] when special buses are scheduled for the enhanced ridership, mainly because of its safe nature. He said '*[t]here is a lot of rush in the buses. We have to be present there. Immediately we have to take decision, we have to run more buses*'.

During my focus group interviews with users of the BRTS, my respondents indicated that enhanced security at bus stations and the bucket seating arrangement in ABRTS buses has resulted in higher sense of safety in single women. These features are absent in the AMTS buses where sometimes more than four persons are found sitting on the berth meant to seat three persons. Moreover, the instances of thievery are almost nil in BRTS. The passenger information system at the stations and inside the buses in three

[24] *Navratri* is a festival celebrated by Hindus in the month of October-November lasting for nine days.

languages[25], easy ticketing, helpful staff at the stations and modern clean fast buses are attracting commuters. These features were also observed by me during my ride in the BRT buses.

The efficiency and popularity of ABRTS has led to members of local civic bodies from other cities in India to visit Ahmedabad and understand working of the ABRTS. During one of my trips on the ABRTS, corporators from the Pune Municipal Corporation were also present in the bus. Officials at AMC and media reports (Business Standard, 2010) informed that representatives from countries such as Tanzania, Lagos, Vietnam, Malaysia, Indonesia, and Dar es Salaam have also visited Ahmedabad to study its BRTS.

6 PPP model for ABRTS

In order to design, implement and operate the BRTS, AMC created unique partnerships at different layers with the private and non-State agencies. It has partnered with the city-based Centre for Environmental Planning and Technology University (CEPT) to benefit from its expertise and knowledge in structural design and planning. The ABRTS team leader at CEPT and the ITDP project head pointed out that although CEPT possessed adequate theoretical expertise in this area, it fell short in terms of experience in financial and operational structuring of such projects. It therefore teamed up with ITDP[26] (Institute for Transportation and Development Policy), New York which has worldwide experience in structuring and developing BRT systems, including the TransMilenio of Bogotá (Colombia) and Curitiba (Brazil) which have been widely acknowledged as model BRT projects. ITDP brought to the project insight from its international experience in designing bus routes, framing contracts, and setting up institutional arrangements, organisational structures and operating mechanisms. CEPT continues to assist and advice AMC in designing phase II of the project and assisting in operational issues in phase I, while ITDP was associated with the project only during phase I.

My interviews with the transport experts, officials at AMC, and respondents from CEPT and ITDP revealed that AMC opted for the PPP model for providing the infrastructure and services, due to such mandate of JnNURM. It was also pointed point out that the

[25] The passenger information system is displayed in Hindi and Gujarati on the turnstiles, while the audio service is in Hindi, English and Gujarati.
[26] ITDP is an international NGO working for sustainable transport solutions and partners with countries in developing frameworks and executing urban transport systems.

initial market surveys by CEPT found that there was no single private agency competent to take up the role and responsibilities of a typical 'concessionaire' that would provide all the services under a DBFO mode. Moreover, private finance could not be envisaged as a prominent feature of the PPP due to lack of assured return on the investment for the private partner by way of tolling. AMC therefore decided that the main services of building and operating the buses, and Integrated Transport Management Systems (ITMS) would be provided by two different private agencies through long-term incentive-based concession agreements with substantial allocation of risks to the private partners. Activities such as upkeep and maintenance of bus stations, operation and maintenance of station doors, and landscaping and security of bus stations were also outsourced to private agencies based on short-term Service Level Agreements (SLAs). The former Municipal Commissioner pointed out that two agencies were engaged for each of these services in order to prevent monopolistic behaviour on part of a single agency, and to have a back-up.

7 Responsibilities of AMC within PPP for ABRTS

AMC has established Ahmedabad Janmarg Limited (AJL), a fully owned subsidiary, as a Special Purpose Vehicle (SPV) for operational and financial management of ABRTS, in 2007. The Municipal Commissioner is the ex-officio Chairperson of AJL.

While all tasks related to selection of the private agencies are carried out by AJL, AMC is responsible for construction of the BRTS corridor and the bus stations. These works are centrally funded under JnNURM and executed through a pure contract model.

My respondents at AJL and CEPT, and the transport experts associated with the project informed me that activities of ABRTS have not been bundled as generally found in many PPPs primarily due to the unique nature of urban transport and ownership of roads in India; ownership of city roads in Ahmedabad rests with the AMC[27]. Urban transport is not amenable to models of highway transport as firstly, urban roads cannot be tolled unless they are expressways; BRTS is not an expressway. Thus there is lack of incentive for the private partners to be involved within a BOT model as there is no assured return on their investment. Secondly, urban roads carry several underground utilities belonging to public and private service providers such as telephone cables, gas-lines, water

[27] Ahmedabad is one of the few ULBs in India which provides all urban services such as water supply, sewerage, street lighting, drainage, construction and maintenance, city bus services and town planning.

pipelines, sewerage and drainage lines, optical cables and electricity cables. Shifting these entails high degree of responsibility as these provide crucial services to the city. It also requires high level of coordination with various public and private agencies which a private agency is found to be averse to take up unless the returns are commensurate. As Director (JnNURM) at AJL stated, many old amenities which were not accounted for during the initial survey were unearthed during the road construction process. The official also noted that since the private agency is not responsible for providing the amenities, which is responsibility of the AMC, it would not be as careful if some were disrupted. He noted-

'The State carries with it the legal force which comes only with the legal entity. So many things that only the AMC or State agency can do- like removal of encroachments, shifting of temples, deciding about the utilities that lie underground. A private body is ill equipped to handle all these single handed... If the entire project is given to the private consortium, then all such issues will crop up. So, unless government does it first and does it properly, such that it sets a precedent by doing it in this way of PPP, it will not happen.'

Additionally, the civil wing of AMC has long experience in civil works such as construction of roads, flyovers and bridges. More than 150 civil engineers (some of whom have been with the AMC for more than 25 years) handle about INR 5 bn of civil works annually, such as water works, city roads, low-cost housing, bridges and flyovers, he further added. AMC was thus found to be better equipped and more suitably located to efficiently manage these tasks as compared to the private sector.

The AMC official also pointed out that AMC looks after land acquisition for constructing the BRT corridor, as it is more competent to manage this task than the private agencies. Land on both sides of the main roads in many areas is encroached upon by the inhabitants who have build '*pucca*' (permanent) buildings on it. Reclaiming this land is tedious and time consuming as it involves negotiations with the dwellers and fighting litigations many times. Often the inhabitants get a 'stay order' from the courts (in one case the inhabitant approached the Supreme Court of India). This tends to become a political issue when the local councillors and political leaders get involved with the matter. As the BRT route construction is through a typical contract, the contractor does not start work till the land is provided free of encumbrances which makes this a time sensitive activity. Although the BRTS project is being completed as per schedule, land acquisition has resulted in delay of some months in few stretches. This information was corroborated by the contractor engaged for the civil works of the BRTS corridor.

AMC has partnered with CEPT University for planning and designing the project.

8 Roles and responsibilities of CEPT University as a PPP partner for ABRTS

When the state government decided to entrust implementation of the BRTS to AMC, the challenge that AMC faced was to deal with its in-house capability deficit in designing, structuring and managing the project. Almost all ULBs in India have come in for sharp criticism for their serious institutional deficiencies (Kundu *et al*., 1999). This can be partially explained by the non-decentralisation of powers to the local bodies for taking any major development projects which has hampered development of their capability. Secondly, as pointed out by my respondents at CEPT, ITDP and AMC, there was no precedent of successful BRTS projects in the country that could guide AMC in structuring and operationalising a BRT system. Delhi and Indore were the only metro cities which had some experience, although the projects (which are more like 'bus-ways' with dedicated bus route for all kinds of buses rather than full BRT systems with dedicated route for BRT buses), did not achieve the outcomes which they had set out. The Delhi project has come under wide and severe criticism on various issues including misplaced planning, diffused and multiple ownership, lack of accountability, poor management, and non-participative planning. It could not be scaled up and at present much of the infrastructure such as roads and bus stations, is being sub-optimally used. It is reported to be chaotic and generating more traffic management problems than solving them (Hindu Business Line, 2009). I observed the results of such misplaced planning during my visits to New Delhi to collect data.

Moreover, in order to avail of central funding for the BRT project under JnNURM, developing the City Development Plan (CDP) by the ULB was made compulsory, stated the CEPT project head. AMC found it difficult to carry out this exercise as it did not have adequate capacity in this regard. AMC thus decided to partner with CEPT University for the CDP and for planning and structuring the BRTS. CEPT University is an autonomous educational institution and reputed in fields such as architecture, building sciences, interior design, urban planning and public policy. Additionally, it had fairly substantial knowledge about the project as the initial detailed project report on the BRTS was prepared by it for the Gujarat government. CEPT had also conducted several city surveys for AMC and had worked with the civic body for the post–earthquake reconstruction and rehabilitation activities.

9 Outcomes of the AMC-CEPT-ITDP partnership

My respondents at AMC, AJL, CEPT, GIDB and the private agencies informed me that AMC, CEPT and ITDP jointly carried out the conceptualisation of the ABRTS along with creating the administrative and governing structures, and mechanisms for developing, implementing and operating the project. This partnership resulted in several significant outcomes detailed below, which substantially contributed to success of the project.

9.1 Planning and designing the project

The process of planning and design of ABRTS was elaborated by the project head at CEPT. He stated that the project was conceptualised as a 'people's project'. Instead of having a stand-alone project with just a 'bus-way', the planner decided to make the ABRTS a part of the larger scheme for renewal of the city. Thus, a holistic city renewal exercise was taken up as part of BRTS planning despite the primary need being to provide speedy, efficient, assured, reliable, comfortable, good quality, timely and inexpensive bus service to solve the problems of traffic congestion, air and noise pollution, and accidents. A comprehensive urban development roadmap in form of the City Development Plan was thus prepared. It merged urban transport with land use by way of removing encroachments along the roads, providing missing road-links, bridges, flyovers, and rail and river over-bridges. One of the aims of this exercise was to enhance support for the project among the city-people. The process of providing better infrastructure by way of widened roads with more and better walkways, footpaths, spaces for parking etc., depicted a sense of urban renewal. Thus, in what marked a departure from the other public transportation projects, ABRTS moved from a 'service' to a 'network' or 'systems' perspective; it embedded the urban transportation project within a larger city renewal canvas, noted the CEPT professor.

9.2 Guidance through national and international experience

The project heads at CEPT and ITDP, and AMC officials stated that CEPT and ITDP suggested to AMC to study various BRTS projects in India and abroad and learn from their experiences. Accordingly, members from AMC, CEPT and ITDP visited Perriera, London, Beijing, Honghou and Jakarta for the purpose. Research has demonstrated that 'blueprint' strategies have been ineffective in many cases (Chambers, 1995). The team

was therefore clear to not blindly replicate any model even if that has worked in a particular city, as every city is contextually differentiated. The project leaders at CEPT and ITDP explained how the learning from the projects of Delhi and Bogotá informed decision making in case of ABRTS. The controversial Delhi model was closely analysed to prevent making the same mistakes. BRT of Bogotá (Columbia) and Curitiba (Brazil) guided Ahmedabad BRTS although it is a contextualised design of TransMilenio of Bogotá. These models have demonstrated that bus-based rapid transit systems are ideal for large developing cities as they provide many benefits of a metro-rail system at much lower costs. During the planning stages, two teams of officers from AMC and CEPT visited Bogotá and Curitiba to study their systems. Of these, Bogotá[28] was selected. The former Municipal Commissioner stated that '*we found that Bogota is more nearer to Ahmedabad because we were 6 million and they have 7 million population. Size of city is also same. Economically also they are dominated by middle class. So we found that let's copy with certain modifications this Bogota model'*.

Additionally, CEPT and ITDP informed me that based on their recommendation AMC took the pre-qualified bidders to Bogotá for studying the TransMilenio system before bidding. My interviews with some of the bidders and the bus operator revealed that this proved to be fruitful as interactions with managers from the public sector and the private bus operators provided the bidders critical insight into its operations. This also equipped them with the knowledge of what was expected in ABRTS regarding the standards of performance and enabled them to submit a realistic bid.

9.3 Closed and dedicated 'median' corridor

Respondents at CEPT and ITDP pointed out that a distinctive feature of ABRTS is its dedicated 'closed' median corridor, created on their advice. Only the BRTS buses have access to this route. Segregation of other traffic from BRT buses provides assured and speedy travel as the arrival and departure of the BRT buses can be closely monitored and regulated. Also, as the experts stated, a Public Information System (PIS) can be installed on buses and bus stations only when the service is assured and predictive, which is not possible when buses run along with mixed traffic and therefore are open to the contingencies of such traffic, which is the case with the Delhi BRTS. From her

[28] The Bogotá 'Transmilenio' BRTS system was undertaken under the leadership of Enrique Penelosa who was mayor during 1998-2001. He is presently President of Board of ITDP. ITDP helped in developing the Transmilenio.

international experience on similar projects, the team leader at ITDP noted that the median dedicated route is significant as a strong political will is required to support it, since it is largely looked upon as one which eats into the available space for the car owners. Studies in the Indian context (Tiwari, 2007; Pucher *et al*., 2005) have found that the car owners form a small but powerful group and are frequently observed to influence transport policy decisions of the government. As stated some urban transport experts, a major cause for the reported failure of the Delhi BRTS is the strong resistance from the car owners for dedicating a route for the buses.

Moreover, my respondents in AMC and AJL pointed out that as AMTS is envisaged to be feeder service for BRTS, having a semi-closed route or a bus-way sharing space with AMTS would have proved counterproductive as BRT would have competed with AMTS. Such a move would have antagonised the AMTS unions and would have been politically unacceptable.

9.4 Partnering with the city people

Literature suggests that urban transport planning in India reflects ‘failure of our democratic process’ and decision making process which ‘does not allow inclusion of the demands of the majority of the city residents who are pedestrians, bicyclists and public transport users’ (Tiwari, 2007: 3). Study of the Pune metro system by Sreenivas (2011) and Hyderabad metro by Ramachandraiah (2009) conclude that decision making in most ULBs continues to be ad hoc, non–transparent and non-participative. According to the former Municipal Commissioner and the team leader at CEPT, in case of the ABRTS, it was perceived that a heightened sense of belonging and ownership within the city people may strengthen their acceptance and break down any resistance that such new projects sometimes tend to generate within some sections of the society. Prior evidence demonstrated that imposing a system on the users without making them partners in the project may not yield expected outcomes, such as in Delhi, where needs and preferences of the users have not been integrated in the system. While a body of experts have termed the experiment as a failure (Planetizen, 2008), the Delhi Chief Minister has admitted that the project is ‘controversial’ and has ‘some problems’ (Times of India, 2012a). The whole project is currently under renewed survey to assess and analyse its benefits (CRRI, 2012).

While discussing the initial problems faced by the project, the Municipal Commissioner and team leader at CEPT narrated that there prevailed a general perception among a section of the people of Ahmedabad that many traffic problems in the city were due to poor traffic management. Therefore widening the roads to make more road-space available for the increasing vehicular traffic along with better management of the existing public transport service, was felt to be able to largely mitigate the problem of congestion and traffic snarls. Moreover, the Municipal commissioner also mentioned that the city people generally felt that works started by AMC were never successfully completed. The challenge for the planners, the respondents stated, was to allay people's concerns and fears by creating awareness about the benefits of BRTS, and putting in place governing structures and mechanisms that provide an effective and efficient public transportation.

9.4.1 Interactive workshops for stakeholders

Several innovative measures were adopted to enhance involvement of the city-people in the project and broad-base its ownership. The CEPT team leader stated that '*no project can be developed, maintained and operated in isolation of (a) people who have a stake and, (b) people in general who have a larger dimension. It is not that they have a direct stake, but are partners in terms of using the system*'. He further elaborated on these initiatives. During the planning stage AMC along with CEPT and ITDP organised several workshops with the objective to involve peoples' groups, academicians and experts on urban infrastructure and transport and seek their insights. '*There were times where there was more information sharing, there were times when we would involve them in the decision process*', he pointed out. Some workshops were organised to engage with direct stakeholders, such as the Gujarat State Road Transport Corporation (GSRTC), AMTS, and *rickshawallas* (3-wheelers), while others educated the people about the features and advantages of the BRTS. These interactions helped to frame many key policy decisions regarding design of built infrastructure and operational aspects of BRTS. They also enhanced user-friendliness and acceptability of the project among the passengers, and acted as the first step towards infusing confidence in them.

These interactions also contributed to enhancing credibility of ABRTS. They demonstrated the importance the ABRTS planning team attached to incorporating the people's views into the system which helped to create a rapport between the planners and users as they came face-to-face and deliberated on various issues. Prior scholarly

work suggests that support from key stakeholders is an important strategy in enhancing acceptance, legitimacy and ownership of the project, and ensure its better implementation (McGuire, 2006; Haque, 2001). Trusting and valuing the opinion of the citizens are seen as a means of building trust within them towards government's efforts (Braithwaite, 1998; Levi, 1998). Some scholars (for example, Rawls, 1997; Habermas, 1996) note that interactive modes of deliberative and collective decision-making lead to production and incorporation of public opinion and yield actions that are rational. They also help to fill in the 'democratic deficit' to a large extent, which some scholars apprehend is growing as representative democracy is argued to be insufficient to meet demands of all sections of society (Dryzek, 2000; Benhabib, 1996) and is devoid of any aggregation of views and preferences, or deliberation of content (Riker, 1982; Arrow, 1963).

9.4.2 Operating buses free of charge

Based on suggestions of CEPT and ITDP, AMC operated the BRT buses free of charge for the initial three months when the first stretch of 12.5 km was ready, to attract different sections of city-goers to use the service. The bus stations were also kept open to the public for about six months. '*I think it is good as a demonstration and well as a feedback process*', stated the CEPT team-leader. The feedback of the users was actively collected on different aspects of the service. This served as a learning ground where several design decisions were tested. '*We also learned a great deal at that point through the feedback and what people had to say. Some things were working, not working*', he mentioned. For example, tin roofs were initially used in the bus-stations which got heated up in the harsh summers of Ahmedabad. These were later replaced by concrete roofing. Similarly, steel seats were replaced by wooden benches that are suitable for the climatic conditions of the city.

The free pilot runs demonstrated benefits of the system and helped to educate and silence many critics who compared ABRTS to the Delhi model and prophesised its failure, my AMC and CEPT respondents pointed out. Special trips were conducted for industrialists, journalists, students, academicians, doctors, politicians, bureaucrats, religious leaders, and senior citizens. About 1.5 mn people travelled in the ABRTS during this period. This also facilitated technical assessments of the drivers in terms of driving, safe docking, operating GPS consoles stationed inside the buses etc., and testing of various systems.

9.4.3 Monthly user surveys

The CEPT team leader further informed me that CEPT conducts regular monthly surveys to assess bus operations in terms of aspects related to driving and docking of bus at stations, cleanliness, behaviour of drivers and ticketing staff, whether they are in uniform, whether there are instances of rash driving and speeding, profile mapping of passengers, ease of access of bus stations, etc. Showing me the detailed survey reports, the Executive Director, AJL stated that these reports are used towards improving the bus services. According to CEPT, it is also conducting a road safety audit to examine the impact of BRTS on road safety in the city; an environment audit to assess air quality at four traffic points along ABRTS is also underway.

9.4.4 Actively engaging with the media

Respondents at CEPT and AMC pointed out that it was a well thought of strategy to utilise the mass media as an effective medium to connect with the people. It was arranged to get various aspects of the project extensively reported in local media during the initial phases. This generated much interest and curiosity about the project that prompted both English and vernacular newspapers to carry regular news items on ABRTS almost every day. All proposed extensions, innovations regarding design and execution are made public through the media. Role of mass media and publicity for public communication, specifically in forming public opinion and moulding public reason by its critical reporting, has been highlighted by Habermas (1989). Goodnight (1992: 246) states that 'publicity' is a necessary element of '[c]ritical-rational public discussion because it provides information of consequence' and 'it creates an opening for rational appraisal by those whose interests are affected by the decisions of the authority'.

9.5 Involving the city traffic police

The ABRTS partners actively engaged with the city traffic police with an objective to imbibe a sense of ownership in them as their assistance was perceived to be crucial to efficient functioning of the project. The Joint Commissioner of the city traffic police has been made the *de facto* member of AJL Governing Board.

In my interview with the former Municipal Commissioner, he elaborated on these measures. He said that during the planning phase, his team made several presentations

to the city police department. Rather than concentrating at the top, he was careful to involve officers at different levels, such as the police commissioner, joint and deputy commissioners, inspectors and the traffic constables. These interactions provided information on features of ABRTS and highlighted the responsibilities of the traffic police. It also sought their inputs on making the project user-friendly.

This engagement has resulted in the traffic department training 250 ex-army men who have been recruited by the AMC from the Army Cantonment Board particularly for taking up the duties of the BRTS at the traffic junctions. They have also been deployed at bus stations for security duties. The AMC-CEPT-ITDP team decided to have a dedicated traffic unit for the BRTS at AJL rather than increase workload on the city traffic police. Moreover, in order to ensure their accountability, the ex-defence personnel are on an annual contract with AJL.

AMC adopted the PPP mode for operational aspects of the project which include building and running the buses, automated ticketing and traffic management of the project.

10 Roles and responsibilities of bus service provider within PPP for BRTS

Evidence from BRT systems around the world suggests that bus operation forms the most crucial element of an efficient BRT service (ITDP, 2007). Hence, as pointed out by my respondents at AMC, CEPT and ITDP, AMC with the help of CEPT and ITDP carefully and meticulously designed and structured the bid documents and contracts for the bus operators to achieve a high level of performance. Professional experts were also engaged to draft the bid and concession documents.

One of these experts explained the process of bidding and formulation of the concession agreements of the ABRTS. According to the concession agreement, the selected bidder had to design and supply the buses as per design specifications, and operate them. Detailed technical specifications were stipulated by CEPT and ITDP for bus design and operation, maintenance standards of buses, and performance standards for drivers. The contract agreement accords high priority to issues such as behaviour of drivers and their uniforms etc.

The selection process went through two rounds of bidding. There were five bidders in both rounds. The deciding criterion was the lowest operating price per km quoted by the

bidders. The first round was unsuccessful as the demand for Compressed Natural Gas (CNG) buses of 430 mm floor height attracted high quotes; the lowest quote was INR 69/km. The tender specifications were modified in the second round to include diesel buses with 900 mm flat floor. M/s Chartered Speed Pvt. Ltd. quoted the lowest at INR 34/km and was selected as the bus operator; he quoted the lowest in the previous bid too. The bus contract is for a seven year period.

As part of the PPP for the bus operations, significant operational risks are passed on to the operator. He builds the buses according to specified standards, operates and maintains them. He is responsible for hiring, training and managing the drivers. At any point of time, he has to keep aside 25 buses for training purpose. For the first phase, 25 non air-conditioned and 25 air-conditioned buses were supplied, which was later expanded to 180 buses. The Municipal Commissioner said that AMC has provided a bus depot for repairs and maintenance of the buses. Other than land and built structure of the depot, the operator has provided the machinery and manpower, and is responsible for its operation and maintenance, he added. The aforesaid information has been corroborated by the bus operator.

10.1 Structuring of concession agreement for bus services

My respondents at CEPT and the Municipal Commissioner explained how the distinctive features of ABRTS emerged. As mentioned earlier, BRTS is relatively new in India. Moreover, guaranteeing volumes of ridership similar to a highway or expressway for intra-city transport is found to be difficult. The BRTS planners thus decided against passing the market risk to the operator until there is a reasonable amount of stability in the traffic density and sale revenue. Furthermore, theory of urban transport suggests that the route concessions are difficult to structure and manage. The planners did not want to get into something they could not fully anticipate and risk the project. Hence the concession, which is a ‘gross-cost contract’, was structured in such a way that the market risk was retained with the partner having better capabilities to absorb and manage it, i.e., the AMC. Thus the partnership has been structured in a classical way in this aspect. While the monthly payment to the contractor is based on the mileage in terms of km/bus (linked with fuel prices) against certain performance specifications, he is guaranteed a minimum payment of 200 km per month irrespective of the ridership. Through the assured payment, gross cost of the operator is being reimbursed without passing on the revenue risk to him, thus providing him with an

incentive for investing in bus building, operations, maintenance etc. In this sense, it makes the bus contract very similar to the road annuity contracts where the revenue risk is borne by the government and the investments are made by the private partner, in view of the limited traffic density on the roads.

Additionally, evidence of urban transit systems worldwide demonstrates that only a limited number of public transport companies are out of the red. According to the Planning Commission Working Group on urban transport, almost all urban transport companies across the world need support of government subsidies (Times of India, 2012b). The Working Group has also noted that internationally, PPPs have not been successful in urban transportation due to unstable revenues of these projects, which makes them commercially unviable. The case of AMTS supports this argument as despite a large fleet its revenue meets only 44% of the total cost of its operations (2010-2011 figures). This is primarily because fares are kept very low to cater to poor sections of passengers. The Deputy Municipal Commissioner in charge of AMTS stated that '*It is loss making. Per month about INR 0.10 bn is being given as loan from the AMC. Deficit is reimbursed by AMC per year in the form of loan per year, not less than INR 1.10 bn*'.

In ABRTS the license form of contract has been used rather than having route concessions where the operator runs the buses and collects charges from the passengers. According to urban transport experts, the license is the weakest form of contract from viewpoint of the private operator; it places the public sector in a stronger contractual position. In Delhi BRTS, bus operators are given route concessions and their revenues depend on volume of passengers collected. This has led to competition among the operators to get more passengers which resulted in aggressive behaviour among drivers, speeding, increased chances of accidents, mismanagement at bus stations, and poor customer service. AMC therefore decided not to opt for route concessions, to have one bus operator in the initial phase, and fully allocate the risk of operation to him. It also decided against bundling bus operation and ticketing as none of the domestic private sector agencies was found to have any expertise in handling the two activities together. Individually also, the capability in these areas was found to be limited.

10.2 Allocation of risks between public and private partners

Information on the allocation of risks between the partners was provided by officials at AMC and my respondents at CEPT and ITDP. One of the major risks allocated to the private partner is regarding bus design and fabrication. The AMC-CEPT team opted for 900 mm flat-floor bus model as it is more user-friendly due to its flat floor, and is less expensive than other models. The market survey however revealed that this model was not manufactured by any private bus manufacturer. Opting for an expensive model would have loaded the bid thus increasing the bus fare. It was therefore decided that CEPT and ITDP would design the bus specifications, as they had the necessary competence, and the bus operator agreed to build the bus as per the supplied specifications. Hence the manufacturing risk was borne by the private partner. As any bus of this specification was never built in India, the model had to undergo several design and fabrication iterations before the acceptable prototype could be manufactured and assembled.

Moreover, risks related to maintenance of the buses are completely borne by the operator. It forms a critical component of the contract as country-wide experience with public operated transport systems indicates that they are 'notoriously bad'[29] with maintenance. Maintenance is also cumbersome and inefficient, as activities such as procurement of spare-parts etc., are required to follow time consuming purchase procedures, often marked by administrative hurdles and delays. For example, only 657 out of 944 AMTS buses were reported to be in working condition in November 2010. The rate of breakdown and accidents is also substantially high at AMTS due to poor maintenance, informed a senior official at AMC. He also stated that, unlike the ABRTS, there is no incentive for a public bus operator to maintain the buses. Furthermore, maintenance standards cannot be enforced by the public operator within the extant administrative structures. In a PPP mode, however, the contract provisions are designed to ensure high standards of maintenance. Stringent conditions of maintenance have been included in the ABRTS contract with heavy penalties for defaults. DGM (Operations), AJL pointed out that they ensure that the contract conditions are strictly enforced. According to the Municipal Commissioner and an urban transport expert, such high penalties are rarely found in Indian urban transport systems.

[29] Stated by an urban transport expert, who is associated with ABRTS and has worked on its contract provisions.

The ABRTS bus operator stated that he has two vans which take care of minor repairs on the route itself. In case of major breakdown, he arranges for replacement buses so that passengers do not suffer any inconvenience in case of minor faults or major breakdowns, and are assured bus service as per schedule. The DGM (Operations), AJL corroborated this. He noted that '*two vans of maintenance... immediately rush to the venue, and repair it. If it is not repairable, then another bus is sent and the passengers are shifted there'*. My focus group interviews as well as interviews with the selected commuters pointed out that in AMTS there is no assurance of a replacement in the event of any breakdown. Passengers are left stranded and have to search for alternative means of private transport or wait for the next scheduled bus, at times indefinitely.

The concession agreement stipulates allocating the risks associated with accidents also to the BRTS operator. Such risks carry substantial financial and other implications such as court cases, officials at AMC observed. For example, AMTS is saddled with many court cases relating to accidents. In ABRTS, as the operator has to deal with these liabilities, the drivers have been trained to be more responsible while driving. This has ensured better safety of the BRTS passengers as compared to passengers travelling in AMTS buses.

10.3 Standards of performance

According to the bus operator, officers at AJL and transport experts, parameters for performance, standards of service, and penalty clauses are 'stringent' in ABRTS. The penalty deduction is on kilometre basis which reduces the chargeable kilometres 'severely', as mentioned by the bus operator during an interview. The operator also stated that he is given a bus schedule which he has to meticulously operate. Failure to meet schedules, performance standards and maintenance parameters attracts heavy penalties. Rude behaviour by drivers also attracts a penalty. According to one of the respondents, a transport expert, such penalties are rarely included in the contracts in India as it is generally perceived that they are easy to be incorporated in contracts but are difficult to enforce. The bus operator stated that penalties are strictly enforced in case of ABRTS. In case of AMTS, where some buses are run by private operators, the penalty clause has not been included in the contract as the revenue model is not the same. The bus operator in AMTS is paid INR 25/km, but he does not have to maintain high standards of service as in ABRTS, nor does he build the buses. In ABRTS, the bus operator said that he has to maintain 92-94% up-time with initial lot of 50 buses. He

decided to increase this to 98-100% up-time and inducted five more buses. He pointed out that with this extra investment he has increased his returns on investment with better services. When the researcher met the bus operator (in February 2011), against a need of 90 buses he was managing with only 53 as the others were ordered but had not arrived. He still registered 246 km/bus/day whereas in urban conditions generally it is about 200-210 km/bus/day. He could do this with efficient scheduling of buses and incentivising the drivers. He has started various incentive and bonus schemes for the drivers to encourage them to drive safely and reduce their turn-over. Although the contract does not require it, he has engaged an agency which provides feedback on the driving and behaviour of drivers to him. The supervisor from the company travels incognito in ten buses everyday and reports to the operator. This helps him to monitor the driving and behaviour of drivers. Additionally, buses are cleaned twice daily even though the contract requires him to clean them only once. Any complaint of the drivers is personally attended to by him which has ensured quality services, the operator noted.

10.4 Risk of manpower

The concession agreement has also allocated risks of manpower management to the bus operator. Respondents within AJL observe that this has significantly improved the services. Although capital costs in BRTS are relatively higher than AMTS, benefit is brought about by saving on manpower and better services. As informed by the Deputy Commissioner (DC) looking after AMTS services, AMTS has about 6,000 staff with two labour unions. It deploys about 7 persons/bus (drivers, helpers etc). Whereas in BRTS, it is 3 persons/bus: 2.1 drivers/bus, as there are 10% additional drivers; 0.5 persons for maintenance/bus; and 0.4 is the office staff including supervisor, manager, general manager, etc. A driver in the government is paid INR 15,000-20,000 per month whereas the bus operator can hire a driver at INR 5,000-7,000. Despite these salaries, performance cannot be enforced in AMTS due to administrative structural constraints, stated the DC. Similar evidence is presented by Donahue (1989) from US local municipal services where the employees are better paid and less productive as compared to their private counterparts. Moreover, liability of staff with the public sector remains even after their retirement in terms of pension, gratuity etc. The initial capital expenditure, salaries and other benefits to staff, and cost of repairs and maintenance result in the operational cost of AMTS to be about INR 50/km, whereas it is about INR 36/km in ABRTS, according to the DC.

Respondents within AMC, AJL and CEPT observed that manpower recruitment and management for efficient bus service is a tedious task. These are observed to be largely responsible for inefficient operation of public transport systems. In ABRTS, this risk has been passed on to the bus operator who handles recruitment, training, discipline, timely reporting for duty and other activities of the drivers. DGM (Operations), AJL narrated an instance where once some drivers were driving slowing which resulted in bunching of buses at the stations and caused inconvenience to the passengers. On reporting this to the bus operator, he himself came to the bus station and removed the erring drivers. This sent a strong message to the drivers and the behaviour was not repeated thereafter. Removal of errant manpower cannot happen in the government without undergoing an elaborate process of serving them a show-cause notice, charge-sheet etc., as they are protected by government laws and regulations. Other studies (Ostrom, 1996) have also revealed that the public sector typically relies on weak incentive systems that do not encourage staff performance and rarely promote innovation.

11 Structure and governance of PPP within ITMS (Intelligent Transport Management System)

In addition to bus operations, management of the bus service through employment of intelligent technology is found to be crucial for efficient functioning of BRTS. My respondents from AMC, CEPT, ITDP and the ITMS service provider informed me that similar to bus operations, a long-term concession agreement is signed with the ITMS service provider. This covers activities such as Automatic Fare Collection System (AFCS) including electronic ticketing and smart-card system, Automated Vehicle Locating System (AVLS) including GPS based control system with electronic tracking and monitoring of buses, and Public Information System (PIS) within the buses and stations through digital turnstiles and recorded audio messages.

My respondents also mentioned that while ABRTS has been successful with the bus contract and bus operations, same has not been the case with ITMS where it has been mired in multiple bidding, legal hassles and change of service provider.

11.1 Contract structuring and management for ITMS

My interviews with AJL officials, project head at ITDP, representatives of the former ITMS service provider, M/s Kaizen, and an urban transport expert, furnished me with information on the partnership for the ITMS services. According to my respondents, the primary reason for the ITMS contract not going the same way as the bus contract is its wrong structuring. ITMS is a differentiated service and requires expertise in two main areas: fare collection and fleet management. As these services are highly specialised, even internationally there are few companies which provide both; in India there are no agencies which specialise in these services. Hence, as ITDP stated they had advised AMC to unbundle the services to ensure efficient management of BRT services. However, AMC bundled them during the first iteration of bidding excepting the bids for turnstiles that were separately invited, although it comprised merely 5% of ITMS services. In addition, all responsibilities regarding procurement, management and operation of hardware and software were passed on to the private partner. The tender therefore failed to elicit any response from the private sector.

According to ITDP, it again advised AMC to unbundle the fare collection and fleet management services. AMC however unbundled the hardware and software parts this time, while the turnstiles and other services were clubbed together. While the hardware was to be provided by AJL, its operation and maintenance was to be done by the private agency which was to be paid on annuity basis for its services. According to my respondent at AJL, this was done so as to avail of the component in JnNURM which provides funds for hardware; and removing hardware from the deliverables was presumed to reduce costs to be incurred by the private agency. ITDP notes that this was flawed unbundling as although the private partner did not bring in the hardware, the risk of operation, and management of the ITMS along with ensuring a stipulated uptime (which critically depends on the hardware) was allocated to him.

M/s Kaizen was selected for various ITMS services after the second round of bidding. As it did not have any expertise in AFCS, it tied up with ERG, an Australian company specialising in this service. It still did not have any expertise or experience in fleet management and could not tie up with any international partner for support. With both these activities bundled together, Kaizen failed to meet the required outcomes, analysed the ITDP project head.

Relations between Kaizen and AJL started deteriorating from first few months of operations. According to AJL, the contract broke down as Kaizen defaulted on its contact conditions and did not implement the AFCS which was its responsibility. According to Kaizen, AJL proposed to buy the AFCS software from ERG, on the pretext of getting it at a cheaper rate. They however never bought it, nor did they allow Kaizen to buy it. Hence the automated fare collection system, which was argued and publicised to be one of the strong elements of ABRTS, did not get implemented. Kaizen however continued to take care of computerised ticketing, PIS and control room operations till March 2011 when a new service provider was engaged through re-bidding.

11.2 Technical causes for governance failure

Experts at ITDP are of the view that fleet management and fare collection ideally should not be bundled, as fare collection is the more critical component and forms front end of the system. Fleet management, although important for efficiency of the system, does not form a critical element. A weak fleet management would result in bunching of buses but may still not affect the operations as adversely as a faulty fare collection system. According to ITDP, there were deficiencies on part of both AMC and Kaizen as this is the first time ITMS on such a scale is being used in BRTS in India. The contract was technically too complicated to be effectively handled by AMC alone. It however did not adhere to the expert advice offered by ITDP, whereas Kaizen lacked core expertise in ITMS.

Kaizen noted that the contract was again broken when Gujarat Informatics Petroleum Limited (GIPL), a government owned company, was engaged to run the fare collection on some bus stations when the second phase of BRTS was started, while Kaizen continued to provide these services for the first phase. Thus while some stations were being handled by Kaizen, others were looked after by GIPL. This prevented integration of the system as both were using different servers and information systems and submitted separate traffic and revenue reports to AJL. Thus, integrated analysis could not be done due to lack of comprehensive data. This information was corroborated by my respondent at GIPL. According to Kaizen, GIPL was appointed as the technical performance auditor for Kaizen’s operations in the first phase and ideally should not have been appointed for the same services in the project. AJL states that Kaizen’s failure to provide the needed services necessitated this move. As there was no service

provider, they could not terminate Kaizen's contract as it would have jeopardised the operations. They continued as their contract was not terminated. Although they registered a protest with AJL but their letter was not acknowledged by AJL, according to Kaizen.

Kaizen also claims that contract management by AJL was flawed. While there were discussions and negotiations with bus operators before and during the bidding to engage with them during the process of decision-making, such was not the case in ITMS. Moreover, according to Kaizen even after the contract was awarded to them they were called for negotiations to slash the quoted amount which is unprecedented and irregular. They also note that heavy penalties were levied without any justification. AJL however claims that the penalties were justified as the stipulated services were not provided by Kaizen.

11.3 Administrative causes for governance failure

In addition to the technical aspect of structuring of contract, this research found that there is an administrative dimension to this. According to my respondents within AMC, AJL, CEPT, ITDP, the transport expert, the bus operator and ITMS provider, during the planning phase decisions regarding several fundamental design and operational aspects, which would determine performance of BRTS, were being taken jointly by the then Municipal Commissioner and the then Director of AJL; and the latter was responsible for most of these decisions as she was heading AJL. She would grasp the finer points of the discussion and was fast in decision making. She was however transferred out of AJL overnight and all decisions were subsequently taken by the Municipal Commissioner.

It was during this time that CEPT broke away from ITDP (according to an ITDP respondent, they were 'fired'), the ITMS tender got wrongly structured in absence of ITDP and Director (AJL), and even Kaizen experienced almost hostile behaviour in its interactions with the lower staff at AJL. Some respondents hinted at 'professional rivalry' between ITDP and CEPT, and mounting differences between the then Municipal Commissioner and AJL chief which could possibly be the cause of the transfer of the latter. My respondent at ITDP mentioned that as they were perceived to be closer to the then AJL chief, the change adversely affected them as well.

12 Analysis of relationship between the partners

PPPs are argued to be '*relational*' contracts based on trust and reciprocity; this feature theoretically distinguishes them from '*contracts*'. In ABRTS, this research found a sharp distinction in the relationship between AMC, the dominant partner, and its primary non-State partners which include CEPT, the bus operator and ITMS service provider.

12.1 AMC's relationship with CEPT

The AMC-CEPT partnership has been a crucial factor in success of ABRTS. According to respondents within AMC, AJL, CEPT, ITDP and external consultants, the process of planning and designing ABRTS has been a collaborative effort of AMC-CEPT-ITDP team. Decisions regarding selection of median route, initial stretch of corridor, design of bus stations and buses, framing of contracts, tendering process, etc., have been collectively taken. Long deliberations and brainstorming sessions, extending into late hours after office and on holidays, were held to resolve various fundamental and structural issues. According to CEPT team-leader, high degree of autonomy was provided to them in framing the bidding documents. Meetings were both formal and informal depending on the need; CEPT and the technical experts were provided complete freedom to put forth their point of view and arguments. Decisions were communicated to the private partners by AJL or by CEPT, without any red-tape. The practice of weekly meetings with CEPT and the private service providers, started by the former Municipal Commissioner, is continued.

The private partners have appreciated this mode of working as it is fruitful, saves time and builds trust and confidence at both ends. As a respondent noted, CEPT has been working as an extended arm of AMC in all technical matters. This is largely credited to working styles of former Municipal Commissioner and former Director (AJL), who co-opted CEPT in all major consultations when the project was being conceptualised and implemented. According to the CEPT team-leader, technical expertise of CEPT and its past relations with AMC on various projects, such as the Sabarmati riverfront project and assistance for rehabilitation of earthquake victims, may be contributing to this amicable working relationship. The CEPT team-leader stated that CEPT has not behaved like a typical private sector consultant that sticks to terms of agreement and delivers precisely according to the brief. Being an academic institution it is interested in

expanding its horizons and is not wary of experimenting with innovative strategies, which he notes not many private sector agencies are ready to do because of the high risks involved with such projects. He also stated that unlike the private sector agencies, CEPT is not bothered about its consultancy fee which is much less than what a private consultant would charge for similar work.

12.2 AMC's relationship with bus operator and ITMS provider

Relationships between AMC/AJL and its two main private partners, the bus operator and ITMS service provider, do not follow similar patterns. The experience of the bus operator has been quite different from that of the ITMS service provider.

12.2.1 Relationship of AMC with the bus operator

In case of bus operations there has been satisfaction on both sides. Respondents within AMC, AJL, CEPT and ITDP and private experts are unanimous in their view that the bus operator is '*the success factor of BRTS*'. According to experts, the limitations and deficiencies of AMC/AJL and less-than-satisfactory performance by the ITMS provider have been shielded by the efficient bus operations. Qualities of the operator to deliver more than required; not sticking to the official brief, but innovating with his responsibilities; his spirit of entrepreneurship (he agreed to build the 900 mm buses when other well established private companies refused to); and readiness to learn[30] have been appreciated within both AMC and AJL. This has significantly shaped the relationship between AMC/AJL and the bus operator.

The bus operations have been satisfactory primarily due to the personal attention given by the operator. According to him, he does not believe in formal administrative relations and does not mind whether the decisions are handed to him by AMC or CEPT as long as these are implementable within the framework of the contract. He states that many a time crucial decisions are passed on to him through the mobile phone without any formal paper-work.

Qualities of the bus operator are reciprocated by AMC and AJL who treat him as a *partner* and not as a *contractor*. According to AJL and CEPT, his input is considered critical in deciding technical matters such as specifications of air-conditioned buses,

[30] The bus operator had no prior experience in running bus transport services. He operated a truck company and was wary of doing any business with the government due to fear of red-tape and corruption.

scheduling of buses etc. He also provides feedback on passenger-traffic during rush hours and any change in the traffic pattern, which has helped AJL to provide better services. Instead of penalising him for the occasional errant behaviour of the drivers, AJL prefers to discuss the issue with him to understand its causes. He is also quick to take remedial measures, which have enhanced the service quality, stated my respondents at AJL.

12.2.2 Relationship with ITMS service provider

My research reveals that the experience of ITMS service provider has, however, been different. Although the tendering process has been found to be transparent, the contract management had many flaws. Structuring of the contract and its subsequent management strained the relationship between AMC/AJL and Kaizen. According to a Kaizen respondent, after the Director (AJL) was replaced and ITDP 'removed', their relations with AJL ceased to be cordial. Their payments were delayed and they have had to pay 'rents' at lower levels in AJL to expedite them. Respondents at Kaizen however mention that the senior management at AMC and AJL is not corrupt. They tried to meet the Municipal Commissioner several times to explain their case, but could meet him after a long wait. According to respondents at Kaizen, ITDP had superior expertise in ITMS systems due to its worldwide experience, and after its exit the ITMS contract suffered as CEPT did have adequate clarity about the technical requirements which resulted in several changes even after the contract was signed. The bus contract on the other hand was drafted after sufficient deliberation between professionals, experts and the bus operator.

My respondents at Kaizen termed the relationship between the public and private partner to be worse than that of '*client and contractor*'. It was more akin to that of '*master and slave*', according to them. They mentioned that AJL applied stringent penalty clauses in an arbitrary manner without fully understanding them. AJL, however, maintains that Kaizen failed to deliver as per terms of agreement and attracted the penalty. Experts opine that Kaizen was a weak partner in terms of experience and expertise.

The ITDP project-head opined that the failure of the ITMS contract to meet its envisaged outcomes may be attributed to lack of required capabilities on part of both the public and private partners. While Kaizen lacked technical expertise, AMC/AJL

suffered from capacity issues in contract management. The contract possibly got caught in an ego clash between different bureaucrats as anecdotal evidence hints at its possibility between the former Municipal Commissioner and the former AJL Director, and between technocrats and bureaucrats.

13 Issues concerning management of AJL (public partner for BRTS PPP)

The structuring of PPP of ABRTS has helped to ensure that AJL is the dominant partner in the partnership. Issues concerning its structure and performance are therefore considered important determinants of efficient working of ABRTS.

13.1 Structure of the AJL Board

My respondents at AMC, AJL, CEPT and ITDP informed me about the AJL Board.

The AJL Board looks after the administrative, financial and operational aspects of ABRTS. The city Municipal Commissioner is the ex-officio chairman of AJL Board. While the Mayor, chairman of AMC standing committee, leader of opposition of the state assembly, chairman of AMC transport committee, secretary of state urban development department, and joint commissioner of city traffic police are the members. Thus, it is found to be democratically well represented.

ABRTS is the first civic body initiative in the country where the Municipal Commissioner, a bureaucrat, is chairman of the governing Board and not the Mayor who is people's elected representative, the Municipal Commissioner said. It is against basic ethos of democracy where a bureaucrat being public servant has to be subservient to the people's representative. The AMC planning team decided to entrust administrative and financial control of ABRTS to a civil servant rather than to a political figure to provide it immunity from political changes, and possibly from political ideologies too, he explained. By creating an SPV with a smaller Board the decisions bypass the larger, more politicised board of AMC (which has the city councillors also on it) and thus are faster. In AMC the powers of the Commissioner are limited and he has to seek approval of the Board even for small matters which delays their implementation. There are more stages in the decision making process at AMC, and since councillors are involved, there are more veto points. As an expert noted, the AMC Board is a '*chaotic political thing*'. This is addressed at ABRTS by vesting all powers in the Chairman of the Board, i.e., the Municipal Commissioner.

Experts note that political interference is almost nil at AJL as compared to AMTS which has city councillors on its managing committee. This has provided professionalism to functioning of AJL. It is commonly said for AMTS that even if a disciplinary notice is issued to a bus ticket collector, an MLA (Member of Legislative Assembly) or MP (Member of Parliament) may take up his matter with the AMTS head.

There have been several cases in India where populist projects initiated by ULBs are discarded mid-way in wake of change in the political leadership. The then Municipal Commissioner stated that one of the challenges he faced was to assure the city people that ABRTS will not be left unfinished. Formation of AJL helped to provide this assurance to the people and service providers.

13.2 Operational autonomy of AJL

This research found that although decisions at AJL bypass AMC Board, it does not have the level of autonomy which can give it independence of decision making. It is removed from ambit of AMC General Board but not from AMC itself. Some experts feel that the company is managed more like a government department where decisions are largely taken by the Chairman, who is the Municipal Commissioner.

There is a felt need for a full time Managing Director at AJL who can independently manage the day-to-day operations, with the Chairman and the Board providing overall guidance. After the exit of the former head of AJL, a deputy commissioner of AMC is currently officiating as Executive Director. He states that he is able to give only about an hour every day to ABRTS. Experts and academicians aver that in the long run AJL will need a head that is independent of AMC and is dedicated to activities of ABRTS.

It is observed in India either the system is institutionalised or is person specific; chances of the latter are more. Experts note that as ABRTS is a new system, it is advisable in the initial phases to have it managed and run by a mature and capable bureaucrat who can handle issues of governance and project management till AJL and the private partners are adequately experienced to understand their own responsibilities. On the other hand, some respondents are of the view that with a strong chairman who is also the Municipal Commissioner, independence available with Executive Director of AJL, who is also a Deputy Commissioner and reporting to the Commissioner, is limited. This arrangement does not seem to augur well for autonomy of AJL.

13.3 Financial autonomy of AJL

An additional matter of concern is the limited financial autonomy of AJL. JnNURM is funding part of BRTS currently, which shapes the relationship between AMC and AJL as the JnNURM funds are released through AMC. It is felt that as BRTS matures and is financially more sustainable, AJL may be made more autonomous to handle its own affairs; although in its current form it is not strong enough to be made completely independent, as it is not operationally stable. The SPV format, that allows it more freedom in matters of decision making, ease of financing through AMC's assistance and focussed attention on service provision, seems to be working satisfactorily. Experts who favour a more distanced operation of AJL cite examples of the Hong Kong metro and Queensland charter for SPV that clearly state the duties and responsibilities of the SPV. The difference between these and AJL is that these organisations have matured over a period of time.

13.4 Staffing issues of AJL

AJL is presently working with limited staff strength. In November 2011 the total staff strength was five of which two were on deputation from AMC. The PPP mode has been argued to be one of the reasons for the low staffing. As most of the tasks are done by the private agencies, AJL has a handful of staff for supervision only, stated the DGM (Operations) at AJL. However, limited quantum of human resource is found to be adversely affecting monitoring of various activities of ABRTS. Additionally, as a majority of the staff is from AMC, culture of working at AJL tends to be similar to a government department rather than a company.

To address the issues of shortage of manpower, AJL recruited four lower level supervisory staff on contract basis in November 2011, when I was collecting my data. However, it has shown no visible attempts towards building capacity of its people. It still lacks middle and senior level technical experts. It thus needs to be staffed with professionals with experience in urban transport, route management and bus scheduling, transport management, contract management, finance and legal issues. CEPT is performing these tasks as of now. One of the prevailing views is that recruiting experienced manpower at market rates would be expensive for AJL in its current financial condition. However, long-term hand-holding by CEPT may affect AJL's

sustainability, this research argues. When the entire route is ready for operation, short-staffing at AJL may adversely affect the BRTS efficiency.

My research revealed that all members on AJL Board are from the public sector. There is no independent director from the private sector although the rules of business for AJL provide for this. There is a provision for two independent national and state level experts on AJL Board along with representation of private partners. Till the writing of this report, these posts remained vacant. This may perhaps be due to the hegemonic tendency of the bureaucrats who are generally known to prefer to keep all such newly formed bodies within their ambit by restricting outside representation. Such a tendency has been observed in various state governments while constituting Boards and Corporations which are formed in order to bypass the departmental rules and regulations to expedite decision making and provide the new organisations more autonomy. Some respondents were of the view that Ahmedabad has many prominent businesspersons and leading architects and designers, some of whom could have been made members of AJL Board. This would have enhanced the appeal of BRTS. As informed by a respondent, in case of AJL Board, even the CEPT team-leader, who is an integral part of BRTS, is not invited. The respondent noted that AJL Board meetings are reported to be more in the nature of '*record-keeping exercise*', while the weekly meetings of the Commissioner are a '*fairly serious business affair*' where private agencies, transport experts and consultants are invited and crucial decisions get taken. This however indicates the dominant role of the Municipal Commissioner in running of ABRTS as compared to the AJL chief.

14 Uniqueness of the PPP model of ABRTS

Several features of generally accepted PPP model in highways are due to the more prominent role of the private partner in terms of the resources it brings, primarily private capital; risk sharing; long-term association with the private partner who designs, constructs, operates and maintains the service; and collection of revenue by the concessionaire through tolling activities which he may share with the government depending on the revenue model. Role of the government is argued to include policy making and structuring the PPP, selecting the private partners, pre-construction activities like land acquisition, utility shifting and getting necessary clearances. During the construction stage, the government agency coordinates with the private partners,

supervises and monitors the works, and regulates the partnership. The concessionaire is responsible for operation and maintenance of the service.

While still retaining some features of a standard PPP model, this research found that the Ahmedabad BRTS has brought in several innovations that have made it distinct, and helped to enhance its appeal and acceptability within the users. These features are discussed in the following section.

14.1 Mode of involvement of private agencies

In India, urban infrastructure as a whole is not amenable to commercial pricing models due to which private interest in them is low. For example, PPP has not been successful in water supply and electricity distribution in cities. These utilities have traditionally been provided by the State and have been heavily subsidised, often due to political reasons. Bringing in private participation would entail higher user charges which have still not been accepted by the people (Maitra, 2001; Jha and Siddiqui, 2000). Moreover, the financial models arguing for full cost recovery (which is extremely poor) are found to be divorced from the ground realities, and risks are disconnected from social and political compulsions of planning (Ranganathan *et al*., 2009). Implementing PPP in urban infrastructure has therefore been more difficult for the authorities. When one studies PPPs in road transport sector, comparison between highways and urban transport is not considered fair because the latter is found to be relatively more complex due to its contextual nature of being in an urban landscape. The inherent features of urban infrastructure, such as non-excludability, inelastic price demand, huge capital investments with long gestation period, determine the financing models to a large extent. Traditionally these have been funded by loans and grants provided by central and state governments, which was later expanded to borrowing from financial institutions (Bagchi, 2001). Comparatively, roads outside the city do not have to deal with complexities of this nature and scale. Moreover, it is difficult to toll city roads in the same way as highways (unless they are expressways) as the revenue models are weak. The number and nature of urban utilities that have to be managed during road construction are more and diverse; and widening of city roads cannot be done as easily

as highways due to dense land-use patterns[31]. Moreover, PPPs in highways are the result of many years of experience which is lacking in case of urban transportation.

Another crucial factor why PPPs have not taken off in urban infrastructure is that the capacity to structure and manage these projects is found to be lacking within most ULBs in India. For example, although AMC would want to have PPP in many other areas, the organisation does not have double entry accounting. There were efforts at behest of the World Bank in 1990s in this regard but no significant difference could be made due to the limited scope of the project (Joshi, 2003). Hence, even if there is political and bureaucratic will to adopt PPPs in urban infrastructure, chances of success are constrained by the limited capacity of the public bodies. Thus what results is some degree of private sector 'involvement' which cannot be compared with the models of PPP in highways sector. The nature and scope of such involvement may differ across various ULBs depending on diverse contextual variables.

What is different about ABRTS is that although it does not follow a theoretically prescribed model of PPP, the project has been planned, designed and executed with a lot of private sector involvement. While AMC collaborated with CEPT-ITDP for planning and structuring the project to make up for its lack of in-house capacity, partnerships with the private agencies have been preferred for two important activities, i.e. bus operation and ITMS. As analysed in one of the preceding sections, these partnerships depict many features of classic PPP modes. The partners are engaged through a long-term concession agreement detailing the performance standards and sharing risks and responsibilities. Several risks, such as the revenue or market risks, are retained with AJL as the service provider is not competent to bear them, while many other manpower, operational and design risks (which are found to result in sub-optimal operation of traditional public transport systems) have been transferred to the private partners.

14.2 Partnership between a civic body and an academic institution

Urban bus-based mass transit systems are a new concept in India. During its initial phase of exploration of capability in the market regarding preparation of DPRs, the state government realised that the private agencies worked within various limitations and could not build in the social and economic variables which are crucial components of such planning. As stated by my respondents at GIDB and CEPT, the first consultant,

[31] In Kerala, widening of highways has been stalled at various places due to its high population density.

M/s Louis Berger, was engaged for a sum of INR 60 mn which is a fairly large sum by prevailing market standards. It suggested combination of Metrorail, some sort of bus-way and cycle paths. The proposals did not include a BRTS. The consultancy ended mid-way as there was difference in expectations regarding the scope of the assignment between the government and the consultant. While the government was looking for an integrated transit systems model, Louis Berger proposed a Metro for 10 km which does not suffice for the city's needs. The proposals were sketchy without any workable plans. The government therefore decided to engage an academic institution, CEPT, which had experience of working with the government on its various urban development plans and which was not strictly '*private*'. Moreover, the CEPT team-leader pointed out that CEPT got interested in a long-term association on the project as such experience would enrich its own knowledge-base in urban transport planning and operations. Being an academic institution, it has brought in talent from its faculty and students that has provided many innovative aspects to the project. As noted by an officer of AMC, unlike private consultants, CEPT is not very demanding in terms of consultancy fees. It has accepted the fees offered by AMC. Moreover, it went much beyond the brief given to it under the MOU and explored various dimensions of planning and designing the BRTS. For example, the monthly surveys are conducted by CEPT as part of its academic activities and are not charged to AMC. The private consultants, on the other hand, have been generally observed to be wary of experimenting and innovating with such projects where the risks are yet not fully explored by them, and stick to the decided brief.

AMC's partnership with CEPT-ITDP to address its capacity deficit partially explains why Ahmedabad is among the few cities which has received highest share of funds under JnNURM (Kundu and Samanta, 2011), while many states such as Goa, Mizoram, Nagaland, and Sikkim have not been able to procure and utilise the JnNURM funds. Primary reason for this has been identified as 'the lack of sufficient capacity at the state and ULB level to develop plans, identify project priorities, raise matching funds and execute projects' (Government of India, 2010c: 397).

14.3 State funding of the project

A crucial difference between a theoretical PPP model and ABRTS emerges from the funding of the project. While in most PPPs the private sector brings in financial resources, which is argued to be one of the defining features of a PPP, ABRTS is largely funded by public funds from the central and state governments, and AMC thus avoiding

the dependence on private capital. The bus operator has brought in his resources which have a financial component, but he is not contributing towards capital expenditure for the project. This difference has been dictated by the nature of revenue models existing in urban infrastructure in the country which do not encourage private investment as there are no assured returns on such investment. Moreover as such projects are fairly new in the country, models to involve the private sector are still evolving. As these projects mature with more experience gained by both partners, private financing may become a significant feature of such partnerships. At present, only the State is found to be in a position to invest in these projects.

Projects like the ABRTS negate the claims of PPP advocates that such modes are primarily adopted to bring in private capital as governments suffer from resource crunch. They demonstrate that PPP mode may still be relevant even when the public partners do not have shortage of financial resources. The ABRTS has demonstrated that, especially in low-income countries, the State is more suitably located to champion such projects and structure them so as to involve the private sector in diverse ways but not necessarily to attract private capital.

14.4 Dominant role of the State agency

The preceding section also leads to the argument for a leading role of the State agencies in delivering infrastructure services (especially in low-income countries) in areas such as in urban transport where private capability is found to be lacking and incentives are not adequate for private capital. In addition, the urban transport sector is not characterised by the highly capitalised companies with large financial resources as found in highways sector. It appears that in services where the scope is not well defined and is still emerging, the private sector is not very confident of delivering. Director (JnNURM), AJL pointed out that '*[T]he private sector generally gets into sectors which have an assured revenue/profit stream. In many of the functions of the BRT, the output though, sure was not quantifiable. So it was difficult to get them interested in one big whole [project]*'. Moreover, the fear of failure with the first project which would tend to affect their market value, presumably prevents them from experimenting. Furthermore, the private sector usually gets interested in a service where there are reasonably assured returns on their investments. In BRTS, since many of the tasks are not quantifiable there are unforeseen and unpredictable risks. In such cases where there is yet no precedent, the State agencies are in a better position to pioneer such projects. When the private

capacities have been developed with more such projects, the role of the State can be redefined in terms of structuring, administering and monitoring the projects.

The competency of the State is derived from the legal sanction and social mandate that it possesses. For example, only the AMC is legitimately competent to remove the encroachments, shift the temples and other religious structures which are located in the way of the BRT corridor, and effectively shift the underground utilities. Some of these issues, such as removing encroachments and shifting religious structures are known to be socially and politically sensitive issues and are likely to become grave matters of concern if not properly handled[32] and thus cannot be entrusted to the private partners.

Moreover, when proponents of the market-based approach advocate private participation in almost all services based on the premise of enhanced efficiency, they seem to leave many other alternatives unexplored, such as the possibility of the State agencies to take up the lead role in areas where the private sector is still not adequately efficient. This argument implying 'State failure' is seemingly narrow and generalised. Although there is private participation in ABRTS, its nature and scope has been determined by the contextual realities of the market and the implementing agency. In the days to come the mix of responsibilities taken up by the two sectors may perhaps change, although the speed of change may be dependent on the demand for such services in other cities and the growth in capacity of both partners. Had such projects done well in other cities prior to Ahmedabad, possibly the capabilities of private agencies in the needed services would have been adequately built. In that case tenders for some services (such as pay-and-park and foot-over-bridge) would not have to be re-bid so often.

By taking the leadership in developing the project, AMC has demonstrated that government agencies and urban local bodies are more suitably located to initiate these projects and explore setting up new structures of administration and governance. AMC demonstrated shift to a 'network' mode of working. From being the provider and operator of almost all urban services, it acted as the *lead partner* guiding the project through a decision-making process which was not typically hierarchical and bureaucratic, and forging coalitions with non-governmental actors. Rather than operating the services, it took on a more active role of championing, structuring,

[32] Gujarat, more specifically Ahmedabad, has a history of communal tensions. Gujarat suffered from the worst kind of riots in 2002 which had a religious hue.

administering, executing and monitoring the project. Issues such as opting for PPP in only the important sub-systems, deciding the degree of private participation that was appropriate for the main services, the kind of penalties that would ensure high service standards, and enforcing them without acting as a disincentive to private initiative can be better decided by an agency which has the people's mandate to do so. With AMC at the helm of affairs and steering the project as its *owner*, there was significant degree of consistency and predictability in the policy frameworks. Through openness and proactively sharing information on the project through its developmental phases, it demonstrated growing maturity in matters of governance and fulfilled its role of empowering the citizens while educating them about such projects. As prior scholarly work acknowledges, one of the roles of the public servants (politicians and bureaucrats) is to enable articulation of citizens' needs and preferences and to facilitate their participation in shaping public policies, which also acts as a tool to empower them (Ostrom, 1996; Thomas, 1995).

14.5 Political leadership and ownership

Strong political will and support are argued to be important elements of a BRT project (ITDP, 2007). Without these, the project is unlikely to have the required momentum and is more likely to lack the drive to counter opposition and create a support base. From my interviews with the policy makers and randomly selected commuters on the BRTS bus it was evident that the project had visible support from the Chief Minister of Gujarat who has been actively involved in its progress. He created a general climate of acceptance for the project in the city. The Director (JnNURM) at AJL noted- "*Sometimes he leads, sometimes he supports*".

International experience demonstrates that decisions like having a median route dedicated only for buses require strong political commitment, which the government of Gujarat provided in the ABRTS. This is important in view of the fact that JnNURM is a central government scheme and the implementing agency is the state government belonging to a different political dispensation. It is generally observed in India that when the governments at the national and the state levels have different political affiliation, there is a tendency on part of the state government to thwart such schemes by not cooperating with the implementation process in one way or the other. In case of ABRTS, despite the governments at the national and state following different political ideologies, the project has received political support and backing within the state and

has been deliberately showcased by the state government as its own project perhaps realising the potential of gaining rich political capital out of the project.

Respondents in AMC and AJL also acknowledged the support provided by the central government departments in guiding them through the various stages, which showed commitment on the part of central government to rise above the narrow political lines.

Although there are no reported incidents of opposition from the AMTS unions, anecdotal evidence suggests that they were aware of strong political backing from the highest level and therefore did not protest. It was a political decision to first implement the BRTS and take up the Metrorail project subsequently. In some cities, such as Pune, both have been taken up simultaneously by the ULB and have suffered as adequate attention could not be been given to either, in terms of preparation of project reports, establishing 'buy-in' with the city people and understanding transport needs of the city (Sreenivas, 2011). Apprehension regarding success of ABRTS was strong within the city in wake of failure of Delhi BRTS and hence a strong political backing was required to instil a sense of urgency among the various agencies for its successful implementation. According to my respondents at AMC, CEPT, GIDB and ITDP, the Chief Minister of Gujarat was known to take personal interest in the progress of BRTS and also travelled in it several times with the passengers to judge their response and project his involvement with it. One of the reasons for the failure of Delhi BRTS has been argued to be the lack of visible political support from the state government, with 'too many masters but no owners'.

14.6 Bureaucratic leadership

This research also argues that along with political leadership the project benefited from committed bureaucrats. The former Municipal Commissioner was widely seen as the project's architect and AMC as owner of the project. It was in the forefront of designing and executing BRTS in a strong way which was not the case in Delhi BRTS. In case of Delhi BRTS, many agencies were at various points of time involved with its execution, but it was not owned by any one agency. The nodal agency, Delhi Integrated Multi-Modal Transit System, got associated with the project at a much later stage after the pilot project was designed. In case of ABRTS, AMC coordinated with various departments of state and national governments for clearances, permits etc. right from its inception. This was possible as the then Commissioner enjoyed an unbroken stint from

May 2006 to June 2011, which is the longest tenure for any Municipal Commissioner, the average being about 3 years. Following Hardy *et al*. (1992), it appears to be the case of the right person at the right place at the right time. The Director (JnNURM) observed that *'[W]hen different authorities are taking care of the various utilities there are difficulties faced in coordinating with these various bodies, due to their goals not being aligned'*. Very often in India the bureaucrat who is leading such projects, which are argued to need personal leadership, is transferred midway which proves to be detrimental for the project. According to a respondent, urban infrastructure projects such as the BRTS need 'champions' to own and guide them. The political dispensation believed in the leadership of the Commissioner and supported him. This helped him to garner support of AMC Board members. Project heads at CEPT and ITDP who have worked with him on this project pointed out that he sorted out hurdles with other state departments to expedite progress of BRTS. He gave a free hand to the designers and consultants to structure the project professionally keeping political interference to the minimum. His image of a non-corrupt taskmaster, who is focused on the outcome without undue attention to bureaucratic red-tape, seems to have benefited the project by infusing confidence among the private partners. It is felt by most respondents that it was the leadership which ensured the tendering process to be clean and transparent. It was during his tenure that AMC initiated several projects of urban development, and won 14 national and international awards in urban housing, slum networking, water projects, urban transport, innovative infrastructure, etc. Ahmedabad is one of the few cities to grab 34 urban projects worth INR 29.14 bn under JnNURM during his term. AMC was the winner of the national award for best mass transit system in 2010 and the '*Nagar Ratna*' in 2011.

Institutional leaders form a critical resource of an organisation as they define and formulate its vision and mission, and its distinctive identity and competency (Selznick, 1957). The Commissioner monitored the project minutely and very closely. According to my respondents among the service providers and the managerial staff at AJL, he would often pay surprise visits to project sites early in the morning. These visits and his sharp criticisms kept the field officers on their toes. Details of number of passengers travelling every day on the buses on different routes, revenue collected, buses running, number of journeys performed, distance covered, income per bus and per passenger, passenger per km and passenger per trip, were sent to him by the field officers through

email and mobile phone messaging (SMS) every day. The Municipal Commissioner said:

'Everybody, whoever is working in the BRTS, they give me a SMS in the morning, whatever role they have they have to send me an SMS in the morning and they have to send SMSes to all the concerned in the morning- that what kind of situation, if any kind of problem, if anything is going wrong, if any repair is needed, somewhere some problem is there, what kind of problem they are facing, whether buses are coming on time, whether the schedule is maintained, some trouble, some problem, whatever problem they are facing, they have to inform the ...task force'.

Such stringent monitoring enabled timely decision-making and instilled a sense of alertness in the lower staff of AMC and AJL, and the service providers.

However, although personal leadership is valuable, it is seen that the progress and success of projects tend to becomes heavily dependent on certain key persons, whose exit adversely affects them. It may be thus essential in the larger interest of the project to move from a person-centred growth path to a more institutionalised one where institutional structures and mechanisms are built for long-term sustainability of the project.

14.7 Building capabilities of the private partners

PPPs are argued to bring in the private sector expertise and efficiency in public services. This presupposes superior capacity within the private sector vis-à-vis the public agencies. The case of ABRTS demonstrates that there are still many services in developing low-income countries where the capacity of the private sector is not developed. Hence, the same presuppositions that apply to PPPs in sectors such as highways do not fully hold here. There is a dearth of a single consortium or lead partner who may be capable of taking up the entire project for urban infrastructure. As explained in the foregoing sections, there are several risks in delivering services like urban transport that the private sector still does not seem to be matured enough to bear. As a result the tenders for many services within ABRTS had to be re-bid. In addition, only the public agencies have competence in areas such as shifting of underground utilities and land acquisition.

This research has revealed that not only are there insufficient capacities within the private sector, the PPP projects such as ABRTS may serve to build capacities in the non-State actors. According to CEPT team-leader, when they started working on the project they had some theoretical knowledge about such systems through consultancy

work on public transport systems but lacked experience as they had not worked on any such project. Association with this project for over almost six years has helped them build their capacity in diverse ways, he stated. CEPT has started a 2-year masters' level course in urban planning and transport management systems, as a result of their experience from ABRTS. Acknowledging their newly acquired expertise in this area, the Government of India has recognised CEPT as a Centre of Excellence and provided INR 100 m for the Centre. CEPT has been engaged by Surat Municipal Corporation to advise them on Surat BRTS. They are also helping Indore to restructure their BRTS (which is built on the Delhi model) on the lines of Ahmedabad model.

ABRTS has also enabled the bus operator to build his capacities as a BRT bus operator and a bus builder. This may, however, also be due to his innate quality of an entrepreneur. Both ITMS service provider and the bus operator started with inadequate capacity. The ITMS provider collaborated with an international company but was perhaps not mature enough to handle the contract efficiently and build its capacities. The bus operator on the other hand, despite having no prior experience of either working with the public sector or in bus operations, could develop his capabilities in such a way that he is unanimously labelled as 'one of the success factors' of BRTS. He has now been engaged to build 900 mm flat-floor buses for Surat BRTS and the Gujarat State Road Transport Corporation (GSRTC).

15 Conclusion

This chapter analysed the empirical findings from the urban bus-based intra-city transportation system of Ahmedabad city, being implemented by the local civic body. It is found that due to the significantly distinct characteristics of urban infrastructure in India, the PPP model for Ahmedabad BRTS, while being developed with high degree of private sector participation, does not include many features of the theoretical PPP models generally described in literature. Unlike the models followed for highways, the activities were unbundled in ABRTS and entrusted to various private agencies. This was largely due to the lack of adequate capability on the part of a single private agency to take up all the responsibilities such as bus building, its operation and management, electronic ticketing and fleet management, route construction and traffic management. As the possible revenue models do not encourage private investment in such projects, the market risk regarding the revenue is retained by the public agency, while risks relating to accidents, building of buses, their operation and maintenance, and manpower

management are allocated to the private sector agencies. The public partner assumed the responsibility of acquisition of land for the bus route, shifting the utilities located underneath the road surface and coordinating with agencies within the state and central governments for clearances and approvals, as it was more competent than the private partners to discharge them efficiently.

The ABRTS demonstrates the leading role required to be played by the government in championing and financing such projects in India as the private sector is not adequately competent to do it. The project also shows that claims regarding superior efficiencies on part of the private sector may not hold good in all cases. The ABRTS has in fact enabled the private sector to build its capacities in services such as bus building, operation and management of BRTS bus services and operation of sliding doors at bus stations.

Urban local bodies in India are generally constrained by their capacity limitations to structure and manage projects such as the BRTS. The Ahmedabad city municipal body addressed this issue through innovative partnerships with different non-State agencies and various stakeholders that have resulted in several unique initiatives which have improved the efficiency and effectiveness of the project.

The following chapter analyses the empirical findings for the national and state highway PPP projects.

CHAPTER 7

ANALYSIS OF EMPIRICAL FINDINGS: HIGHWAY PROJECTS

1 Introduction

This chapter analyses the major research findings of the sample PPP projects in national and state highways to gain knowledge regarding the nature of roles of the public and private partners in these PPPs. The national and state highway projects are compared and contrasted to investigate and understand the distinct allocation of risks and responsibilities between the State and private partners in these projects. It is found that PPPs in highways in India do not follow many theoretical propositions regarding PPPs. The analysis reveals that multi-dimensional and inter-linked structures and mechanisms emerging from the context of India as a low-income developing country and covering the socio-economic, politico-bureaucratic, institutional, financial and behavioural attributes of the public and private sectors contribute to shaping PPPs in highways sector in the country.

2 An overview of modes of service delivery: EPC, Annuity and BOT

My interviews with respondents at the Planning Commission, central ministry of transport, NHAI, GSRDC, private partners and consultants of the sample projects, transport experts along with data provided by official documents and websites have informed this and the following three sections. These provide an overview of the service delivery modes in India, process of selection of private partners and brief description of the sample projects.

National and state highways in India are primarily developed through three modes: Engineer Procure Construct (EPC), PPP (annuity) and PPP (BOT). The most prevalent government system of procurement consists of the EPC or Bill of Quantity (BOQ) contracts, also termed as 'contracting' in literature on PPPs. A distinctive feature of EPC projects is that they are client-funded; the contractor does not finance the project. Payment is made after completion of the work based on a running bill. This is also known as the '*input based*' model where payment is made as per 'Bill of Quantity' of material used for construction. In this mode, the scope of work is clearly defined for the contractor; he constructs structures such as roads, bridges, flyovers, etc., for which

project designs are provided by the public agency. Responsibility of the contractor ends with completion of construction; generally a separate agency looks after repairs and maintenance. More recently, the contracts contain a defect liability period (DLP) of one to three years during which the contractor maintains the asset. Prior to inclusion of this clause, due to poor or inadequate construction material used by the contractor (ostensibly with the aim to make higher profit), services were found to rapidly deteriorate due to poor quality of work. It was also observed that as the contractor was not responsible for maintenance, he had little incentive to improve the quality of construction. Furthermore, EPC projects are generally supervised by government engineers. This arrangement has been widely criticised for rent-seeking by the engineers, and delay and slackness, thus resulting in sub-standard work. To overcome this deficiency many national and state EPC projects are engaging private supervision consultants for project management and quality control.

Roads in rural areas, and highways that are not found viable for private participation, are constructed through the EPC mode. Whether the EPC or PPP framework is to be adopted is decided by the estimated traffic growth on the highway during the next 20-30 years which is part of the project report prepared by the government. Traditionally, government engineers prepared the Detailed Project Report (DPR) containing detailed designs and drawings of the highway and associated structures. However, nowadays the government department prepares a Pre-Feasibility Report (PFR) containing only the traffic estimates, for which it engages private consultants. If the project is viable and bid as a PPP, the concessionaire prepares the DPR containing design details of the project. If the EPC mode is adopted, the DPR is drafted by private consultants. Thus in both cases, enhanced engagement of the public agencies with the private sector is observed.

The PPP (annuity) mode is mid-way between the EPC contracts and PPP (BOT) mode. This mode is adopted when the project is not viable to attract substantial revenue for the private developer on account of less traffic. The concessionaire, in this case, does not finance the project. In this mode, the concessionaire is responsible for the design, construction and quality control. He invests in the construction works and is paid for the construction cost (plus a return) on a half yearly basis. The bidder who quotes the lowest annuity is selected as the concessionaire. Moreover, he does not generate revenue through tolling. The risk associated with the revenues thus rests with the government. The government contracts out the tolling and maintenance activities to a separate private operator.

Within PPP (BOT), which is the largely preferred mode for highways in India, the concessionaire typically prepares the DPR, and designs, constructs, operates and maintains the highway during the concession period (which may be up to 30 years), after which the infrastructure reverts to the government. This is also known as the '*output based*' model as construction is based on a broad definition of scope, such as construction of a bridge, flyover, highway or expressway. In this model, when the developer finances the project and does not share the revenue with the government, the shortest concession period is used to select the concessionaire. Alternatively, he may seek grant from the government, in which case the lowest grant requested is the deciding criterion. For highways which are estimated to carry heavy traffic, the developer may pay upfront premium (also called 'negative grant') to the government instead of seeking a grant or quoting the shorted concession period. The bidder who quotes the maximum premium is awarded the project. The concessionaire does not share the revenue with the government as he has paid a premium upfront.

In case of national highways, the central Ministry of Road Transport and Highways (MoRTH) decides whether the highway is to be developed within EPC, BOT or annuity mode. Prior to 2009, highway projects were bid as a BOT if they were assessed to be commercially viable for a PPP. The annuity mode was preferred when it was not substantially commercially viable. Whereas the EPC mode was adopted when no interest was evinced by private sector, with approval of the CCEA (Cabinet Committee on Economic Affairs). This process took several months and presumed that BOT was the only mode for development of projects, which could also be developed under EPC or annuity modes. For example, several highways with traffic density less than 5,000 PCUs (Passenger Car Units) were developed within the BOT mode. The lengthy process of the 'waterfall model' resulted in poor or no response from the market. The central government therefore set up the high-powered B. K. Chaturvedi Committee on Infrastructure in 2009 to study the procurement process for highways. The committee recommended that the highway projects should be taken up concurrently under the EPC, annuity and BOT models based on the traffic density, although BOT would remain the preferred mode (Government of India, 2009).

According to a recent media report (Indian Express, 2011c), the central government decided in 2011 that 95% of national highway projects would be developed through PPP and 5% through EPC. Within PPP, 60% were to be toll-based and 35% through the annuity mode. In 2009-2010, 15% projects were developed through EPC and 85%

through BOT mode. The government is however keen to curtail the annuity mode as it is becoming a drag on government finances and escalating its debt burden. According to the report, the government made annuity payments of about INR 838 bn during 2010-2011 which is triple the value of the projects awarded under this mode. Also, the government is estimated to spend more than INR 2075 bn on annuity over the next 20 years.

Similar process of decision making regarding choice of mode is adopted by the Gujarat state government. The Roads and Buildings Department (RNBD) is the nodal agency for development of state highways. It decides which projects are to be executed within EPC, BOT or annuity mode based on the traffic estimates of the highway. Subsequently, GSRDC takes up projects which are to be developed under the PPP and annuity modes; highways under EPC are implemented by the RNBD. Currently only one state highway is under annuity mode.

3 Key partners in PPP projects

Other than the government implementing agency (NHAI at the centre and GSRDC at the state level), the key private partners are the concessionaire, the Independent Consultant (IC), consultants that prepares the PFR, and Project Management Consultant (PMC) of the concessionaire.

In addition to the concessionaire which constitutes the primary private partner, the IC plays a crucial role in a PPP project. It is engaged by the government to supervise and monitor the project on its behalf. PPP projects are found to be technically more demanding in terms of their scale and scope, and require expertise and knowledge of finance, civil engineering, project management and legal issues. As pointed out by Triche (1990: 19), ‘private sector involvement does not in itself guarantee efficiency; the role of the oversight agency is crucial’. The IC is charged with coordinating and mediating between client and the concessionaire on technical issues of design, construction and project management. It is required to be impartial and independent in its judgment based on merits of the case. It is associated with the project during its development and construction stages, and carries on for a year during the operation and maintenance (O&M) phase too. During the development stage it reviews the design and drawings for the highway and approves those with regard to structures like the bridges, culverts etc. For all cases which entail financial approval, it vets the proposal on

technical grounds and forwards it to the government agency with its comments. The IC also provides legal advice to the public agency. The regional head, NHAI said that generally the defects during construction stage surface during the first year of operation. Hence, continuity of the same IC during O&M stage provides administrative and technical ease for rectifying these faults. The payment to IC is made on a monthly basis and a part of it is generally met by the concessionaire. This mechanism is meant to ensure its impartial and independent functioning.

Additionally, agencies of the state government such as the Collector's office in the districts[33], police, fire department and highway patrol, are integral partners as the project is within administrative jurisdiction of the state. NHAI and GSRDC are required to closely work with the local district administration for matters of land acquisition and compensation, as land is a state subject[34]. The field team of the concessionaire interacts more often with the local police, fire brigade and highway patrol on issues of safety, traffic violations, accidents, and during protests or demonstrations.

4 Selection of concessionaire, IC and PFR consultant

The selection process for the concessionaire, IC and PFR consultant follows the general prescriptions of the Model Concession Agreement (MCA) formulated by the Planning Commission for national and state highways.

The MCA addresses issues such as unbundling and sharing of costs, risks, rewards and obligations between the partners, termination procedures, dispute resolution, users' interests, independent monitoring, and financial support from the government. Depending on the nature of projects, bids are invited from national or international agencies. The bidding process follows the two-bid system where the bids comprise technical and financial parts. After having been technically qualified, the agency that quotes the lowest overall cost, requests for lowest grant or offers maximum premium is chosen as the concessionaire.

Selection of the IC is through the Standard Technical Qualification Contract (STQC) where technical qualification of the bidder is generally accorded higher weight than the

[33] District is an administrative unit at the state level in India, with the Collector (also known as District Magistrate or DM) as its administrative head.

[34] Land falls under the administrative jurisdiction of the state government, under List II of the Seventh Schedule of Constitution of India. http://channarayapatna.kar.nic.in/htmls/rev/klr/Constitutionof_India 7thSchedule.pdf [Accessed 15 December 2011].

financial bids. The contract is awarded to the bidder who scores maximum on the combined weighted scores in technical as well as financial bids. This reflects the importance attached to technical proficiency of the IC.

After the project is approved by the PPP Appraisal Committee (PPPAC) of the Union Cabinet, the preferred bidder is issued the Letter of Acceptance (LOA) and given six months to achieve financial closure. This phase is termed as 'development period' and precedes the construction period. During this time he may form a consortium, which can be formed earlier too at the stage of bidding, and arranges for finance. This period gets extended at times for as long as a year or more, when project financing through banks and financial institutions is delayed. Subsequent to this stage, the 'appointment date' is fixed which marks the start of construction and concession period (inclusive of the former). Hence, any delay in the 'appointment date' effectively means a delay in start of construction work by the concessionaire. Also, extended construction period delays commencement of operations which adversely affects the revenue collection.

The development period is also termed as 'conditions precedence' stage during which both the partners meet their pre-construction responsibilities as per the Concession Agreement (CA). Typically the government has to hand over at least 80% land to the concessionaire free of any encumbrances, get the necessary administrative clearances and shift utilities from the Right of Way (ROW). The concessionaire has to carry out the necessary site surveys and investigations, prepare the design and drawings and get them cleared from the respective agencies like the Railways Ministry (in case of Rail Over Bridge), and get requisite permits and approvals from state and central agencies. The government also takes up selection of the IC during this period. Earlier, the process of selection of the IC was done at NHAI/GSRDC and the concessionaire had no role in it. Serious disputes between the concessionaire and IC were reported in some projects. One of the reasons cited was that the concessionaire found the IC to be technically incompetent and under-qualified for such level of technical inputs, and thus did not evoke professional confidence. Taking cognisance of these issues, under the amended MCA the concessionaire can now shortlist, from the pre-qualified ICs, about 4-5 agencies which they find technically competent. NHAI/GSRDC invites final bids from these selected agencies.

5 Brief description of the sample projects

Four projects have been selected for this study, two each at national and state levels, so as to enable a representative analysis of national and state level governance issues. The national highways projects are Baroda Bharuch expressway connecting Baroda and Bharuch, and the Surat Dahisar national highway linking Surat with Dahisar. The former is in Gujarat and is operational, while the latter is across the states of Gujarat and Maharashtra in western India and is under construction. Both are implemented by NHAI. The sample state highway projects are Ahmedabad-Viramgam-Maliya (AVM) linking cities of Ahmedabad,Viramgam and Maliya, which is under construction and Bhuj Nakhatrana highway, which links cities of Bhuj with Nakhatrana and is being tolled. These are developed by GSRDC. Of these projects, the Surat Dahisar and the AVM are two of the largest PPP projects being executed in the country, according to NHAI. These projects were therefore purposively selected.

5.1 Baroda Bharuch project

The Baroda Bharuch expressway is part of the expressway from Ahmedabad to Surat. It is along the crucial National Highway (NH-8) which connects the capital city of Delhi to the financial hub, Mumbai (previously, Bombay). The stretch is divided into three sections- Ahmedabad to Baroda, Baroda to Bharuch and Bharuch to Surat. The 83 km Baroda-Bharuch link was converted from 2 to 4-lane through private participation as part of the Golden Quadrilateral of NHDP. M/s. Larsen & Toubro Ltd. (L&T henceforth) is the concessionaire for this project. It is one of the largest construction companies in India and has vast experience in construction of highways, bridges and dams. This was the fifth PPP project being executed by L&T in the country, while two of the previous projects have also been executed in Gujarat.

The project was planned within DFBO model. The concessionaire was selected in December 2006 and appointment date was 7 January 2007. The construction period was 30 months and concession period is for 20 years. Actual construction started in October 2007; the delay of ten months was primarily due to delay in getting forest clearances. Despite this, the construction was completed four months ahead of the scheduled date, in April 2009. However, the concessionaire could not get the completion certificate as the parliamentary election was announced and as per code of conduct applicable during the election, new public projects cannot be announced. The concessionaire got the

Commercial Operation Date (COD) in June 2009 which resulted in loss of revenue of two months. As stated by NHAI officials, in India 4 and 6 lane highways are tolled. Therefore, in highways converted from 4 to 6-lane, the tolling rights are provided to the developer from date of the appointment. However, in case of 2 to 4-lane highway, tolling begins only after conversion to a 4-lane road, which was the case here.

The pre-feasibility report for the project was prepared by M/s Louis Berger and M/s Lea Associates South Asia (LASA) which was found to be satisfactory by the concessionaire.

For this project, L&T paid negative grant of INR 4.71 bn. According to NHAI, this is the first PPP project which attracted such a high premium. The project cost estimated at INR 6.36 bn escalated to INR 14.50 bn when the project was completed. The concessionaire informed that about 15% of this was financed through equity and the rest through market borrowing. He also said that the huge cost over-run, mainly in construction, was primarily due to the ten months delay and the associated risks were borne by them.

5.2 Surat Dahisar project

The project entails 6-laning of NH8 from Surat (in Gujarat) to Dahisar (in Maharashtra) over 239 km and is being executed within DBFO mode. An SPV, M/s. Surat Dahisar Tollway Private Ltd., has been created for the project. Total project cost is pegged at INR 2.84 bn. The project is on revenue sharing basis. The concessionaire will share 38% of the revenue with NHAI in the first year which will annually increase by 1%. M/s. Ideal Road Builders Ltd. (IRB) is the chosen concessionaire. It is one of the largest companies in infrastructure development in the country.

Implementation of the project commenced in February 2009 with a construction period spanning over 30 months; scheduled date for completion of construction work was August 2011. The project concession period is for 12 years. The project was however not completed at the time of collecting the empirical data for this thesis (March 2012).

The scope of work includes 6-laning of carriageway, improvement and widening of 17 major and 37 minor bridges, construction of 26 new flyovers, 44 pedestrian and 21 vehicular under-passes, along with improvement and widening of intersections, service roads, providing bus shelters and toll plazas. Additionally, the concessionaire will also

provide highway traffic management system, adequate road furniture and horticulture and maintenance of road and associated facilities during the concession period.

M/s ICT Pvt. Ltd. is the IC for this project. They have been selected as the IC for the Ahmedabad-Godhra national highway, as well. They have worked on several NH projects in the country. M/s Stup Consultants was engaged for the pre-feasibility report. It is also the PMC of the concessionaire.

5.3 Ahmedabad-Viramgam-Maliya (AVM) project

A 2-lane state highway connects Ahmedabad, the commercial capital of Gujarat in the centre, with Maliya in the west. This stretch has heavy traffic as it connects the national port of Kandla with the hinterland and the highway passes through an industrial belt. Due to poor condition of the road, most of the heavy traffic was taking a longer route which resulted in increased journey time and transportation cost. The state government therefore decided to widen and improve the Ahmedabad-Viramgam-Maliya link in 2001. GSRDC engaged some consultants to prepare the base field report in 2001, which was validated and improved by LASA in November 2006 in the form of a project report.

In this project, the 183 km stretch between Ahmedabad and Maliya is being widened from 2 to 4-lane. L&T is the selected concessionaire, while M/s. EgisBecom International is the IC. It is associated with three BOT projects of GSRDC and one BOT project of NHAI in Gujarat. The project was bid at 14% premium.

The project was initiated in 1998 but was shelved as none of the invited agencies could fulfil the stringent qualifying conditions set forth by GSRDC for selection of IC. GSRDC had to subsequently revise them. When EgisBecom International was selected as the IC, L&T was already in the last phase of development stage. Thus the IC had to review the drawings and monitor the construction simultaneously. Some drawings got changed in the process as they did not adhere to the specified guidelines which delayed the project by about three months. This also caused some conflict between the concessionaire and IC.

Tenders for the project were invited in October 2006 and LOA was awarded to the selected bidder in August 2008. Hence, it took almost two years for selecting the

concessionaire and IC. The concession period is for 22 years which is inclusive of construction period of 913 days.

5.4 Bhuj Nakhatrana project

The 44.6 km Bhuj Nakhatrana link of the state highway (SH-42) connects Bhuj with Mandvi and Nakhatrana (ending near Lakhpat) in the western part of the state, a large portion of which is desert area. This link is strategic due to its proximity to the western international border with Pakistan. The highway was conceived more specifically to cater to the heavy commercial vehicles ferrying lignite from the mines of Panendhro. It connects Dayapar with ports of Mandvi and Jakhao. The PPP project entailed widening and improvement of the 2-lane road to 4-lane highway. The chosen concessionaire was M/s. M S Khurana Engineering Ltd. LOA was handed to the concessionaire in November 2005 and construction commenced in February 2006. The project involved construction of nine minor bridges, several culverts and two toll plazas. These facilities are to be reviewed by the concessionaire every five years for any necessary additions to cater to the envisaged demand till the end of the concession period. The approved project cost was about INR 350 mn over concession period of 13 years and 3 months. The concessionaire informed that the actual construction cost was more than INR 430 mn. The concessionaire did not seek any grant and does not share revenue with the government. The IC for this project was M/s Sai Consulting Engineers Ltd.

According to GSRDC and the concessionaire, the project is presently under arbitration over change of scope of work and decisions of the State government which have lead to a drastic drop in the vehicular traffic critically affecting the revenue stream of the concessionaire.

6 Analysing the sample projects within the PPP framework

6.1 Division of risks and responsibilities

One of the features of the widely accepted model of PPPs is allocation of risks and responsibilities between the public and private partners during the stages of construction and operation of the project.

6.1.1 Responsibilities and risks with the concessionaire during construction

During the construction period, the concessionaire is responsible for all activities such as soil and land surveys, design, drawings and construction of the road and bridges, flyovers, culverts etc., as outlined in the scope of work. All risks of design and construction in terms of manpower, procurement of material, project management and finance are borne by the developer. For the projects of the size and complexity that are being executed in the country not all developers have in-house expertise in all areas. The concessionaire engages suitable agencies, partners and consultants for the designing and managing the project. When the project is large, more than one agency is required for project management of different stretches. The project may be adversely affected if a PMC is not engaged, noted the NHAI respondents. In such cases the IC may recommend the concessionaire to engage a PMC. This is however not mandatory as it is not covered under provisions of the MCA.

While in the AVM and Bharuch-Baroda projects, L&T had an in-house team of designers and project managers, in the Surat Dahisar project the developer engaged a PMC.

6.1.2 Responsibilities and risks with the concessionaire during O&M phase

During the operation phase the concessionaire is responsible for all activities of tolling and maintenance. Either it undertakes these tasks itself or contracts it to another agency. In both the projects under operation (Baroda Bharuch and Bhuj Nakhatrana) these tasks have been contracted out. The concessionaires in both projects do not share the revenue with the government as they have paid a premium to the government, while they are required to send a monthly report of the traffic flow and revenue.

One of the main risks during the operation is related to wear and tear of the highway, which increases when the traffic load is excessive. The road is designed for a particular load as estimated from the traffic figures. Increase in number of three-axle vehicles increases deterioration of the road demanding early maintenance which entails cost to the concessionaire. In case of Baroda Bharuch highway, the concessionaire informed that there has not been much overloading as escalation in the traffic has not exceeded the estimated volume. This is also because the concessionaire projected aggressive

traffic estimates perceiving fast industrialisation of the surrounding corridor and thus enhanced the load bearing capacity of the highway.

In addition, the concessionaire bears risks associated with traffic and revenue. For example, the traffic has considerably dropped in the Bhuj Nakhatrana project due to certain decisions of the state government. This has made the project unviable for the concessionaire who has opted for arbitration.

6.1.3 Responsibilities of the IC during construction phase

While the IC is an important partner and has to shoulder crucial responsibilities in supervision and monitoring on behalf of the government, no risk has been allocated to him. The IC supplements the public agency's resources in technical matters regarding the projects and mediates between the public agency and the concessionaire on all technical matters. The government department is found to rely heavily on the IC for its technical expertise and legal advice, as the in-house capacity within most government departments is found to be inadequate.

The IC reviews all designs and drawings of the project prepared by the concessionaire. If these do not comply with the CA specifications and IRC (Indian Roads Congress)[35] guidelines (see Appendix 7), the IC gives its comments to the concessionaire who incorporates them and resubmits the drawings. The IC also undertakes checking of construction material and constructed works to ensure adherence to prescribed standards and specifications. This is however limited to 10% of works as per the IRC guidelines. The IC can however opt for checking 20% of the material and built works providing required justification to the developer. In large projects where it is observed that this ceiling is not sufficient to ensure quality checking, it may be increased to 30%. This decision is taken by NHAI/GSRDC. For safety aspects, however, checking of 100% of the works is carried out. The IC respondents from the sample projects claimed that with strict testing, quality can be ascertained satisfactorily even within the 10% limit. However, they pointed out that with testing of 30% of the works they have more command over quality control.

[35] The Indian Roads Congress (IRC), set up in 1934, is the premier government body of highway engineers of the country, and provides guidelines and sets standards and specifications for construction and maintenance of highways in India.

The IC is also required to submit a monthly report to the government regarding progress of construction.

6.1.4 Responsibilities of the IC during O&M phase

The IC which is associated with the project during the construction phase continues for six months to a year from date of commercial operation. The total period of engagement of the IC is typically four years (if construction phase does not get extended), of which three years is the construction phase. After the first year of O&M period another IC is selected; its tenure is for four years. The IC of the construction phase is continued for a year during the O&M to ensure continuity. The responsibilities of IC during the O&M phase are to ensure that operations and maintenance are being carried out as per terms of agreement. The IC for this phase is relatively more qualified in matters of operation and maintenance as compared to construction matters. Also, technical flaws during construction are generally visible during the first year of operation. Presence of the same IC, as was during the construction phase, facilitates follow-up on these issues. Also, role of the IC during O&M phase is not as intense and involved as during the construction period. It looks after the riding quality of the road, length of the queue at tolling stations, horticulture and whether traffic and safety rules are adhered to. It also checks whether the incidence management services, like provision of ambulance during accidents, is working satisfactorily.

6.1.5 Responsibilities of the government

As public owner of the project, critical responsibilities are retained by the government during construction and operation of the PPP project. Primary among these are land acquisition for the project; getting environment, forest and other clearances; and shifting utilities which fall in the ROW. Political risks and other risks identified under *force majeure* clause within the CA also are allocated to the public partner.

1. **Matters of land acquisition**

NHAI at the centre and GSRDC in the state are charged with land acquisition for the PPP projects. Identified as one of the most critical elements in timely completion of PPP projects in India, this is also reported to be one of the ‘thorniest’ issues in matters of Foreign Direct Investment (FDI) by the United States of America (Mint, 2011). The national Parliamentary Standing Committee on Transport formed to monitor progress in

roads projects has found land acquisition to be one of the major causes for delay in projects (Economic Times, 2011c). Land acquisition is found to push back projects by as much as 2-4 years, at times[36].

For all PPP projects in India, as provided in the model concession agreement, 80% of ROW, free of encumbrances, is to be handed to the concessionaire before construction starts. Land acquisition is therefore taken up simultaneously with the Request for Qualification (RFQ) stage of the bidding process for the concessionaire. However, as explained by the officials at NHAI and GSRDC, due to the time-consuming nature of the acquisition process, 80% of the required land cannot be handed to the concessionaire before construction begins in most PPPs. The concessionaires stated that they begin work as soon as 50% land is available so as to meet their project schedules, while acquisition of remaining land by the government goes on simultaneously. Furthermore, the stipulated 80% of ROW includes the existing 2 or 4 lane road, which the developers note is not helpful as widening requires the adjoining land as well. They point out that until the additional 20% surrounding area is available even 80% of the land is not of much use. Moreover, in many cases land is provided in discontinuous patches, as and when it is acquired. This, they find to be of little use as although some stretches of the highway can be constructed, the project cannot be operationalised with broken intermittent links.

According to NHAI, need for land has also increased in view of the higher number of projects being awarded. During 2008-2009, 3120 ha of land was acquired by NHAI. The estimated requirement for land is around 10,000-12,000 ha in 2011-2012.

Table 7.1: Land acquisition for highway projects between 2008 and 2012

Year	Land acquisition (ha)
2008-2009	3,120
2009-2010	6,244
2010-2011	8,577
2011-2012 (estimated)	10,000-12,000

(Source: Author's construct, based on data furnished by NHAI)

Land acquisition in India is found to be a laborious and time consuming activity. As per Indian Constitution, land is a state subject and land matters are dealt with by the state revenue department. According to my respondents at NHAI and GSRDC, it is

[36] Delay in PPPs in Portugal is also largely due to land acquisition and environmental clearances (Monteiro, 2005).

overloaded with its own works. The government respondents and the private partners mentioned that they have to engage in substantial follow-up with the revenue department to expedite land acquisition. As pointed out by my NHAI respondents, for the national highways, on request from NHAI, a gazetted officer of the state government of the rank of Deputy Collector and above has been appointed to coordinate with the state revenue department. Designated as CALA (Competent Authority for Land Acquisition), he is provided with a Mamlatdar, a Talati[37] and a surveyor. Sometimes, the district Collector may be appointed as the nodal authority. However, as he has multiple responsibilities of developmental works and law and order issues of the district, tasks related to land acquisition tend to get delayed, stated the NHAI regional head. Such an officer is not needed in state highway projects, although land acquisition presents similar problems for these projects, due to relatively closer administrative ties between the two state agencies.

Additionally, my official and private sector respondents also pointed out that land acquisition in India is heavily dependent on land records. Studies (Banerjee and Duflo, 2007; Saxena, 2005) have revealed that incomplete, outdated and inaccurate land records are a feature of many developing low-income countries. In most states of India, non-availability of systematic and verifiable land records at the field levels, and poor quality of the records when available pose a formidable challenge. NHAI officials stated that joint measurement of land requires concerned state officials and representatives of the landholders, and is a long process as it requires coordination between disparate private and public agencies. While the concessionaires of the sample projects pointed out that the shortage of adequate manpower with NHAI and GSRDC causes further delay in these works. The public agency thus leans heavily on the concessionaire and IC for assistance, they added. The concessionaire of the AVM project said that in his project as GSRDC did not have sufficient manpower to do the joint survey, they surveyed almost 20 villages to collect land data by deploying their own men.

Interviews with the officials at NHAI, GSRDC and concessionaires of the sample projects revealed that there are various stages in the process of land acquisition. While machinery can be moved in after Section 9 of the notification, for the landowners the process is not over till the compensation is paid, which is only under Section 12. They therefore resist any move by the concessionaire to start construction. The AVM project concessionaire said that in his project at many places, even after Section 9 was notified,

[37] Mamlatdar and Talati are lower ranking officials with the district administration in Gujarat.

the farmers carried on with their farming and it was a difficult task for him to evict them from the land. He further stated that any coercion by the developer has the potential to spark violence by the villagers, which may attract political attention and thus escalate. These matters therefore need to be handled cautiously by the developer. At times even after being compensated, the landowners refute the claim and go for arbitration due to which the concessionaire cannot move in his machinery. In the Surat Dahisar project also, the developer informed me that about 20 km stretch is embroiled in such dispute. Most of this land is along the Maharashtra-Gujarat border and belongs to the *adivasi* tribals[38], who have been resisting penetration in their forests of road projects which they argue robs them of their culture. The standpoint of the tribals has found support in some sections of the society and civil groups who advocate the cause of protecting tribal traditional culture by restricting such projects in these areas (Dalvi and Bokil, 2000). The head of the Surat Dahisar project mentioned that there have been instances when a group of about 15-20 villagers would come and stall the work and demand money to allow its resumption; they would leave only after the concessionaire acceded to their demand. This was repeated the next day by a different group, who would leave after being given some money. He stated that it was simpler to pay this amount every day than to let the construction stop due to demonstrations and violence, which would result in cost escalation.

My interviews with government officials, private developers and experts informed me that a major cause of delay in land acquisition in the country is related with the land compensation rates. This reason is also the cause of serious land disputes. This is supplemented with data from secondary sources such as media reports analysing PPPs in infrastructure projects in India. In case of NH projects, land has to be acquired from the private landowners who are often farmers or rural people. Compensation is awarded as per NHAI Land Acquisition Act, 1956, which is stated to be outdated with the result that compensation is much below the market rate. This has led to huge opposition from farmers and rural landowners in many parts of the country.

The concessionaires of my sample projects also stated that a common prevalent phenomenon in the India property market is that at the time of sale, on record the property is under-valued when compared to its market value in order to avoid a part of the transaction tax. As a result, the compensation which is based on the sale deed is

[38] *Adivasi* tribals are the aborigines settled in the forest areas. A large population is found in central India, part of which falls in Maharashtra.

much lower than the market rates, even after escalation is factored in. The alternative, as stated by the GM, NHAI, is the ready-reckoner rates of the state government which are updated more frequently and are higher than NHAI rates. According to him, problems are also created due to difference in the compensation rates offered by different government departments. For example, compensation rates offered by the Indian Railways for its projects are higher than NHAI rates. Thus when NHAI is acquiring land from landholders who have early received higher compensation, it is required to pay more. Many of the projects, therefore, end up in arbitration or get embroiled in litigation, the GM stated. As evidence suggests, in the Indian judicial system, getting a judgement in land matters is a very lengthy process due to huge pendency of cases[39] (Mendelsohn, 1981). For example, the Dwarka Expressway is only 35% complete after more than five years due to problems with land acquisition and multiple court cases (Times of India, 2012c). This also leads to increased cost of the project due to high transaction costs of dealing with the Indian legal system (Patibandla, 1997). Most of my respondents in the private sector mentioned that they generally try to avoid any litigation. According to the project head of AVM highway, in order to expedite work of land acquisition, which is directly linked to earlier completion of the project, the concessionaire often pays to the landowners even when they are already compensated by the government. It is observed that this practise of double compensation to the landowners tends to perpetuate their no-cooperation.

In states such as Kerala and West Bengal where the population density[40] is very high, land for infrastructure projects is limited. As a result, expansion works on many highways have been stalled due to stiff resistance from the landowners (Business Standard, 2012a). My respondents in the MoRTH informed me that in some states like Chhattisgarh, the state laws seeking higher rates of compensation are in conflict with the NHAI Act. Due to this reason the four-laning of NH-33 between Ranchi and Hazaribagh, approved in 2005, has failed to attract any bidders despite being repeatedly tendered.

Similar issues of land acquisition are observed in state highway projects also, according to government officials at GSRDC and the private developers of the state highways, as

[39] According to an estimate there are nearly 30 m cases pending in the various courts of India. Available at: http://www.rtiindia.org/forum/2385-nearly-30-million-cases-pending-courts.html [Accessed 14 August 2011].

[40] Population density in West Bengal is 1030 which is about 2.7 times the national figure of 382 persons/sq. km. Kerala has 859 persons/sq. km which is 2.4 times the national average. Available at: http://www.mapsofindia.com/census2011/population-density.html [Accessed 8 September 2011].

the larger context of land prices and compensation remains the same. However, the national highway projects seem to get discussed more in the media and at other platforms as due to their larger number, higher investments, and country-wide span and impact.

2. Shifting of underground utilities

Another important issue which determines the nature of relationship between the partners relates to shifting of underground utilities, as stated by officials and representatives of concessionaires whom I interviewed for this research. They explained that many utilities are laid in ROW of the highway, such as telephone lines, gas pipeline, electricity poles and high tension towers, optical fibres, water supply and drainage pipeline. In India, many services such as telephony, electricity, gas, water, drainage etc. are provided by government agencies. Some services are also provided by private agencies. In both cases it is the responsibility of the public partner to get such utilities shifted by coordinating with these agencies. The cost of shifting is also borne by the public partner.

This activity has also resulted in major delays in many highway projects as construction cannot start unless the utilities are shifted. This is critically linked with delay in land acquisition as utilities cannot be shifted in the adjoining private land, the concessionaires of my sample projects added. They also pointed out that a significant cause of delay is that the executing public agency has to depend on other state agencies that provide the utilities for the shifting, while the former can only coordinate and follow-up the matter with the utility providers. In order to shift the utilities, the concerned government agencies have to select a contractor that can get it done at the lowest price according to government rules. Such selection takes substantial amount of time as the procedures require calling for competitive bids, screening the bids received and selecting the contractor. Moreover, my respondents within the concessionaires were of the opinion that as these minor shifting works do not constitute an important activity within these agencies, the motivation to get it done timely is found very low.

While in the case of national projects, the follow-up by NHAI is found to be weak primarily due to shortage of staff at NHAI's regional office, according to respondents of all my concessionaires of NH projects. They have observed that much of the interaction with the utility agencies is done by paper communication rather than active leg-work,

and with little motivation within the utility agencies for this work, this method is found to be non-effective. The situation is relatively better in case of state projects because GSRDC and the utility departments function under the same government which results in better coordination, they added. Concessionaires of the sample SH projects, however, mentioned the issues of under-staffing and weak follow-up were endemic within GSRDC too, which makes state projects also prone to delay. During my research I found that despite GSRDC planning more PPPs in state highways, there was only one project manager for supervising these projects. Similar position was observed at NHAI's regional head office, which was acutely short-staffed.

In view of these constraining factors within the public partner which can significantly delay the project, in all the sample projects the concessionaires informed me that they have carried the shifting work by engaging their own contractors at market rate, which is considerably higher than the government rates. It is difficult to recover this amount as the concessionaire is reimbursed at government rate, which results in increased project cost. In the Baroda Bharuch project, the concessionaire said that one of the major reasons of the ten-month delay was shifting of high tension poles located in the ROW. According to the agreement, it was the responsibility of Gujarat Electricity Board (GEB) to shift them. Apprehending delay, the concessionaire proposed to shift the electricity poles on its own. However, this also required GEB's approval. According to the concessionaire, getting such approval was a lengthy process. The concessionaire finally shifted the poles at market rates which were higher than GEB rates. However, he was reimbursed only at government rates as per rules.

To address the constraint of this institutional arrangement, NHAI's regional head said that they have issued a directive in 2011 entrusting the responsibility of shifting the utilities with the concessionaire under the approval and supervision of the utility providers, cost of which would be reimbursed at government rates. While this reduces delay, it shifts the responsibilities of the public partner to the private partner. This seems to be a much effective arrangement as it is in the interest of the concessionaire to reduce delay and thus he puts in all efforts to complete shifting expeditiously.

3. Environmental clearances

As per terms of concession agreement, the public partner is required to secure environmental clearances for the projects before the site is handed over to the

concessionaire. Evidence from my interviews with officials and concessionaires, and secondary data through media reports reveals that along with land acquisition, delay in getting environment, forest and wildlife clearances from the central Ministry of Environment and Forests (MoEF) also results in substantial delay in PPP projects in India. This delay may be as much as 2-5 years, particularly if the highway passes through protected forests. In case of wildlife and bird sanctuaries it may even be longer. According to the central Ministry of Statistics and Programme Implementation, environmental clearance along with land acquisition is primarily responsible for maximum cost and time over-runs in PPP projects. Overall, about 400 infrastructure projects are awaiting environmental clearances (as in December 2011), with the maximum in building and construction industry including roadways (Financial Express, 2011c). According to MoEF reports, 21 highways projects in states of Uttar Pradesh, Madhya Pradesh, Bihar, Gujarat, Chhattisgarh and Jharkhand are awaiting environmental clearance.

As per the terms of agreement contained in the CA, when the highways pass through forested areas, the ROW is required to be cleared by the public agency before the concessionaire can start construction. In Gujarat, NHAI and GSRDC officials mentioned that they prepare the proposal for felling and stacking of trees and submit it to the forest department of the state government. The state department reviews it and forwards it to the MoEF, which normally takes 4-6 months[41]. Subsequent to its approval at MoEF, the state forest department selects the agency for tree felling, which is a lengthy process. NHAI/GSRDC is also required to deposit the Net Present Value (NPV) of the forest resources that are cleared, with the state forest department, before the clearing can commence. Delay in deposition of this amount, which is substantial, arising out of administrative procedures also causes delay. My NHAI and GSRDC respondents informed me that earlier, the proposals for forest clearance of western zone were sent to the MoEF regional office at Bhopal (in neighbouring state of Madhya Pradesh)[42]. The regional office had power to approve all proposals for forest clearance for unlimited area in case of protected forest. In case of reserved forests, the regional office could take

[41] During my data gathering, I observed that the regional head of NHAI was pursuing the state forest officials and the Minister continuously for two days so that a proposal could be included in the next meeting of the Central Advisory Committee. Failure to do so would have delayed the proposal by a month till the next meeting of the Committee.

[42] Such regional offices are set up across the country like in Lucknow, Chandigarh and Bhopal to cater to different geographical zones. Gujarat falls under purview/ambit of the Bhopal office. The purpose was to decentralize and delegate powers to the regional offices in order to speed up the process of approvals and clearances.

decisions for area up to 5 ha. Beyond this limit, the MoEF was competent to decide. However, now all proposals relating to forest clearances are required to be sent to the MoEF headquarters at New Delhi. This centralisation of powers has made the process to seek environmental clearances very lengthy, stated the regional head at NHAI. He explained that the Central Advisory Committee of MoEF meets once every month to discuss and approve these proposals. According to NHAI officials and the concessionaires, it often happens that although the issues are discussed in one meeting, the minutes may be signed in the next meeting held after a month. Also, due to absence of any member some matters may be shifted to the next meeting, thereby resulting in a delay of a couple of months. According to NHAI's regional head, as these clearances require the approval of the MoEF Minister, at times when the Minister is traveling the matter gets further delayed.

Narrating the experience from the Baroda Bharuch project, L&T representative said that forest clearance for the project took more than a year despite the support from the state forest department. The huge forest area spread over about 300 ha alongside a stretch of 35 km of highway required felling of nearly 35,000 trees and their scientific stacking. If the forest department were to take up the task of auctioning and felling the trees, it would have taken about six months, he informed. As this research has earlier found, the process of bidding and selection of a contractor which carries out this task at government rates normally takes a long time. Moreover, there is an observed lack of incentive within the department to expedite such matters. In order to avoid this delay, L&T proposed to undertake these tasks itself and got special permission from the forest department. It hired more than 700 labourers for felling and stacking the trees, and completed the task in about three months. L&T project head pointed out that they took this responsibility to expedite the project as the appointment date had lapsed and construction needed to be commenced immediately. Any further delay would have resulted in heavy losses for the concessionaire, he added. NHAI reimbursed the cost as per the approved rates, while the developer incurred higher expenses as it engaged more labourers at higher rate to contain the delay.

The project however got further delayed as NHAI did not deposit the NPV amount for more than three months due to some dispute with the state forest department regarding the NPV rates, informed my respondent at L&T. He had to visit the Bhopal regional office and the state forest department offices several times to resolve the issue, which should have been done by NHAI. According to the CA, the concessionaire can charge

cost of delay to NHAI. The concessionaire did not claim the charges as it is working on some other projects with the state government and does not wish to be 'on their wrong side', the L&T respondent stated. He said it was the culture within L&T which mandates providing 'all assistance' to government agencies to complete the projects; they do 'anything as the situation demands' to expedite matters. Moreover, the company is financially resilient to absorb these extra costs, he said.

Similar case in the Surat Dahisar project was elaborated upon by its concessionaire (IRB). As the project passes through the Indira Gandhi National Park in Maharashtra, a protected forest, the process for forest clearance took a substantially long time. While as per the CA, the developer should have been given the forest clearance when it started construction in February 2009, till February 2011 (when I interacted with the respondent) the clearance had not come. The IRB respondent attributed this delay to poor coordination between MoRTH and MoEF. He also cited example of their PPP project in Goa where the forest clearance for a stretch of 14-15 km of highway was received after the project was completed. In order to contain the delay, the concessionaire went ahead constructing the rest of the highway while simultaneously following up for forest clearance.

According to an expert in the Planning Commission and academicians, knowledge and understanding of rules and regulations is inadequate among the regional level officers and therefore incomplete proposals are submitted to the central ministry, which take time for getting cleared. Another viewpoint is that since administrative approval based on extant rules is known to be time taking, a realistic pre-feasibility report needs to account for this and accordingly fix the appointment date of the concessionaire after getting all clearances. However, as pointed out by deputy chairman of Planning Commission (Ahluwalia, 2011), some of the current processes are often not sufficiently transparent and predictable, and are partly responsible for the ensuing delay. Moreover, according to senior officials at NHAI, the private developers too have exhibited laxity in understanding environmental regulations and have acted in haste in anticipation of regularising their actions at a later date. The lack of effective communication between the MoRTH and MoEF has scuttled roadmaps of many infrastructure projects in mining, roads and other sectors, observed my respondents at NHAI. This has led the infrastructure ministries to take up an adversarial stance against MoEF (Indian Express, 2011d). The NHAI regional head said that with the aim to expedite projects, NHAI has in some cases tried to circumvent MoEF guidelines and invited bids while awaiting

MoEF clearance. This has not been accepted by the Finance Ministry as projects can only be bid after scrutiny and approval of Cabinet Committee on Infrastructure.

4. Clearance from the Railways Ministry

Significant delay is also observed in seeking clearance from the Railways for constructing rail-over-bridges (ROB) on highways. The NHAI/GSRDC officials mentioned that the proposal has to pass through various channels for scrutiny within the Railways. The concessionaries of my sample projects have however observed that, as with other departments, coordination between NHAI/GSRDC and Railways is also poor due to under-staffing of the former. Much of the communication is based on paperwork, while the concessionaire does the needed leg-work to follow these proposals. Moreover, the NHAI officials pointed out that blocking operational railway lines for long periods during construction of the highway affects rail traffic adversely. Thus these approvals are accorded after significant consideration of several operational issues by the railway authorities.

6.2 Issues arising from division of responsibilities and risks

According to the CA, the government is required to provide at least 80% encumbrance-free land, shift the utilities from ROW and get necessary government clearances before construction begins. The CA also carries a clause which states that the concessionaire '*will assist*' the State agency in all works. Evidence from the sample projects and secondary data indicates that it is the concessionaire who takes up substantial part of the responsibility to follow up on various matters with State agencies. Multiple reasons contribute to this. Firstly, NHAI and GSRDC are under-staffed and have limited manpower that cannot aggressively and conclusively pursue these matters with other departments. For most of the other State agencies, these works do not form their core activity and thus are not actively followed within the departments. Secondly and more importantly, this seems to be motivated by a tacit understanding between the two partners that the private partner will 'do anything' to expedite the works. Hence, the government departments adopt a lax administrative posture. This is not observed in the EPC mode where the contractor does not start construction unless these pre-construction works are completed by the government. He has no responsibility to 'assist' the client agency in any task. This fundamental difference is because the contractor is *not a partner in the project*; he does not have any stake in profit from the project. As the

respondents among the concessionaires pointed out, the officers are observed to be more dynamic in the EPC mode as they are aware that all pre-construction tasks are required to be completed by them as they will get no assistance from the contractor.

Furthermore, evidence collected from the concessionaries and the ICs also suggest that when the concessionaire pursues with the other departments it tends to generate opportunities for rent-seeking. Since it is known by those according permissions that any delay on their part can adversely affect the commercial operations of the concessionaire, the opportunity to give permissions and clearances is exploited to seek rents. On a larger scale this appears to be welcomed by a large part of the bureaucracy as such opportunities did not exist when the government departments would liaise for clearances. The respondent from L&T stated that they have their own people who have '*specialised in dealing with various levels in the government*'. For example, in land matters they get involved at the '*lowest levels in the state revenue department*'.

In India, deviation from the written terms of agreement is also caused by political interference at the field level, which is observed to be more in case of state highways than national projects. This viewpoint emerged from my interviews with the concessionaries and the ICs of the sample projects. The local interests, through their political leaders, are more effective in influencing the state bureaucracy due to their proximity with the state administration. Moreover, several officers of the state government are quite often not able to resist as the state political leadership controls their transfers and postings. My respondent of the IC from the AVM project mentioned that when the local people demand additional access paths or approach roads on highways and expressways through their local MPs or MLAs, these requests are sent to the Minister of Roads in the state government. He forwards them to GSRDC for 'consideration'. Instead of acting on the matter, GSRDC sends this to the concessionaire for 'appropriate action'. The L&T respondent mentioned that although on paper it may be a request for mere consideration, in reality it amounts to be an order. He added that they receive many such requests and have to put up with the political demands and pressures. '*Not all is written in black and white*', he commented. He explained that obstinate stance on part of the concessionaire may hamper their projects as political and bureaucratic support is critical for the success of the projects. Any delay in the projects will affect the public image of the concessionaire and its market reputation. Good reputation provides them a good standing with the government too, he pointed out.

Normatively within PPP, the government is required to bear these pressures rather than transferring them to the developer. However, division of risks and responsibilities in practice is different from what is prescribed in theory due to the context of the political and bureaucratic structures within which these projects operate. Ling and Hoi (2006) argue that construction projects in India have to reckon with complex and subtle political risks.

6.3 Analysing relations within the partners

According to the literature on 'networks', the quality of relationship between the partners significantly affects outcomes of the partnership. Moreover, the nature of the outcome is determined by whether goals of the partners are aligned or their diverging aims take precedence over the collective objectives. In the sample projects the experience has been mixed. While the relations among partners were cordial in some projects, in others there were several contentious issues between them.

In the PPPs in highways in India, the concessionaire and the IC form two crucial components of the partnership. While the former is from the private sector, the latter although from the private sector, represents the government client and works on its behalf and reports to it. In the Surat Dahisar project the concessionaire was satisfied with the IC. He termed their relationship as 'healthy'. He stated that the IC was independent and impartial in his judgement and did not tilt towards the concessionaire or NHAI. Respondents from the concessionaire and IC in the AVM project however noted that relations between the two are strained. Much of their interaction is based not on informal discussions but more on written and formal communications (in the Surat Dahisar project most of the issues are decided mutually through discussions). The developer, L&T, considers the IC to be an 'agent of the government' following and forwarding its viewpoint. According to observations of the L&T respondent, the IC's operational autonomy was seriously limited due to control of the government on the IC. He stated that the IC was working in a 'bureaucratic' style adhering to the old rules and standards. Very often the concessionaire has no option but is 'forced' to go with what the IC decides or opines, he further added. The respondent said that they take up an issue with the government, in contradiction to the IC's stand, only when it is very important. However, often instead of '*wasting time on such non-constructive things*' they prefer to '*give in*'. The respondent from the IC, on the other hand, pointed out that the developer has not been complying with the terms of agreement and has been

misrepresenting their instructions and observations to the government. Citing an example, he noted that once after a monthly site-visit the IC issued a 100 page review report to which the developer replied in merely three pages, at places stating that '*the IC observed that work was going on satisfactorily*' when, in fact, serious rectifications in work to the extent of stoppage of work were recommended.

Respondents from the concessionaires noted that since the government pays for services of IC, this ensures its allegiance to them. Although the developer reimburses half of this amount, it does not make payment directly to the IC but reimburses it to NHAI/GSRDC. The concessionaires further claim that there is often lack of knowledge and experience in the IC regarding new technologies of construction, and many of them do not have sufficient experience and expertise of working in a PPP environment. However, the respondents from the IC stated that the IC is allowed to keep its impartial stance. Moreover, payment for their services by the government does not justify such conclusions. Although the IC supervises the works on behalf of the government body and reports to it, the work is team effort with the agency and the concessionaires, a respondent from the IC observed. The IC for the AVM project pointed out that their observations and recommendations are based on provisions within the CA. In matters where they differ from the concessionaire, they prefer to meet them informally to resolve the issue. If that does not work out they write a formal letter. If this too does not work then 'corrective action report' is issued which is followed by a 'non confirmatory project notification' (NCPN). This is the last resort and the concessionaire has to comply with it, failing which the COD is not issued by the government on recommendation of the IC.

The differences between the concessionaire and the IC arise due to various reasons. The more important ones are discussed in the following section.

6.3.1 Differences regarding 'innovation' by the private partner in PPP projects

One of the strengths of the PPP mode is argued to be the innovation the private sector brings to the project in terms of technology and management practices (Hurst and Reeves, 2004). This, however, may not always be the case as this study reveals. In the sample projects there were differences within the client, concessionaire and IC regarding use of innovative technologies in the projects. The Concession Agreement states that the concessionaire '*may*' use '*innovative technology*' in the project. The

contention primarily arises from the fact that the term ‘innovative’ has not been defined. Secondly, it has not been made compulsory and left to the discretion of the concessionaire. Thus, as my respondents at NHAI and GSRDC pointed out, the government client cannot demand it as a matter of right under the contract.

There have been cases where the concessionaire has opted for a technology or has used a different material for reinforcement etc., which in its view is an innovation. Some respondents within the government and the ICs stated that in the guise of innovation, the concessionaires generally use less and inferior amount of construction material. According to the concessionaires of the sample projects, the technology enhances efficiency of the process whereas due to superior quality of some of the newer materials, less quantity is used which may result in reduction in costs. This should not be misinterpreted as inferior quality, they argued. Furthermore, as long as they meet the output specifications the means adopted should not be questioned, as the PPP approach is based on the outcome where the private developer is free to choose the means. Moreover, it is the concessionaire’s responsibility to maintain the roads during the concession period; its motive is thus to build the road such that it reduces cost of maintenance. Concessionaire of the Baroda-Bharuch project stated that the IC should educate the government agencies in the emerging technologies in the construction industry. He noted that it was a ‘struggle’ to convince the IC regarding a new technology they used in the project. They had to do substantial research on the international experiences in this area to support their point.

The respondent from the IC for the AVM project argued that in the guise of innovation the developer tries to ‘*greatly compromise*’ the prescribed standards and specifications. Narrating from his experience in other national projects, he stated that in most projects the concessionaire is not interested in any innovation except that which is termed as ‘innovation’ and can save costs for them. But ‘innovation’ in the true sense is not resorted to. On one occasion when I was interviewing the regional head of NHAI, he was inquiring from the IC of an ongoing project as to why the developer had not resorted to any innovation in the project, and wanted the IC to press for its inclusion.

My respondents within the ICs also informed me that when disputes regarding such difference of opinion are taken to NHAI/GSRDC for resolution, their disposal generally depends on the person in-charge. If he is experienced and pro-active to favour a new technology, the outcome is usually in favour of the concessionaire. In case

NHAI/GSRDC trusts the judgment of the IC which is against the use of particular technology, the concessionaire has to '*give in*'. As reported by IC of the AVM project, the government is not interested in mediating between the two. It assumes a hands-off policy and wants them to resolve the matter on their own. He mentioned that they have lost about five cases of dispute with the concessionaire in the past which has demoralised them. A more clear definition of the term 'innovation' would be valuable as this would strengthen the demand by the public partner and the IC for incorporation of innovation in the project, or provide the concessionaire with a reason why it cannot be done, thus reducing the scope of conflict.

6.3.2 IRC guidelines: Cause of the conflict

Conflict is also found to arise between the developer and IC when the latter sticks to the codes laid down by IRC which prescribe specific materials, methods and process of construction and maintenance. These national standards guide the IC and the government department in supervising and monitoring the concessionaire. Respondent from L&T found these outdated thereby requiring more frequent updates. In absence of these revisions, he advocates his case to be considered under the clause within the CA which stipulates that the concessionaire 'may use' innovative technologies to enhance the project quality. Conflicts arising from misinterpretation of the IRC guidelines, at times, start during the design stage itself with issues like number of pillars to be provided for reinforcement of a bridge etc. The concessionaire noted that since the project is a DBFO, the design decision should be left to them. He also stated that on the one hand the government wants innovation but on the other it ties the hands of the developer and makes it stick to government laid standards and specifications, which are outdated. However, this feeling is not shared by all the developers; the developer of the Surat Dahisar and Bhuj Nakhatrana projects noted that the codes were periodically revised and reflected the merging standards of construction. Similar opinion is voiced by ICs of all the sample projects. They observed that the IRC guidelines are 'progressive' and updated regularly, and are in tune with the contemporary technical requirements of PPP projects. For those standards which are not found within these, international standards like the Austrade and BS Standards of UK are referred to. According to the IC for the AVM project, the plea that the standards are outdated is taken by developers who do not wish to adhere to them.

6.3.3 Interpretation of the Concession Agreement (CA)

Conflicts amongst the partners also arise from interpretation of various clauses within the CA, and when the CA and IRC guidelines are read together. According to the ICs of my sample projects, while the whole CA document needs to be read in totality, often the various sections and clauses are read independently and selectively by the developers thus creating a difference of opinion between the concessionaire and the IC. At times there are some differences between the CA and the IRC guidelines which allow them to take advantage of the ambiguity. This happens when their letter rather than the spirit is studied. The IRC guidelines are for various geographical conditions and thus prescribe the maximum and minimum limits, which can be used discretionarily, informed the NHAI regional head. The IC respondent from the AVM stated that when he tried to be 'tough' with the concessionaire, the latter tried to have him removed by approaching the highest levels in the government. There were also attempts to manipulate him through graft by the concessionaire.

Respondents from some concessionaires however were of the view that CA lays down the minimum standards for construction, and innovating within these is their prerogative. The L&T respondents noted that often the knowledge of IC engineers regarding different schedules in the CA is poor.

In addition to the above, anecdotal evidence points to instances where the IC has been found to favour the concessionaire. Although no concrete evidence could be gathered in view of the sensitive nature of the subject, some respondents did make a passing mention about some projects where the IC and the concessionaire were hand-in-glove to exploit the situation for purely vested interests of both the agencies. As the opinion of the IC in technical matters is generally accepted by the public partner, its decisions in some very crucial matters were found to have resulted in saving of material or use of a technology thus substantially reducing the project cost.

6.3.4 Change of scope of work

Work, which is not part of the CA but is executed by the concessionaire, forms 'change of scope', and its cost is required to be borne by the public partner. As officials at NHAI and GSRDC explained, this happens largely due to two reasons: the concessionaire misinterprets terms of agreement thus avoiding construction of some structures that

have to be subsequently built; or construction of new structures such as vehicle underpass, pedestrian underpass, flyover or foot over-bridge due to demands from the local people, while the project is underway. 'Change of scope' has been found to cause several disputes between the public partner and the concessionaires. At NHAI, claims arising mainly out of change of scope and delays in land acquisition range between INR 150-200 bn, for both EPC and BOT projects (as in May 2011). NHAI is likely to spend INR 30 bn over the next two years in order to settle nearly 300 pending claims (Economic Times, 2011d).

The project head from concessionaire of the Baroda Bharuch project narrated his experience regarding change of scope of work. He said that they constructed four bridges which were required to control flooding on the expressway. However, they were not part of the approved plan but were constructed at a later stage. The concessionaire was not paid for it due to dispute regarding interpretation of scope of work. According to the respondent, they could either get entangled in the dispute and lose out on time as the procedure is very tedious and lengthy, or concentrate on timely completion of the project and early commencement of its operation which would bring in revenues. While still pursuing with NHAI regarding the change of scope, they continued with the construction. This also led to substantial escalation in the project cost. At the time of completion, instead of paying for the bridges NHAI questioned the concessionaire about their inclusion in the project. Although the bridges are already operational, NHAI has still not paid for them. The respondent felt that instead of rewarding them for the work, they were punished for being pro-active. When questioned about this, my NHAI respondent replied that as PPP is outcome-based, the concessionaire is required to undertake such works as are necessary to complete the project.

Similar is the case with the Surat Dahisar project. The IRB respondent stated that there is a major dispute between NHAI and concessionaire regarding some deviation in a major bridge and some pipe culverts, which were not within the scope of work according to the developer. The matter is pending with NHAI. The developer, however, is carrying on with the work and expects an 'amicable solution' in the matter. Any stoppage of work is not in their long-term interest, they point out. '*Whether NHAI approves it or not, we will go ahead with it. It is obligatory for us to complete the project*', stated the IRB respondent.

On the other hand, officials at NHAI said that several instances have been reported where the concessionaire has raised 'spurious claims'. Quoting hypothetical figures to explain the magnitude of sums involved, a respondent from the IC stated that the concessionaire would seek claim for about INR 100-150 mn against a genuine claim of about INR 20 mn. This is because the concessionaire knows that the case will go into arbitration which is a lengthy process running over few years, in the best of cases. So even if the claimed amount is not approved, he expects to get appreciably more than INR 20 mn, which will be sufficient to cover his arbitration cost. From my interviews with the concessionaires I gathered that there are also cases where the concessionaire opts to stay out of the arbitration process. This is mostly done by bigger companies that do not want to get into a lengthy and often unproductive arbitration process, and have sufficient financial resilience to absorb the extra costs.

7 Institutional issues within private partners

In addition to the issues discussed above, capacity problems within the private partners are found to significantly affect outcomes of PPP projects.

7.1 Shortage of qualified manpower with concessionaire

A general shortage of qualified manpower in the construction industry in the country has been observed. The limited capacity expansion in the private sector has been a cause of concern and cited as one of the reasons for slump in award of projects by NHAI (Business Standard, 2010d). According to a senior official at MoRTH, '*[H]istorically there has been a huge deficit in this sector. And now we are trying to catch up. We want to build al the roads all of a sudden. So there are issues of adequate capacity. The challenge is huge and enormous*'. Concessionaires of all sample projects admitted to facing problems of qualified manpower such as engineers, architects, consultants and skilled labour. As a respondent mentioned, some companies have bagged as many as five huge national projects but have not been able to start construction due to limited capacity in the market. For the projects on which construction has commenced, the progress has been very slow.

From my interviews with the concessioners, ICs and officials at NHAI and GSRDC, I was informed that due to the intense competition, many developers quote low project cost to bag the project but find it difficult to hire highly experienced staff. The rate of

attrition is also high in this sector due to growing competition coupled with shortage of experienced manpower. Since not all developers fall in the 'large' category, they cannot afford to retain the manpower in face of stiff competition. Respondent from IC for the Surat Dahisar project stated that in one of his previous projects he was working with just 50% manpower for the first couple of years. Apart from the numbers, quality of manpower with the concessionaire is also an issue. Whereas skills have been specified for manpower with the IC, these standards do not apply to the concessionaire. As several experts opine, this tends to affect quality of the projects.

Another viewpoint emerged from my interactions with the experts at Planning Commission, NHAI and MoRTH. On the supply side, two macro causes contribute to this shortage. A large part of the construction labour in the state comes from poor states like UP and Bihar, and reportedly have better productivity. With implementation of national poverty reduction schemes such as MGNREGS[43] and other state projects targeting the poor, migration of labour to other states has considerably reduced due to local opportunities for jobs. Respondents from concessionaires noted there was shortage of migrant labour. Secondly, a senior official at NHAI stated that '*[I]n the earlier decades when the nation was being built, and the dams and bridges and all was being constructed, there were many civil engineers. Then the trend started for computer and IT people. So there is a dearth of trained manpower in this field*'. He said that due to the boom in Information Technology (IT) sector in the last decade courses such as building sciences and technology and civil engineering lost much of their sheen during this phase. The effects of this are being reflected in the present shortage of trained civil engineers.

7.2 Shortage of qualified manpower within IC

Shortage of qualified manpower is also observed with the IC, according to my respondents at NHAI, GSRDC and MoRTH. At the same time concerns have been expressed about its quality too. During its selection, the IC is required to submit the technical and professional qualifications of the team that will work on the given project. My official respondents pointed out that often the ICs include highly qualified personnel while submitting the offer in order to 'grab' the project. Due to the high attrition rate, all of them do not necessarily continue with the project. According to the MCA, the team

[43] The Mahatma Gandhi National Rural Employment Guarantee Scheme was launched in 2005 by the Government of India with the aim to provide livelihood security to the poorest households in the country through guaranteed wage-employment of 100 days.

of the IC approved for the project cannot be replaced during the project cycle. Doing this would attract penalty. However, my interviews with NHAI and GSRDC officials revealed that there is no mechanism at NHAI or GSRDC to ensure that the same team which has been approved is working on the project till its completion. Often the IC pays the penalty, changes the team and saves money as the salary differentials are higher than the stipulated penalty.

A general dearth of qualified manpower in the country with adequate experience of PPPs in road transport sector has been noted by most of the respondents. The AVM IC noted that the project was delayed for many months as the ICs that applied for the job could not meet the stringent requirements set out by GSRDC. As a result the CA was modified to suit the prevailing market circumstances. The L&T respondent informed that the Baroda Bharuch project also did not have a permanent IC team leader till completion of the project. All the leaders were 'acting' team-leaders. This was because the selection criteria required the team leader with certain qualifications, which the IC could not fulfil. This adversely affected the project, the respondent noted. The IC for the Surat Dahisar project observed that due to shortage of qualified manpower with experience in the PPP environment often leads to retired technocrats from the government taking up jobs in the PPP as ICs. Their working methods reflect a bureaucratic bent of mind not suited for the PPP mode of working, he observed.

8 Conflict of views between government agencies

Another factor that seems to significantly hamper effective project implementation of PPPs is difference of opinion and lack of coordination between different departments within the government itself when more than one public agency is involved. For example, as narrated by the L&T respondent, an old water pipeline belonging to the Gujarat Water Supply and Sewerage Board (GWSSB) was to be shifted in a NH project. The concessionaire wanted to replace it with one with higher specification having a longer life span suited for future expansion. GWSSB approved the proposal. However, as per NHAI's manual of utility shifting, the replaced utility should be of the same specification as the one which is shifted or replaced. Coming to a consensus on this issue considerably delayed the project. While the concessionaires feel that these manuals are outdated and need revision, field officers at NHAI state that such revisions can be done only at the national level. At their level they cannot deviate from official procedures.

This research has found that many of these problems arise largely because the government departments in India typically work in silos. I learnt from my interviews at NHAI and GSRDC that while planning the projects, they usually do not consult the other utility departments of the state government. Similarly, at the national level poor coordination with the Forest Ministry has seriously delayed projects seeking environmental clearances. Some projects after clearance from NHAI are kept pending at MoRTH for many months. For example, in case of expressway near Delhi, the file has been pending with MoRTH since October 2008 (as in August 2011) although the Supreme Court has appointed a monitoring committee to monitor its progress. The project has been restructured and bids have been scrapped twice. The project cost has escalated from INR 23.55 bn to INR 26.69 bn during this period (Times of India, 2011a). Analysis of media reports and my interviews at Planning Commission reveal that there exist differences between the Planning Commission and the Transport and Finance Ministries on policy issues such as levy of toll charges, duration of DLP, alignment of an expressway or highway etc. Projects fail to take off in a timely manner pending approval from these agencies.

Poor coordination between and amongst central and state public agencies has affected PPPs not only in road transport but civil aviation also. For example, the Bangalore and Hyderabad airports, being constructed through PPP mode, were held up for as much as two years partly due to issues of dispute over land acquisition between the centre and state governments, advisor at Planning Commission pointed out. The Deputy Chairman of Planning Commission (Ahluwalia, 2011) also notes that poor coordination makes effective interdepartmental cooperation very difficult. Also, pushing matters in several departments has been found to be difficult. As mentioned by a high-ranking officer to a Parliamentary Committee: ‘We can only ask them, cajole them and prod them. Beyond that, I really do not know what we can do….We can go on writing to them and reminding them’ (Government of India, 1971-1972: 143).

Government officials within the Planning Commission and MoRTH counter this argument stating that governments are historically structured and ordered in this manner where departments function independently. This is argued to develop domain expertise and better efficiencies which causes differentiation and specialisation known to be hallmarks of traditional bureaucracy (Weber, 1948). Distance from the other department provides them independence and objectivity to judge projects on their individuals merits. This should not be construed to mean that projects are not given adequate

priority. However, they conceded that closer and timely coordination between departments can cut down unnecessary delays and expedite projects.

Almost all my respondents with the concessionaires noted that there is a perceived lack of ownership within the departments other than NHAI and GSRDC, who think that these projects are 'not their projects'. This becomes more complex when departments at national and state levels are interacting with each other. Respondents from concessionaires, drawing from their experience of other projects in various states, informed me that in case of national highways there is an observed difference in goals within NHAI and state departments as NHAI is a central government body, and most of the utilities to be shifted or replaced belong to the state government. Although there is delay in state highway projects due to various reasons, coordination problems between GSRDC and other state departments are much less. Respondent from L&T which is concessionaire for two sample projects (national and state highways), stated that he found it relatively easier to pursue matters in regard to state projects as compared to national projects as state agencies consider state highways as '*their own projects*' at least to some extent. He further added that '[*T]hey don't consider us as a partner. It is not only the NHAI but the state also. As far as the achievement is concerned, definitely they will say that we have made so many PPP projects. But they are not behaving as a partner*'. The problem of differing goals is not limited to Gujarat but seems to be prevalent in other states too. This was corroborated by IRB (concessionaire for Surat-Dahisar project), who developed the Bombay-Pune expressway in Maharashtra. This was among the first PPP projects in the country and is widely acknowledged for its technical features. The state government completed all pre-construction activities before the construction started. IRB could also complete the new Worli-Bandra sea link project of Maharashtra government in record time without many hurdles. While the same concessionaire is facing significant problems regarding land acquisition in the Surat-Dahisar project in Maharashtra.

Several national highway projects face problems during implementation as many state governments have resisted signing the Umbrella State Support Agreement (USSA) with the central government. Regional head at NHAI stated that only 24 states and union territories[44], out of total 35, have signed the USSA. He explained that under the USSA, the state government pledges administrative support for all central road projects being

[44] In India, along with states, Union Territory is a special region administered by an Administrator, except for Delhi and Puducherry which have their own legislative assemblies.

executed in the state which assures cooperation in matters such as land acquisition, administrative approvals, and law and order. In absence of the USSA a State Support Agreement (SSA) is signed by the state governments on a case-to-case basis. Absence of USSA adversely affects many projects as it results in weak coordination between the national and state authorities, the NHAI official observed. He also informed that Gujarat is one of the states that have not signed the USSA. The state government has objected the clause in the USSA according to which the state will not construct a 'compete-road' for the initial eight years parallel to any NH. If such a non-tolled or tolled state road is constructed, the traffic may get diverted to it due to which the concessionaire may suffer loss of traffic and revenue. The revenue loss will be paid by the state and deducted directly from the state's share of central financial assistance. The non-signing states consider this clause to be against their long-term commercial interests.

9 Institutional issues at NHAI/GSRDC

Various academic commentators (e.g. Lee and Kim, 2008; Doeringer and Streeten, 1990) have noted that institutions[45] are critical determinants of economic growth similar to efficient prices and market structures, and advised governments to invest in building appropriate institutions as part of public policy. In PPPs, several institutional issues within the national and state implementing agencies are found to critically influence their effectiveness.

9.1 Weak accountability structures within executing agencies

Evidence from my interviews and secondary sources does not point to any major or serious accountability issues within GSRDC. This may be because PPP projects in state highways are limited as compared to national highways. The nature of this issue may be better assessed when more and larger projects are taken up by the state government.

However, all private respondents referred to poor accountability mechanisms within NHAI. According to them, most of the existing mechanisms are aimed at accountability of 'errors' and few focus on the 'results'. Currently the 'oversight other than of outcomes is limited' (Skelcher, 2010: 300). For example no timeline is fixed for according sanctions to proposals sent from the state offices. When the project gets delayed due to excess time taken at NHAI for such matters, there is no mechanism of

[45] I follow Williams (2002: 397) while defining 'institutions'. Williams defines institutions as 'formal and informal patterns of governance, decision rules, standard operating procedures and ministerial mandates'.

accountability of officers. Some private sector respondents were of the view that even when the delay is not inordinate, taking action against erring officials will help to ensure that officials take responsibility of their actions.

I argue that weak accountability structures are also found responsible for high level of corruption at NHAI. The lack of effective checks and balances to prevent corruption at NHAI has been noted by the Planning Commission too (Planning Commission, 2008b). Recently, the World Bank demanded inquiry into grave charges of 'fraudulent and corrupt' practices by private Indian contractors, and lack of accountability mechanisms at NHAI in three large projects funded by it for US $ 620 m (Indian Express, 2012a). NHAI has also drawn flak from a Parliamentary Panel for serious procedural and financial lapses in project planning and management in the high-traffic Delhi-Gurgaon project, which has resulted in substantial revenue loss to the government and is currently in arbitration in the Delhi High Court (Appendix 8 for COPU report). High profile corruption cases in appointment of senior level officers have attracted inquiries by the Central Vigilance Commission, the country's topmost vigilance body. While the Member (Projects) was transferred in one case, two senior officers were arrested in another. These have received intense media attention (IBN, 2010; The Economic Times, 2011e; Times of India, 2010b; NDTV, 2010).

According to a senior officer at NHAI, it has taken some steps to improve its accountability mechanisms. For example, e-tendering has been made compulsory for all national and state highways projects from January 2012 to ensure transparent bidding process (Business Standard, 2011a). NHAI has also set up a fund to reward whistle blowers (Zee News, 2011). An advisor at the Planning Commission said that attempts to bring PPPs under the Right to Information (RTI) Act, 2005 were resisted by the Planning Commission initially on the pretext that the Act covers only the public sector. Pressure from activists has however led to PPPs being brought within ambit of the access law which will enable people to seek information on them. The Executive Director at NHAI pointed out that NHAI is encouraging highway users to raise issues and report problems through social networking sites such as Facebook. This is expected to make the field officers accountable for their lapses. My interactions with media persons covering MoRTH revealed that this measure has however not been very popular.

9.2 Understaffed offices

Regional and field offices of NHAI are reported to be *'acutely understaffed'*. According to a high ranking official at NHAI, this is one of the 'biggest problems' in PPPs. Inadequate capacity within NHAI to implement projects has been held responsible for low rate of award of projects by the Planning Commission (Planning Commission, 2010a). The regional office (RO)[46] in Gujarat has sanctioned posts of Chief General Manager, General Manager, Deputy General Manager, and three posts of Managers for technical and financial tasks. However, at the time of research only one post of CGM and Manager was filled in, in addition to some clerical staff.

Inadequacy of staff is found to be crucial in view of the functions required to be done by the RO, which includes scrutinising technical and financial proposals of the concessionaire and IC sent by the Project Director's field office, and coordinating with the concerned departments in the state government and the NHAI head-office. The regional head, NHAI said that at the field level, Project Implementation Units (PIUs) headed by a Project Director (PD) look after implementation of the PPP projects. Most PIUs in the state have only one PD, one technical manager and an accountant, although more technical managers are required for the projects. In addition to monitoring and supervision of the project, the PD is required to actively coordinate with different state departments for land acquisition, environmental clearances and utility shifting. Reportedly, PDs spend as much as 80% of their time on such matters when their primary responsibility is project implementation (Financial Express, 2011d). The private developers have therefore demanded more liaison officers to coordinate with the state agencies for land acquisition and other matters. Due to understaffing, at times one PD looks after many projects spread over a large geographical area, observed officials at NHAI. This is found to adversely affect the projects. The Regional Office has demanded additional staff from the HO, which was found to be pending for more than a year, in April 2011 when I was collecting data.

Additionally, from my interviews with PDs of two NHAI projects I learnt that the PD lacks adequate technical and financial powers to take decisions in the field due to which he can only forward proposals of concessionaires and ICs with his recommendations to RO or HO for approval, instead of approving them. This is observed to cause considerable delay. This is more so, as the HO gets loaded with such requests from all

[46] There are 14 ROs in different states in the country. Some ROs look after more than one state.

ROs. Experts have questioned the rationale for creating ROs without devolving powers to them which limits their efficiency. Administrative costs of running these offices without making them productive are seen as drain on taxpayers' money. Moreover, centralisation of powers with the HO is observed to increase degree and nature of rent-seeking, which is borne out by evidence. This finding is substantiated by media reports which state that in various interactions with MoRTH, the private developers of several PPPs in highways have asked for delegation of more powers to the field officers to expedite the projects (Financial Express, 2011e).

While GSRDC is relatively younger than NHAI and manages fewer projects, similar capacity issues have also been highlighted within it. My research revealed that apart from the Managing Director, there is only one GM and couple of technical managers. The post of GM has recently been filled after lying vacant for a long time. There is still no dedicated PD for the projects; an officer of rank of Executive Engineer (lower than PD) is coordinating all projects. This is observed to result in poor structuring, and weak monitoring and supervision of the projects due to lack of adequate attention. This also results in poor coordination with state departments, which frequently gets done either by the ICs or the concessionaires. For example, my respondent with the IC of the AVM project narrated that GSRDC asked them to examine the developer's demands for land requirement which is GSRDC's responsibility. The IC had to engage with the landowners at the field levels to explain the benefits of the project and need for land acquisition to them. Furthermore, he noted that GSRDC frequently forwards requests of local people for additional approach road, access paths, under-passes, culverts, etc. to the IC for on-site inspection, instead of examining them itself. According to him, it is difficult to refuse these 'requests' as they are paid by GSRDC. Refusal to do so may result in stoppage or delay of payments on any pretext, he said. The IC is thus made to function like an 'extended arm' of GSRDC in the field, according to the IC. This is however not the case with all ICs. In the Surat-Dahisar project, the respondent of the IC stated that they try to maintain a distance from such tasks as far as possible, as their independence in the field gets compromised if the local people start identifying them with NHAI.

Due to understaffing of the government offices, not only the ICs but the developers also gets saddled with tasks which are the responsibility of the government. According to L&T, NHAI/GSRDC frequently asks them to examine matters at the field which is not their responsibility as per division of tasks. It is very difficult to refuse to do these

works as it may result in adverse repercussions, the respondent averred. In fact, as a company policy they actively support NHAI/GSRDC in all such matters, he added. Such is however not the case with smaller developers who are themselves short-staffed. For example, the concessionaire of the Bhuj Nakhatrana project stated that in his project GSRDC had to seek help of the local RNBD engineers for such field matters. As these engineers do not come under direct command of GSRDC, they were not accountable to GSRDC and their pace of work was very slow.

Other than short-staffing, there are issues with continuity of officers too. The concessionaires and ICs of SH projects observed that GSRDC does not have its own cadre of manpower; officers are posted on deputation from the Roads and Buildings Department of the state government who revert back to their parents department on completion of their tenure. Hence, there is lack of continuity of vision, and supervision and monitoring of the project they are associated with. The respondents at GSRDC however argue that since most of the tasks within PPPs are taken up by the concessionaire, the need for more manpower is not felt.

9.3 Structural issues of NHAI Board

As informed by my respondents at the Planning Commission, MoRTH and media reports, the restructuring of NHAI Board has been a matter of debate for a long time. Absence of a permanent full-time Chairman since August 2010 has been a cause of concern. The Secretary, MoRTH was holding additional charge since December 2010 without any administrative powers. Prior to him, the Chairman was on contract for about four months. It was only in June 2012 that a full-time Chairman was appointed to the NHAI Board.

The private developers and transport experts have been seeking more representation of independent technical and financial experts on the Board along with additional members to look exclusively after matters of dispute resolution, land acquisition, legal and financial issues, and project management, as NHAI has been found to be seriously wanting in these areas. NHAI Board presently has six members; two for project matters and one each for finance, administration, technical matters and PPPs. They are all serving senior bureaucrats on deputation to NHAI as it does not have its own cadre of officers. A high ranking official at Planning Commission stated that '*you have to have on the NHAI Board a few independent people, which we don't have. Who are*

knowledgeable and just don't toe the line. Can give independent views. Secondly we will have to depoliticise the process'.

In order to address these institutional issues, the Committee on Infrastructure (COI) under chairmanship of the Prime Minister was constituted in 2005. The Committee recommended restructuring of NHAI with a view to enhancing its autonomy and to delegate more powers to it so that it functions as a commercially oriented 'multidisciplinary professional body with high quality financial management and contract management expertise' (Planning Commission, 2008b: 5). It also recommended strengthening the Board with more professionally and technically qualified members. Many of these recommendations have however not been implemented since 2007, as confirmed by a senior NHAI official. Experts note that NHAI bureaucrats have resisted co-opting independent experts who may bring in technical expertise but may not toe the government line. Through this research I argue that this may be caused due to reluctance by bureaucrats to share their 'turf' with outsiders as they perceive such a move may curtail their domain; bureaucracy has had a long standing tendency to grow as a mechanism for self survival (Periera, 1993). As Bourdieu (2005: 113, 93) comments, acts by civil servants' for 'self-perpetuation' are a reflection of their tendency 'to assert and defend their existence' by defending existence of bureaucratic organisations. Thus, even when there is provision for co-opting private sector and independent experts on the boards of public sector organisations in India, seldom are they appointed. This view is supported by Arnold Meltsner (1976: 9) who notes that out of an exaggerated concern for their 'turf' and in order to protect it, bureaucrats 'shed their generalist clothes and become "experts" in selected areas'.

In view of the crucial role NHAI plays in PPPs, in June 2011 the Prime Minister directed for expediting the process of restructuring NHAI. The Transport Minister has also stated that generalists cannot be expected to work on such huge infrastructure projects which have components of engineering, procuring, project management, legal issues of liabilities, annuity and concessions (Indian Express, 2011b). Recognising that the existing eligibility criteria for members and Board Chairman are restrictive, thus favouring bureaucrats, MoRTH relaxed them to enable induction of more technocrats and professionals from the private sector (Indian Express, 2011b). However, after more than 17 months, the Ministry appointed a bureaucrat as NHAI's chairman in June 2012, although applications were invited from the private sector (applicants from the private sector were reportedly fewer than expected). This may be due to a general apprehension

within the government that having more representation from the private sector may lead to market-driven decision making at NHAI which may not be in long-term public interest. Respondents within the central government argue that given the current stage of PPPs in the country where the private sector needs to develop more maturity as a 'partner' and understand its responsibilities towards the larger 'public interest', NHAI is likely to be more effective when headed by a bureaucrat, although professionals may be inducted at various technical posts.

The GSRDC Board, on the other hand, is chaired by the Minister, RNBD and has secretaries from various departments such as urban development, RNBD, finance and GIDB. The Board is observed to be reasonably balanced with a member from the private sector as well. In its current form, it is found to be sufficiently effective in fulfilling its designated duties.

9.4 Attitudinal issues among officers at NHAI/GSRDC

Respondents within the Road Transport Ministry and Planning Commission are concerned about the general attitudinal issues within NHAI. In addition to short-staffing, this is another factor largely held responsible for slow roll-out and implementation of projects. The Planning Commission notes that 'to be successful, processes, systems and attitudes in the NHAI would need reorientation' (Planning Commission, 2008b: 10). Respondents from the private sector in may sample projects noted that engineers still work with the mindset of the era when the government commanded total control over projects. They are reluctant to share control of projects with non-State partners, they note.

I argue that the attitudinal issues may largely be because a substantial proportion of engineering staff of NHAI comes on deputation from the state and the central governments, and only a small proportion is taken on contract basis from the market, as informed by NHAI officials. Most of the government engineers do not have experience or orientation of working in a PPP environment. They therefore tend to bring along the baggage of traditional ways of government contracts where they dictated to rather than partnered with the contractor. Moreover, as the staff returns to its parent government department after its term at NHAI, there is little continuity of the trained and experienced engineers within NHAI. While senior officials at NHAI claim that they are geared up to meet the challenges of working in a PPP environment, the Transport

Minister evaded discussion of institutional requirements at a press conference[47] to highlight achievements of the Ministry, which I attended.

Senior officers at Planning Commission and experts attribute the substantially high levels of corruption at NHAI to the mindset of working in a governing structure where there is a tendency to seek rents for awarding projects. The Santhanam Committee on Prevention of Corruption (Government of India, 1964) has identified construction and purchase wings of the government to be most corrupt. The roads and buildings departments and civil engineering wings in most states have been found to be among the most corrupt government bodies. Transparency International has found the roads construction system in India as 'highly institutionalised' (Asia Times, 2009). Based on recommendation of the Planning Commission, an Inter-Ministerial Group was set up in 2005 to deliberate upon the restructuring imperatives of NHAI. However even today, many recommendations are pending to be operationalised. A senior respondent from Planning Commission noted that it seems that '*they don't want the change*'. Further, he added that '*[t]he biggest problem in NHAI is that they are used to a particular kind of working where they have been pampered with the associated benefits*' of working with contractors.

9.5 Over-engineering of projects

Respondents at the Planning Commission are of the view that NHAI over-engineers projects with too many structures such as bridges, under-passes, culverts, etc. which hike up the project cost. This makes it unattractive for smaller developers thereby limiting competition. There are concerns that this may lead to cartel formation between a few big concessionaires, and provide NHAI with more hold over bigger contractors. Almost 47 schemes of NHDP had to be restructured in 2010 to make them viable for bidders, a senior Planning Commission official stated.

According to engineers at NHAI and GSRDC, these structures are not being built for only 25-30 years of concession period but are meant to last for 50-60 years. Thus there is a need to make them robust. While they do not want to make them extravagant, they cannot compromise on their safety, as structures such as bridges, over- and under-passes provide better safety for local users, and features like culverts, storm drainage, etc. reduce the adverse effects such projects tend to have on the natural drainage patterns of

[47] Press conference held at Press Information Bureau, New Delhi, 2 April 2012.

the area. The respondents stated that flooding in the upstream of the Ahmedabad-Baroda expressway in Gujarat has largely been due to the expressway blocking the natural drainage on the one hand and less number of culverts preventing full drainage of rain-water on the other, thereby flooding the upstream area. This experience resulted in incorporation of more drainage culverts of bigger dimensions in the Baroda-Bharuch highway.

Furthermore, according to officials at NHAI and GSRDC, often they have to include underpasses and bridges at a later stage due to pressure from the local people who represent through their political leaders for more access paths. This may be due to two reasons: either the need has not been fully assessed during the design stage, or development of the surrounding area raises demands for these structures after construction of the project starts. Political leaders cannot ignore such demands as this may alienate the local population and result in mass agitations. Such demonstrations have been witnessed in many parts of the country. To mitigate the situation additional structures are often constructed by NHAI/GSRDC at its own expense. At times, as is noted in the Baroda-Bharuch project, the concessionaire constructs them at its expense, but may get embroiled in 'change of scope' litigation.

The concessionaire may also under-assess need for these structures to reduce the project cost. For example, my respondent in the IC for AVM pointed out that in the project, L&T agreed to provide only three underpasses instead of the required six, justifying it on technical grounds. Despite objections from the IC, GSRDC was of the view that since the concessionaire has to operate the project it should handle the local people. However, this has resulted in the local people halting the work at Soldi village to press for their demand for six underpasses. L&T is therefore now contemplating providing the additional three underpasses. In addition, there was a need for a culvert to drain storm water from one side of the highway to the other. L&T proposed to provide a drain with a diameter of 4m. The IC protested and insisted on a drain of at least 8m diameter to make provision for any flash-flood situation in the future. The tussle to incorporate this carried on for nearly six months. As GSRDC agreed with the IC, L&T had to finally construct the drain with 8m diameter.

Additionally, some respondents within the media and experts at Planning Commission have questioned the rationale behind initially 4-laning the roads and subsequently 6-laning them, and whether this exercise is holistically assessed. They argue that instead

of 6-laning the 4-lanes, they can be provided with services lanes to enhance the capacity and ease the traffic problems. 6-lanes could be selectively opted for some stretches if these measures fail to ease the problems. For example, as reported in the media (Times of India, 2011b), MoRTH recently scrapped widening of NH24 connecting Delhi to Dasna in north India even after the contract was awarded. The NH24 is one of the most congested corridors in the country. The Ministry recognised that widening the road will merely enhance its capacity but not ease the traffic problems. It plans to remove the traffic signals, provide more underpasses and service lanes to provide ease of traffic to the local residents. Critics have been arguing for more of such out-of-the-box thinking among the planners. However, such decisions have not been replicated on a larger scale.

9.6 Time allocated for preparation of pre-feasibility report

Within the PPP mode, the public partner such as NHAI/GSRDC engages private agencies for preparing the pre-feasibility report (PFR) of the project. My interviews with experts at Planning Commission, concessionaires and ICs of sample projects revealed that the period of about four months allocated to this under the MCA is insufficient for production of good quality report, especially for large projects traversing different areas with diverse geographical conditions. The PFR is a crucial document which provides technical details of the project such as the soil quality and strength, subsurface, existing condition of the road etc. These guide the concessionaire in its technical and financial submissions during bidding. According to the concessionaires, poor quality of PFR results in provision of inadequate and incomplete details of the project which adversely affects its quality. For example, in the Baroda-Bharuch project, the L&T respondent said that they had to resort to complete re-milling of the road (removing the top layer of bitumen) as its quality was found to be ‘very poor’. This cost them an additional amount of about INR 0.60 bn which was not factored in the initial project cost as the PFR did not contain detailed information on the road condition, and was known only when the work started.

Poor quality of PFRs is also largely responsible for unrealistic estimation of project cost, which may be on the lower or higher end of the spectrum. Giving hypothetical figures, a MoRTH official mentioned that although the project cost may be INR 5 bn, it is bid at INR 8 bn or INR 10 bn based on the PFR. In such a case the concessionaire has to arrange for higher finances, which increases its debt burden. This also tends to reduce competition as only the big players are capable to bid for the project, he analysed.

Moreover, increased TPC also hikes up the VGF which puts additional burden on government budgets.

Recently, as discussed in the national conference on PPPs in highways in September 2011 at New Delhi, some large PPPs in national highways have attracted 'aggressive bidding' where the difference between quoted amount by the bidder and estimated TPC by NHAI is to the tune of about 39% of TPC. This has questioned the estimation of TPC within NHAI based on its PFR that seemingly undervalues the total project cost, amidst demand for more sturdy processes of project evaluation. For example, for the 555 km Ahmedabad-Kishangarh project, M/s. GMR Ltd. quoted an annual premium of INR 6.36 bn for a 26 year concession, whereas the 330 km Shivpuri-Dewas stretch in Madhya Pradesh was awarded to M/s. GVK Ltd. at a premium of INR 1.81 bn. In the latter project, Reliance Infrastructure demanded INR 7.62 bn grant from NHAI which effectively makes the difference between the premium and grant, for these two bidders, equal to about INR 9.43 bn. As observed during the aforesaid national conference, which I attended, analysts have been sceptical of these 'suicide bids' which defy business logic, and suspect their long-term implications on the market. Heads of private and public banks pointed out that they are watching such projects as high premium leads to higher project costs which could become sustainable in the longer run. Some defaults have been observed, they said, which have affected the confidence of the banks and other financial institutions in the concessionaires.

Defending the methodology of arriving at the TPC at NHAI, a senior NHAI officer mentioned that their estimate is based on a 'cautious' analysis as against the 'more realistic' estimation by the concessionaire who does not use the 5% growth in traffic used by the former. Lack of reliable and updated data with the government agencies is also held partially responsible for this, he added. The officer also stated that the premium from 22 out of the 33 projects awarded in 2011 has fetched substantial premium, due to which the borrowing by NHAI for the year reduced by more than 56%.

Additionally, the number of projects awarded by NHAI has increased in order to fill the backlog of past years, a senior NHAI officer stated. The time available for pre-construction activities is not adequate, thereby affecting activities such as preparation of pre-feasibility reports. For example, about 45 days are given for the RFP and RFQ stages which are admittedly not adequate. Coupled with the deficiency of qualified manpower in consulting agencies, quality of these reports tends to suffer. The

respondent at NHAI however conceded that there is scope of improvement in the detailing and quality of reports. The view in the Planning Commission is that due diligence needs to be exercised at NHAI in this matter as there are competent agencies which can do this work. However, they need to be given sufficient time to produce quality reports.

Another perspective to this was provided by a middle level manager at NHAI. He noted that '*[P]olitically every politician wants to inaugurate as many BOT roads in his tenure, so there is a very big political pressure on all of us to start these projects very early*'.

10 Issues of tolling of PPP projects

Evidence through my interviews with NHAI officials, and concessionaires and ICs of my sample projects reveals that tolling of national and state highways is relatively less controversial issue in Gujarat as compared to other states. Tolling of urban roads in other states such as the Delhi-Gurgaon and Delhi-Noida link roads has resulted in stiff public resistance. On the intra-city roads, the long queue during peak-hours causes delay running into couple of hours for the commuters, which was experienced by me during a drive on the Delhi-Gurgaon expressway. Not much agitation has been reported on long distance inter-city and inter-state roads as the people do not need to frequently travel on the same roads. Sporadic instances have however been reported such as the one in Adilabad (in southern state of Andhra Pradesh) where people protested against the 'irrational' levy of tolls, more toll plazas and insufficient service lanes (The Hindu, 2011a).

While only those state highways which are under PPP are being tolled, NHAI officials informed me that it has been tolling 4-laned highways and expressways which have been constructed under EPC mode before it shifted to PPP model. International experience with PPPs indicates towards general resistance by users to pay for a service which they feel should be free of charge as they anyway pay taxes. However, over the past few years the 'user-pays' philosophy is gaining acceptance in India, especially in the roadways sector. Furthermore, an official at the Planning Commission pointed out that the toll rates in India are among the lowest in the world. The toll rates for the national and state highways are determined under the National Highways Fee (Determination of Rates and Collection) Rules, 2008. The national toll policy has

brought uniformity in toll charges across the country and removed arbitrary tolling by the operators. It has standardised various aspects related to tolling such as the criteria for tolling rates, periodical increments, exemptions, etc. The toll is linked to the Wholesale Price Index (WPI) and is increased every year.

According to L&T, which is operating many PPP projects in the country, they have not faced any mass agitation in their projects. In only some projects there was initial resistance from the locals during the construction stage, but the users have not resisted the toll fees. The Surat Dahisar concessionaire also reported that they did not face any major unrest although there were some minor instances of resistance. L&T respondent stated that the Baroda Bharuch project witnessed agitations from local residents during construction and on the first day of commencing operations. Explaining the features of the toll policy, GM of NHAI's regional offfice said that exemptions have been included for the local people (in accordance with the national tolling policy) who are required to pay nominal monthly charges. They have however resisted this additional expense for a service which was free earlier. He noted that '*[T]here has been resistance in people to pay heavy charges for long distances when the number of toll plazas result in high access charges*'. Moreover, as observed by the concessionaires, people from the neighbouring localities and villages were concerned about limited access to the road for themselves and their cattle, which hitherto was unhindered and uncharged. Although road over-bridges are built to provide them access across the highway and service lanes allow passage to local traffic, these entail travelling longer distances than earlier. For example, in Bijapur (Karnataka), villagers have protested against non-inclusion of an under-pass on NH-13, despite their representations. This has hampered their own movement and that of their cattle and tractors (The Hindu, 2011b).

Moreover, in case of conversion of 4-lane roads to 6-lane roads, the tolling policy provides for the concessionaires to start enhanced tolling from the first day of construction. This is found to create resistance by the users when they are required to pay an increased toll but perceives that they are not getting the services that they pay for. As discussed during the national conference on PPPs (September 2011), in Punjab truckers have protested at various places where widening of NH-1 (from 4 to 6-lane) from Panipat to Jalandhar (291 km) is under progress causing congestion and traffic jams. These problems are prolonged when projects get delayed, thus further aggravating the protests. Such agitations have been witnessed in other states too where projects have been delayed. In view of these representations, the Parliament's Committee on Estimates

has recommended that MoRTH needs to review the rules for tolling such that the excessive tolls on 'shoddy roads' do not become 'instrument of malpractice and unjust profiteering by unscrupulous elements to harass general public' (Times of India, 2012d). The Transport Ministry is therefore planning to reduce the user charges during the construction phase. This was informed by the union Transport Minister during a press conference in April 2012.

An important issue with the tolled roads highlighted by the officials at NHAI, MoRTH and Planning Commission, is the under-reporting of traffic in projects with revenue sharing agreement with the government. Instance of this have been reported by respondents in one of my sample projects. For example, the IC in the AVM project stated that the concessionaire has been underreporting traffic. Moreover, although a traffic survey report is to be submitted to GSRDC every month it is pending since the last one year. Such malpractice is found in some other projects too. For example, in the high-traffic Delhi-Gurgaon expressway the independent auditor and a Parliamentary Committee have made scathing remarks on the glaring discrepancy between the revenue collected and traffic reported. NHAI gets 50% of toll revenue in this project and under-reporting of traffic has caused huge revenue loss to NHAI (Times of India, 2011c; Lok Sabha Secretariat, 2009). A Public Interest Litigation has been admitted in the Supreme Court alleging connivance between NHAI and the project concessionaire. It notes that the concessionaire has recovered his investment of INR 5.50 bn in the three years of operation while its concession period is for more than 20 years. There have also been cases where the supervising engineer of the toll plaza has colluded with the operator to ignore false entries (Economic Times, 2011g). In order to deal with this, MoRTH officials informed me that plans are afoot to install automatic vehicle counter cum classifiers (AVCCs) at many plazas which will double up as independent toll audit systems. The MoRTH has constituted a national committee on Electronic Toll Collection (ETC) to examine the available technologies and recommend a suitable one for implementation on all tollways. The pilot project on electronic toll collection was implemented for the Zirakpur Parwanoo section of NH-5 in April 2012.

Revenue loss due to under-reporting of traffic and corruption by NHAI field staff is not limited to only PPPs. According to a media report (Financial Express, 2011f), in more than 100 toll plazas on 4-lane and 6-lane highways which are not under PPP but are maintained and operated by NHAI, about 25% leakage in revenue is observed due to malpractices by the operator and poor revenue-sharing arrangements with the operator.

The government has decided to operate the toll plazas on a PPP model where the private partner will also look after their operation and maintenance, stated the news report. It has shortlisted 32 large infrastructure companies for this purpose. Developers are reportedly keen about this as it will yield about 18-20% returns.

11 Issues during implementation of PPPs

It is argued in literature that higher efficiency within the private sector due to its specialised resources coupled with faster procedures of decision making (as compared to the more hierarchical structures within the government), leads to faster implementation of projects. PPPs are also argued to cut down time and cost over-runs. Available secondary data from national PPP projects, mostly from media reports, however, contradicts this claim. Sub-standard work as a result of sub-contracting is also found to be a matter of serious concern.

11.1 Delay and cost overruns in PPPs

Comptroller and Auditor General (CAG) of India carried out performance audit of eight BOT and annuity projects out of the 17 projects taken up for execution under PPP mode between March 1998 and April 2003 under NHDP phase-I. Of these, only five out of 17 projects were completed in time, while there were delays of as many as 2-42 months in others. CAG further identified delay in award of work and issues of land acquisition, change-of-scope orders during execution, and absence of corporate and strategic plan as reasons for overall delay in NHAI projects (Indian Express, 2008). The Parliamentary Standing Committee on Transport has also criticised NHAI for the 'tardy progress' in achieving its targets and its slow progress in completing the crucial North South-East West corridor (Economic Times, 2011a). According to a World Bank report of 2009, as many as 40% road projects suffer from cost-overrun of anything between 25-50% (Financial Express, 2011g). An extensive study of 227 new road projects in the EU also concluded that PPPs were 24% more expensive than estimates and the cost-overruns were comparable to those in traditional procurement mode (Blanc-Brude *et al*., 2006). Other studies also suggest cost-overrun of 28-50% in large infrastructure projects, predominantly transportation (Flyvbjerg *et al*., 2003; Merewitz, 1973).

11.2 Sub-contracting

In EPC mode the contractor cannot subcontract more than 49% of the works, while in PPP, till very recently, there was no limit to subcontracting and further sub-subcontracting. MoRTH and NHAI officials stated that there have been widespread concerns about quality being compromised due to extensive sub-contracting and lack of control by government executing agencies in monitoring its extent. For example, substandard work by sub-contractors with no experience in bridge-building has been found to cause collapse of a bridge in Kota, Rajasthan (Financial Express, 2010). Subcontracting of maintenance has been found to be affecting quality of construction, informed my NHAI respondents and ICs of my sample projects. The subcontractors do not have as much incentive in maintaining the quality of work as the private partners of PPP projects, and resort to extensive cost-cutting measures thus compromising with the quality of works, they observed.

In order to address these issues, NHAI has in 2010 tightened norms for qualification of sub-contractors. With the new norms, the concessionaire can sub-contract work to only those who have earlier executed works up to 20% of project cost or INR 5 bn, whichever is more. Any change of sub-contractor will need approval of NHAI which will be based on technical qualification of the new contractor. If these norms are not followed, the concessionaire will be barred from bidding for NHAI projects (Financial Express, 2010a). However, no such norms have been stipulated at the state level.

While some of my respondents were of the view that excessive subcontracting can potentially compromise with the standards and quality of work as the chain of command and control gets diluted, others note that the issue is not so uni-dimensional. The quality of work depends on the control, monitoring and supervision by the concessionaire, they opined. As long as robust mechanisms exist to ensure these, quality can be maintained despite subcontracting. IC of the AVM project who earlier worked as part of the PMC team in the Yamuna expressway, being developed by the M/s. Jaypee group, described the project as having many major and minor bridges, railway bridges and underpasses. As Jaypee did not have expertise in construction of all these structures, it subcontracted the entire project to 16 contractors who further subcontracted these. There were 16 sub-contractors for roads and 8 sub-contractors for bridge works. Despite this, Jaypee established stringent mechanisms to ensure quality control. There were four quality control wings that operated from Delhi. They would visit the sites unannounced to

check the material, quality of the work, machinery, excavation, etc. This was corroborated by IC of Surat Dahisar project who had worked as part of the concessionaire team in the Yamuna project. In the Surat Dahisar project, he however noted that control over subcontracting is poor and mechanisms for project monitoring were not sufficiently efficient; there was just one mechanical engineer at the field level for monitoring six packages.

11.3 Risks during construction

A distinctive feature of a widely accepted PPP model is that substantial risks during construction are allocated to the concessionaire. Findings from this research substantiate this theoretical proposition. L&T respondent stated that in the Baroda-Bharuch project at the time of bidding the cost of bitumen was INR 16,000/m tonne which reached INR 40,000/m tonne during construction due to international hike in its prices. The difference had to be borne by them. He further added that the construction industry is pressing for policy intervention by the government in situations when prices of construction material such as steel and iron, cement and bitumen increase due to circumstances beyond control of the developers.

The concessionaire also has to bear risks caused by policy decisions of the government which significantly alter context of the project and its financial viability after the project has been commenced. The concessionaire of the Bhuj Nakhatrana project provided details from the project to substantiate this finding. He said that the highway was primarily conceived for the trucks carrying lignite from the Panendhro mines in western Gujarat. The recorded traffic in October 2004 was 19,184 heavy commercial vehicles (HCVs)/day. When the highway started operating (February 2008) the traffic was 22,000 HCVs/day. In May 2008 the state government passed an order reserving the lignite for only the power plants of the State-owned Gujarat Mineral Development Corporation (GMDC) and industries of the surrounding area, discontinuing its merchant selling. This drastically lowered the movement of HCVs from this area. In three months from the starting of operations, the traffic dropped to 600 HCVs/day, while the cost recovery for the concessionaire needed minimum traffic of 19,000 HCVs/day. The concessionaire has therefore opted for arbitration in June 2010 after pursuing with GSRDC for nearly one and a half years to find some solution to the problem. It was after more than a year, in July 2011, that both partners agreed on the arbitrators. The concessionaire claims that he has incurred about INR 250 mn in losses as interest

payment on debt and debt restructuring. GSRDC can, as per terms of CA, pay for the losses or extend the concession period for the concessionaire to recoup the losses. However, in this case, at the current level of toll collections, the concessionaire will not be able to recover its cost even when the tolling is extended for the maximum term of next 30 years. As the government's decision on lignite mining is unlikely to change with the current political dispensation, the developer does not foresee any profit from the project. This, he points out, is debilitating since he is not a big developer and does not have enough financial resilience. As a result of his experience from this project, he has not bid for any other PPP project in the country.

In EPC contracts all such risks are borne by the government.

12 Underdeveloped regulatory framework

An underdeveloped regulatory framework in the country in highways sector is found to be adversely affecting effectiveness of PPPs. The sector does not have any independent regulator unlike the sectors such as power, telecom and civil aviation. While at the state level, GSRDC sets the tolling tariff, disputes regarding the contract are resolved within framework of CA through arbitration or courts, and people's complaints are diverted to the state government. My NHAI respondents informed me that it is not competent to set the tariff, which is set by MoRTH. The process, as Singh and Wallack (2009) observe, is non-consultative and devoid of any systematic economic analysis of the transport market. Absence of independent regulator is found to hurt the interest of stakeholders in the sector, particularly those of the users, opine some experts. While reviewing the Delhi-Gurgaon expressway, the Parliamentary Standing Committee has found NHAI to be ineffective in protecting users' interest while implementing the project (COPU, 2009). A Public Interest Litigation (PIL) in the Supreme Court in the same project also alleges that NHAI's policies have hugely benefited the concessionaire at cost of the users. The Supreme Court's ruling in the matter questions whether it is the policy of the government 'to help only the contractors?' (Times of India, 2012e).

13 Land grabbing by private developers

Although the sample projects have not thrown up these issues, land acquisition by the government for development projects such as highways has lately acquired serious proportions in the country. PPPs in highways are reportedly being characterised by increasing instances of land grabbing by private developers, and the State machinery

bending backwards to accommodate their interests to seek rents. Evidence for this section has been collected from my respondents in the government and the Planning Commission, and through secondary data such as media reports.

In many PPP projects in India, the government is offering land surrounding the project at very low prices to the concessionaire as an incentive to invest in the projects, on the pretext of the projects being otherwise unviable. Moreover, the government uses its authority to acquire land at less than prevailing market rates. The private developer, in most cases, uses this land for commercial purpose or sells it to other developers at higher prices, in both cases generating huge profits. There is a national debate surrounding the issue of government acquiring land from the farmers and other landowners mostly in the rural parts of the country at very low rates and handing it to private developers for purportedly 'public projects' such as roads. Critics argue that the manifold returns to the private sector from commercial development of this land are not shared with the original landowners nor are ploughed back to the community. Many of the original landowners thus lose out almost their entire livelihood and the compensation received is not sufficient for them to generate alternative livelihoods. Such projects thus make already poor communities poorer.

In May-June 2011, the issue assumed serious proportions when farmers in the northern state Uttar Pradesh (UP) agitated against the state government for acquiring their land for the 165 km Yamuna-Greater Noida expressway at very low rates. There have been allegations of the developer of Yamuna expressway, M/s Jaypee Infrastructure, one of the largest infrastructure companies in the country, colluding with the state politicians and bureaucrats for generating huge gains, illegitimately, at the cost of livelihoods of poor farmers. The farmers were paid as little as INR 50 per sq m in an area while the same land is being sold at INR 1500 per sq m by the private developer with a staggering 3000% mark-up (The Pioneer, 2011). The developers also intend to use part of this land for constructing high-end housing colonies, commercial shopping malls, golf courses and formula-one racing tracts[48]. The agitation assumed a political hue when the opposition parties, at the centre and state, supported the farmers. There was an armed protest and reported instances of abuse of political and police power when many

[48] The private developers of the Delhi International airport have also sought government nod for allowing them non-aviation commercial development of the 5000 acres of land near the airport for golf courses, commercial offices, theme parks, shopping malls etc.

unarmed villagers were gunned down by the UP police when they clashed with the state administration.

Several such cases have been reported in other states also where the State has favoured the private sector under the pretext of providing 'incentive to the developers'. The CAG has pointed to 11 cases in some districts in the eastern state of Orissa where the government undervalued land 'in a manner that benefits the buyers at the cost of land owners'. This led to underassessment of compensation by INR 639.8 mn. In one case the state government did not charge the private developer development charge of INR 81.9 mn (Business Standard, 2011b).

India is a densely populated country[49] and land is a scarce commodity as it is in short supply. There is competing demand for land from the realty, manufacturing and service sectors. Real estate market in India has been booming since the past few years as a result of growth of Indian economy while a substantial gap is reported between demand and supply[50]. According to some media reports (The Pioneer, 2011), many private developers have amassed huge wealth by grabbing land while colluding with corrupt politicians and bureaucrats. The archaic national and state land Acts[51], which offer compensation much below the market prices and empower the government to acquire any private land for 'public purpose', are also partly responsible for this. In practice, land is acquired by the State and landowners are compensated at rates far below the market rates.

Many instances have been reported in the media where state governments have acquired land from *panchayats*[52] or diverted public lands under the pretext of developing public schemes like low cost housing for slum-dwellers and providing public utilities, only to subsequently sell the land to private developers at huge mark-ups (The Pioneer, 2011). In fact, so rampant has been the role of government functionaries in acquiring land on behalf of the private sector, that the State has been called '*the real estate agent*' of corporate India (Business Standard, 2010e). The CAG of India has also rapped

[49] The total population of India is 1.21 bn; population density is 382 persons/sq. km. It is the second most populated country after China and follows Bangladesh in terms of density. Available at: http://www.censusindia.gov.in/2011-prov-results/data_files/india/Final%20PPT%202011chapter7.pdf [Accessed 6 September 2011].

[50] According to media reports, across eight major cities this has significantly affected housing projects of the big builders. Available at: http://economictimes.indiatimes.com/markets/real-estate/news-/widening-demand-and-supply-gap-hits-home-projects-says-propequity/articleshow/9790742.cms [Accessed 31 August 2011].

[51] The national Land Act dated back to 1894. It was a legacy of the colonial period of India.

[52] Local governing bodies in the villages

politicians and ministers in Maharashtra for favouring a private land developer, Lavasa Corporation's INR 28 bn hill residential city near Pune, and for framing regulations and amendments propelled by private and public interest (Hindustan Times, 2012). A senior officer at MoRTH stated that many bureaucrats and politicians have reportedly invested in township development schemes of private developers or have been promised benefits accruing from these schemes. Similar critical view of PPPs is seen in literature where partnerships are termed as 'policies to enrich the few at the expense of the majority' (Shaoul, 2005: 550).

This situation has prompted many real estate developers and construction companies to transform themselves into infrastructure concessionaires to take advantage of the substantial potential in the sector, and the incentive of estate development provided by the government. Secondary data suggests that there is collusion between the PPPs in roads and the realty sector in India. For example, in the scam surrounding the US$ 620 m highways projects funded by World Bank, it has been alleged that the concessionaire diverted huge funds to reality development in India and abroad (Times of India, 2012f).

It appears that due to the non-transparent controls on land, huge rents can be enjoyed by those who manipulate the Acts through discretionary policy making and the developers who benefit from these manipulations. In Madhya Pradesh, a senior officer was booked for corruption for swapping public land with cheaper private land which resulted in huge gains for the developer, by using her discretionary powers (Indian Express, 2011e). The Deputy Chairman of Planning Commission has also observed that non-transparent procedures in land development inevitably leads to crony capitalism and corruption (Ahluwalia, 2011). According to some policymakers in the central Ministries and the Planning Commission, PPPs are being aggressively pushed at the political level and within the bureaucracy as this offers them substantial benefits for 'preferential policymaking' where private interests are taken care of more than social goals. In fact, although 58.2% of the population is dependent on agriculture for their livelihood (Economic Survey, 2011b) the Government has been acquiring irrigated agricultural land for making roads and carrying out commercial development of roadside land on the pretext of 'public purpose'. The Supreme Court, decrying such massive 'mindless' acquisitions of agricultural land, has severely reprimanded states that 'confer benefit upon private parties by acquiring land in the name of public purpose', noting that this would seriously imperil food security (The Hindu, 2011c). In one case the Supreme

Court has ruled that the highest market price should be paid for land acquisition to farmers rather than the average value (Times of India, 2012g).

Instances of land grabbing and the concessionaire misusing subsidies extended by the government have also been observed in PPPs in civil aviation and metro rail projects, where the government provides additional land at prime locations to the developer as an incentive. PPPs in some major Metrorail and airport projects have been severely criticised for the way in which the concessionaires have grossly distorted contract legalities through a maze of complex financial sub-ventures to reap huge gains illegitimately and causing enormous losses to the public exchequer (see Appendix 9 for cases of Hyderabad Metro and Delhi International Airport). A major reason for this lies in the poor contract management of the PPPs and ineffective regulatory mechanisms in these sectors. Even in the case of an offshore oil exploration project where the government is collaborating with Reliance Industries[53], according to media reports (NDTV, 2011)[54] the government has been found 'ill-equipped to oversee production sharing contracts' and it appears that the regulator 'allowed' the contract violation by lax oversight. Reliance Industries has been indicted of hoarding acreage and artificially inflating development cost by more than US$ 6 bn, thereby adversely affecting the government's profitability. While the case is not related to PPPs, it indicates towards systemic weaknesses within the government to handle contractual revenue-sharing collaborations with the private sector, the strong profit-motive driven actions of the latter, and absence of effective regulators.

A senior bureaucrat at MoRTH noted that there have been cases where private developers collude with the NHAI officials and the local *panchayat* functionaries to dig *panchayat* lands for aggregates needed for land-filling and do not pay commensurate royalty to the *panchayats*. While the developer has to pay royalty for the local resources used for the project according to prescribed rates, NHAI is required to verify the quantity to assess the amount payable. However, due to shortage of manpower this work is often offloaded to the IC. According to a respondent from IC of the Surat Dahisar project, the concessionaires mostly underreport the quantity of aggregates used. As per the CA, the IC has no powers to seek any clarification from the concessionaire and no means to verify these claims.

[53] Reliance Industries is one of the largest companies in oil exploration.
[54] Available at: http://profit.ndtv.com/news/show/cag-report-indicts-oil-ministry-reliance-calls-for-review-of-contract-176659 [Accessed 8 September 2011].

To address the issues of land acquisition and fair compensation, and strike a balance between the developmental needs and farmers' rights, the government has framed the Land Acquisition Rehabilitation and Resettlement Bill, 2011 to replace the colonial bill of 1894, which is awaiting approval of the Parliament. The term 'public purpose' has been tightly defined in the new Bill[55] that provides generous compensation for the landowner which is five-times the market rate in rural areas and two-times in urban areas. The Bill expects to cut down on delays in land acquisition caused due to poor compensation and thus speed up infrastructure projects. Private developers will also be required to fulfil stringent requirements for acquiring private land (Appendix 10). The private sector has almost unanimously termed the Bill 'disastrous' and a 'mindless idea', and one that will be 'anti-development' as it would make land economically unaffordable, hike up the project cost, and further delay the projects (Economic Times, 2011f; Times of India, 2011d). According to estimates, land price may go up by about 5% thus pushing up the total project cost by 8-29% (Business Standard, 2011c). These apprehensions also attach to the government agencies as cost of rehabilitation is required to be borne by them. In 2011, NHAI was spending around INR 12.5 mn/km of land acquired against INR 8 mn/km about two years back. This is expected to further escalate when the new Land Bill is passed and operationalised. The MoRTH is thus planning to build two and four lane roads more than six lane roads, which require relatively less land acquisition. Some states, such as Maharashtra, have raised concerns about the impact this Bill will have on development projects. The central Minister for Agriculture has also voiced strong reservations against the Bill, noting that with passage of the Bill, '[n]o new projects will be able to come up' (Indian Express, 2012b). Moreover, with passage of the Bill on the anvil, landowners are showing reluctance to give their land for projects as they are expecting higher returns once the Bill is approved.

14 Political economy of PPPs within states

Evidence from the sample projects and insights of private sector respondents from PPP projects in other states suggest that strong political support is a crucial determinant of success of PPP projects. According to Kuriyan and Ray (2009), PPPs are reflective of the political economy of the region in which they operate. All my respondents within

[55] Acquisition of property is a subject within the Concurrent list; hence both the national and state governments can legislate on this. The states are free to frame their own land laws such that they are not in conflict with the national law.

the sample projects unanimously acknowledged that political and bureaucratic support for PPP projects in Gujarat was substantially higher than in other states. They noted that there was greater acceptance of the PPP philosophy in the state, and they found politicians and bureaucrats more accessible and easy to interact with as compared to many other states where these public functionaries are highly autocratic.

In Gujarat, the pace of land acquisition is also relatively fast. For example, in the Surat Dahisar project the 3D notification, which is the third level of land acquisition, has already been published in Gujarat, the concessionaire said. In Maharashtra, work for even 3A had not been completed during the same period. The project has been stalled mainly due to lack of support from the local people in Maharashtra, he added. The concessionaire also cited example of their other ongoing national projects on NH 51 and NH 56 in Maharashtra where work has been going on for the past six years.

Business interests are found to be deeply entrenched in the mainstream political setup in Gujarat, as both mainstream political parties are observed to represent the interests of all principal business groups. This may perhaps be due to the history of business and trade of the state. There is a strong and demonstrated political support for any endeavour that benefits the business and industry at large[56]. Business federations are also active in lobbying with the government (Kohli, 2006). State-business relations have grown during the current government (Cali *et al*., 2011), although impetus has been provided by the economic policy choices and development oriented incentives of the previous governments.

A senior official at GIDB stated that Gujarat is the first state to have a parliamentary act for constitution of GIDB which promotes private participation in infrastructure projects through a well defined legal framework. Gujarat is also the first state to establish a 'single window' in 1978 i.e. iNDEXTb (Industrial Extension Bureau) to facilitate interaction of various industry-related departments with investors. The public agencies of the state government have aggressively pursued with the central government and the private sector to attract investment. This argument finds support in the work of Aseema Sinha. She notes that Gujarat's politicians and bureaucratic elites 'evolved a long-term and coherent infiltration strategy to deal with the constraining rules of the regulatory

[56] The state government has organised several 'Vibrant Gujarat' events where the business community from India and abroad are invited for investing in the state. Expenses for these functions run into several billions of rupees. This has attracted wide public criticism as the expenditure is from public taxes and many MOUs (Memorandum of Understanding) signed during these events between the government and the investors have failed to fructify.

system' to clear their proposals from the national government. The bureaucratic pressure almost akin to 'industrial espionage' sought to 'counter the barriers to entry posed by central rules ..[and].. bypass rules that could not be mitigated over time'(Sinha, 2003: 468). These actions, Sinha claims, ensured 'higher investment flows as well as a higher implementation of investment intentions' (Sinha, 2003: 472). The state bureaucracy therefore appears to have a legacy of working in a development-oriented political framework which pursues private participation, unlike many other states.

I argue that in case of highway projects, their 'high visibility' is a factor which tends to induce more political support as these projects have greater potential to be politically leveraged. Hence the political premium attached to their faster completion tends to be high. The political backing for these projects seems to decisively influence the state bureaucracy too. I argue that due to the strong and demonstrated political support for business ventures, discontent and protests by the people who are adversely affected by such infrastructure projects do not find political support and thus their movements are not sustainable. Protests caused by similar issues, like land acquisition and poor land compensation, spur people's movements in other states mainly because of the political support they receive. My contention is substantiated by certain instances which seem to be finding space in media reports recently, such as agitation by people of village Damud and Sakarda in district Baroda in Gujarat against widening of NH-8. The villagers have been demanding better compensation for their lands acquired by the state government for widening of the highway. However, the local officials reportedly do not listen to their demands and 'wrong versions' of the landholders' demands are conveyed to the higher authorities; the district collector stated that there is no resistance to the project (Indian Express, 2011f). There have also been reports of the state machinery in Gujarat bending backwards to attract TATA's[57] automobile factory which was evicted from Singur in West Bengal where the villagers led a strong movement to protest wrongful acquisition of their land. More than 2000 farmers in Gujarat are said to lose their fertile land to provide land for TATA's factory (DNA, 2009). Moreover, in another case farmers in south Gujarat have protested against the highly arbitrary, non-democratic and non-transparent manner in which the state government gave away their fertile land for setting up a cement factory by a leading industrial house (Indian Express, 2009). On the other hand, the protest in the eastern state of West Bengal found full support from the

[57] TATA Motors is one of the largest automobile manufacturers in the world.

opposition which resulted in the TATA factory (which eventually shifted to Gujarat) being shut down. Similarly, it was the support from the opposition parties which catapulted the farmers' uprising in the Yamuna expressway project in UP to the national level. These events galvanised country-wide demands for amendment in the archaic land acquisition laws. However, political support for such dissent has been found wanting in Gujarat.

15 Do PPPs always bring in private capital?

The literature on PPPs theorises that one of the main reasons for wider acceptance of PPPs as a mode of delivery of infrastructure services is the access they provide to private capital. This has also been reiterated by Planning Commission that states that PPPs 'must aim at bringing private resources into public projects, not public resources into private projects' and 'must be executed in public interest...at reasonable costs' (Planning Commission, 2008c: 256). Proponents of PPPs in the government and NHAI point out that the only liability to the government, if at all, is the viability gap funding which is not more than 40% of TPC, in any case.

However, a senior officer from the Transport Ministry dealing with PPPs mentioned that the only motive of the private sector in becoming associated with these projects is the easy access these projects provide to public funds. According to him, the argument of PPPs providing access to private funds is misplaced. The private developer generally finances 30% or less of the project through equity and about 70% or more of the project cost is borrowed from Financial Institutions (FIs) which is public money held by the FIs. Also, most of these projects have a profit margin of about 20% and more. The profit made from public money is not getting ploughed back for public works. In addition, he stated that although banks and FIs have sectoral margins for lending and cannot lend beyond the prescribed limit for road infrastructure projects, private developers have managed to circumvent this provision. Funds are available for low cost housing, and this clause is used by the developers by incorporating low cost houses in the townships planned in the land surrounding the highway or expressway (for example, the Yamuna-Greater Noida expressway). In addition, low-interest loans are also provided by banks for setting up educational institutions. Private developers obtain these funds as well by including schools and colleges in their township development schemes. Such schemes get legitimised when a large section of the middle class population invests in them. He further stated that for a project of size of INR 6.5 bn, the

private developer generally brings about INR 3 bn and borrows INR 3.5 bn from banks and FIs. Less than INR 4 bn of this amount is spent on the project. The remaining money is removed or channelised in fake transactions and fictitious works such as earth work which is sunk-in activity and relatively difficult to be measured and ascertained completely. This was corroborated by a senior officer from Planning Commission working on PPPs, who stated that most developers do not bring their own equity to the projects but depend heavily on debts and borrowings.

Focus on long-term funding for PPP projects is assuming top priority within the policymakers as lack of long-term sustainable finance has been a key constraint in scaling up of many projects (Lall and Mohanty, 2008). A high ranking official at MoRTH observed that the concessionaires are '*short of funds; they do not have enough equity...and enough debt that they can draw*'. The Planning Commission respondent informed me that often the high cost of debt service tends to affect ability of concessionaire to raise cheap long-term capital because of the still poorly developed domestic bond market for long-term debt instruments. Financial closures are delayed in many projects due to unwillingness of banks and financial institutions to finance projects on account of revenue risks as projected by concessionaires, stated a NHAI officer. In addition, the delay in completion of PPP projects is also making the funding agencies wary of their sustainability and viability. Due to such delays the difference between the estimated TPC and the actual cost varies, and the project fails to take off in absence of long-term financing. The aggregate lending by banks to infrastructure at the end of June 2011 was more than INR 5526 bn. Of this, power accounted for about INR 2923 bn (52.89%), telecom INR 943.19 bn (17.05%), while roads received INR 990.38 bn (17.92%) (Economic Times, 2011h). A senior officer at MoRTH pointed out that long-term funding of PPPs is an issue as concession periods typically last about 25-30 years, and banks in India do not have long-term funding options. In addition, the outflow is relatively more during the initial years of construction, and this may increase due to various construction risks. The revenue inflow, which is fixed, starts only when the project commences operations, he explained. This makes debt servicing difficult. Rising interest rates to curb inflation have made PPP projects in infrastructure less attractive, particularly for the small companies. There have been 11 interest rate hikes between March 2010 and September 2011. As the TPC increases, the VGF will also rise resulting in enhanced burden on the government to finance these projects, mentioned my respondent. To address these issues, my respondents at Planning Commission and

MoRTH stated that a high level committee has been constituted in the Planning Commission to suggest ways to finance infrastructure during the 12 FYP. The Finance Ministry is also working on the regulatory mechanisms to generate long-term funding options which constitute the 'macro-balancing' of PPP.

In a significant decision taken in early 2012, the government has decided to fully fund at least 2,500 km of 7,200 km (constituting about one-third) of the national highway projects planned for 2012-2013. Another 1,500 km are expected to be awarded on basis of cash contracts. Many of these are two-lane roads which have not evinced much interest from the private sector. This was informed by the Transport Minister during his press conference, in April 2012, which I attended.

16 Absence of independent evaluation of projects

According to Hodge (2006: 318), PPPs are 'hotly disputed and poorly evaluated' in most of the countries. There have been no analytical studies in India to examine the comprehensive cost of construction and operation of a road transport facility throughout its life cycle although policymakers and analysts have expressed concerns about the enormously high investments in PPP projects, a Planning Commission official stated. He said that '*we need to evaluate them [PPP])...that whatever we have done does give us value for money. And then you get lessons from them. Instead of dogmatically saying that PPP has been very successful and all that*'. Moreover, there has been no objective analysis regarding the operating cost to the user largely due to the non-availability of sector-wise comparable data. According to a media report, MoRTH had estimated the cost of civil work at INR 140 mn/ km for four-lane expressways and INR 200 mn/km for six-lane roads under PPP mode (Business Standard, 2010f). However, another estimate indicates the respective figures as INR 115 mn and INR 130 mn (The Financial Express, 2011h). Thus, it is difficult to comment on whether the cost of road construction within PPP is more or less than the traditional procurement method.

Additionally, the two modes operate within different frameworks of construction, finance and management. Some expert respondents admitted the PPP mode to be costlier but justified it on the basis of bundling of costs and allocation of risks, while maintaining that a simplistic comparison between the two modes is found to be illogical. In India inadequate project accounting and non-use of VfM comparator further aggravate the comparison, although the adequacy of the notional Public Sector

Comparator (PSC) has been questioned in some countries in the EU (Hall, 2008). Within the PPP mode itself, there have been significant discrepancies. As mentioned in the previous sections, while some developers have asked for grant, others have quoted huge premium for the same project. A senior officer in the Planning Commission noted that given the fact that there is little or no idea regarding costs within the two modes, there is a need for cost controls. Moreover, he also noted that '*you give PPP projects, generally, all clearances, land acquisition and everything done for them. But wherever these things are available, the traditional method has not done so badly. So therefore, question is that whether we should provide similar conditions to the traditional modes of construction also. And then evaluate*'.

Moreover, whatever evaluation is on record is rather subjective. Some respondents among the policymakers, experts and analysts opined that PPPs are being blindly executed in various sectors because the government is promoting PPPs as a philosophy and policy, and some politicians, bureaucrats and the private sector are apparently benefiting by this. A senior official from Planning Commission stated that PPPs are being perceived within a certain section of the policymakers to be the panacea of all infrastructure ills within the country, and are thus being pursued like a *Dharma*[58]. He stated that '*[T]hey are thinking that this moment this has to be done. There is no long term thinking*'. He also informed that during one of the previous national governments when the philosophy of PPP was being introduced in the country, they seemed to be 'driven by more [reasons] than public-sector deficits, debts and scarce resources' (Boase, 2000: 77). There was a concerted effort within a section of the national level politicians and bureaucrats to inflate the infrastructure deficit within the country. The purported vision and stated objective was to provide 'world class roads'. In order to meet this aim, the technical specifications were hiked up which made the project cost and thus the investment very high. Thus an 'artificial and unrealistic infrastructure scarcity' was allegedly projected which required huge investment that could be addressed through PPPs, as the government was shown to be having inadequate financial resources to meet such investment requirements along with its various social commitments. This philosophy also had potential to provide additional and significant business opportunity for the private banks and financial institutions and was therefore overwhelmingly favoured by them, my informant said.

[58] *Dharma* means religion.

The respondent at the Planning Commission narrated a discussion that took place at Planning Commission regarding the Hyderabad metro-rail project some years back, in which he was present. Mr. E. Shreedharan, the then head of Delhi Metro, and an eminent technocrat who was part of the working group, was sceptical about opting for PPP mode for the project as it would entail giving away public land at extremely cheap rates to the private developers as an incentive for them to invest for the project. Moreover, the revenue models within the country were not evolved enough to support such partnerships, according to Mr. Shreedharan. He recommended implementing it under the public sector, similar to the Delhi Metro. Within the Delhi Metro, one route was given to a private agency on an experimental basis. The government had to eventually execute the route due to incapability of the private partner to implement it (Times of India, 2012h). Mr. Shreedharan's opinion did not go well with a section of the Commission which strongly advocated for the PPPs citing reasons such as resource crunch. They argued that a high premium was being offered by the concessionaire which justified the PPP mode.

The recently formed high powered Working Group on Urban Transport of the Planning Commission (Planning Commission, 2012) has rejected the PPP model for developing core urban infrastructure projects, particularly metro-rails. It has argued that unstable revenues of these projects make them commercially unviable and the private developers cannot sustain them without significant government assistance. The Group further noted that metro-rail services in as many as 88% of the 113 cities across the world are developed and operated by the public sector. It has recommended government procurement of these essential services arguing that the PPP mode results in high project costs and high user charges. The Group has suggested that only 20% of the metro projects in the country should be taken up under the PPP mode over the next five years while the remaining projects should be funded by central and state resources with adequate financing from domestic and multilateral lending agencies. Supporting this view, a high ranking official at Planning Commission said that '*[W]hat we must ensure is that efficiency of this [people's] money, if that can be enhanced, than how can that be done within the PPP*'.

This kind of advocacy among top policymakers in the country seems to reflect allegiance to a neo-liberal discourse in economics and an NPM and post-NPM thinking in many of the top bureaucrats who perceive that solution to India's infrastructure problems can be sought with technologically sound options and focus on *contestability*

and *user choice* doctrines. Such myopic measures which are 'largely structural, functional, regulatory, and technical' seek 'managerial and economic solutions to complex problems' (Jun, 2009: 165 and 161) while ignoring the larger and more crucial issues of social justice and equity. While NPM 'actively promoted...outsourcing, privatization and partnerships, ...the basic conditions for success did not exist' (Argyriades, 2001: 25). The absence of detailed and holistic evaluation of PPP projects at the national and state levels encompassing economic and non-economic outcomes, despite the PPP model having been more than a decade old in the country, seems to support this argument. A senior officer in the Planning Commission commented that care needs to be taken that the country does not land in a situation where 'we get stuck with a stock of so much infrastructure which may not be used'.

17 Conclusion

This chapter analysed the empirical findings from the sample PPP projects in national and state highways. The analysis revealed the multi-layered underlying structures and mechanisms that result in the distinct features of PPPs in highways in India in terms of roles of the two partners, the allocation of risks and responsibilities, and the nature of collaboration between the public and private agencies. While PPPs in highways in India depict several features of PPPs as discussed in literature, the chapter demonstrates that many theoretical propositions regarding Public Private Partnerships do not hold true in the Indian context.

A significant finding in this chapter is that major delay in PPPs in highways in India is caused not due to the private partner, but due to various issues relating to the public partner. Acquisition of land for the projects, obtaining environmental and other clearances and shifting of utilities located under the roads cause the maximum delay in PPPs projects in the country. This chapter has also shown that in addition to these aforementioned tasks which are to be carried out by the public agencies, other responsibilities such as coordination with various agencies and government departments, negotiating with the people affected by the project, the landowners etc., are normally also passed on to the concessionaires. The factors causing the public partner to shift its share of responsibilities are found to emerge from the administrative, economic, politico-bureaucratic, institutional and attitudinal layers underlying the private and public sectors. Several issues within the public sector such as the lengthy administrative procedures, adherence to archaic laws, under-staffing, lack of adequate

competence, weak coordination with other agencies, issues of centre-state relationships, lack of sturdy regulatory institutional structures, strong politician-bureaucratic-private developer nexus and are found to shape PPPs in India.

On the other hand, the private sector has been found to grossly misuse the government incentives, such as land surrounding the highways, in several projects causing substantial loss to the public exchequer and ignoring the larger public interest for which they have been made partners in the projects. This chapter showed that PPPs in highways in India do not always bring in private capital and are, on the contrary, straining the government resources. In addition, the political economy of the states is found to play a key role in shaping PPPs in the country.

Although PPPs in India reflect a policy shift from the traditional means of service delivery, differing mandates and ideologies of the State and private sectors play a significant role in the way the PPPs are operationalised in the country.

The chapter reveals that although PPPs are being promoted as an effective alternative to government delivery of services, in absence of reliable data and objective evaluation of the projects to inform and support such claims, it may be too early to arrive at any conclusive judgment on this account.

The chapter points towards an important role for the State in governance of PPPs. It underscores the need to strengthen the State institutions so that the public agencies may desist from shifting their share of responsibilities to the private partners. In addition, robust mechanisms for monitoring, supervision and regulation of the projects need to be instituted to ensure that the PPPs achieve their stated outcomes, and to protect the larger public good.

The next chapter summarises the analyses of the key findings of this research and presents the main arguments of the thesis, based on the empirical analyses of the PPP projects in highways and urban road transportation. Policy implications of the findings are articulated, and recommendations for the State and the private partners are put forth. The chapter also outlines areas of further research.

CHAPTER 8

SUMMARY ANALYSIS OF KEY FINDINGS, RECOMMENDATIONS AND AREAS OF FURTHER RESEARCH

1 Introduction

This chapter provides summary of the key findings of the research and presents the main arguments. This is accompanied by recommendations aimed at enhancing the effectiveness and efficiency of PPPs in highways and urban transportation in India. The chapter concludes by outlining areas that can be taken up for further inquiry.

2 Studying PPPs in roads sector in India

Public Private Partnerships (PPPs) are being widely adopted by many governments to supplement their efforts to fill in the infrastructure deficit. This is driven by the presumptions of better efficiencies in asset creation and management, and superior service delivery by the private sector. A growing body of evidence however reveals serious issues regarding the PPPs in respect to their transparency, accountability, equity, as well as the risk of agency and elite capture. Studies have revealed that claims regarding their economic superiority, profitability and effectiveness are often based on subjective criteria and flawed evidence. Evidence also points towards excessive profiteering by the private partners, hidden wealth transfers to the financiers and subtle yet definite political power shift towards the private sector, facilitated by the power of private capital. Claims towards faster implementation of projects have also been questioned by scholars.

In India, PPPs have found political favour and a distinct policy shift has been observed towards these modes of service delivery, particularly in the infrastructure sectors. India has the second largest road network in the world. The central government has doubled the targeted investments in the road sector for 2012-2017 over the immediately preceding corresponding period. About half of these investments are expected to come from the private sector.

Growing evidence from research on PPPs, however, advocates a cautious approach towards these modes accompanied with an informed discussion regarding their

governance aspects. While in the diverse contexts of road transport in a vast country such as India, the empirical evidence base to suggest whether PPPs have been able to bring private efficiencies in delivery of public services has been inadequate and sketchy. Additionally, policymakers seem to be anchoring their arguments more on anecdotal evidence.

Against this background, this research set out to study PPPs in highways and urban transport in India with the aim to examine the underlying structures and mechanisms shaping these PPPs, and suggest measures to achieve better efficiencies in delivery of road infrastructure services. In order to explore whether PPPs are 'partnerships' and operate as 'policy networks', as defined in the literature, I examined how the roles, responsibilities, risks and benefits are divided between the public and private partners in the Indian context, and to what extent are private sector resources being invested in these projects. In cases where these differed from normative description, I examined and identified the causal factors resulting in this deviation. Deeper knowledge into structures and mechanisms of the government and the private partners helped to inform recommendations to achieve better efficiencies of PPPs in delivery of road transport services.

In order to gain deep insight into PPPs from three different administrative levels and to compare and contrast the issues of governance, I purposively selected two projects each of national and state highways, executed by the central and state governments respectively, and one intra-city transportation project implemented by the city civic body. All these projects were selected in the western state of Gujarat to keep the political and geographical variables constant.

3 Division of roles and responsibilities, and allocation of risks between the government and the private partners

3.1 Diverse forms of partnerships

Study of PPPs at three different levels, viz. at intra-city, state and national levels, indicates that various forms of partnerships with the private sector exist on a continuum of sharing of roles, responsibilities, risks and benefits. The nature of partnerships is largely determined by the objective of partnering with the private sector, modes of financing, prevailing revenue models in given sectors, funding schemes of the government, concession agreements, regulatory provisions, monitoring mechanisms,

institutional structures, resources and capability within the two sectors and the socio-politico-bureaucratic environment within which these partnerships operate.

3.2 ABRTS model of PPP

The ABRTS significantly differs from the highway projects in terms of allocation of roles and responsibilities as well as sharing of risks between the public and private partners. The partnership model followed for ABRTS is qualitatively different from what is being followed in the highway projects in India.

Success of urban infrastructure PPP projects in India is observed to be constrained by the limited capacity of the local civic bodies to structure and manage such projects. The Ahmedabad Municipal Corporation attempted to address this limitation by designing unique models of partnerships that were entered into with an academic institution, an international NGO in public transport and mobility, and diverse stakeholders such as the city people, the city traffic police, the private transport owners and operators, government bus operators, experts, media and academicians. The outcome of these partnerships is that mistakes of similar projects in India and other countries have been avoided and the project has been made more user-friendly. Similar projects in other cities have not been able to achieve their envisaged outcomes as they failed to adopt measures to address the issues relating to inadequate capability within the civic bodies.

Weak revenue models of urban infrastructure services, lack of sufficient capability within the private sector and thus the inability of a single concessionaire to take up the entire project, resulted in unbundling of the activities and allocation of risks and responsibilities to the partners most competent to bear them. This also resulted in re-bidding of tenders for various services.

This research has revealed that not only are there insufficient capacities within the private sector in urban infrastructure sector in India, the PPP projects such as ABRTS may serve to build capacities in the non-State actors such as the bus builder, CEPT and State run ITMS providers.

The principal features of urban infrastructure in India include non-excludability, inelastic price demand, and huge capital investments with long gestation period. These factors do not encourage private investment as there are no assured returns on such

investment. Therefore, unlike in other typical PPP models the revenue risks are not passed on to the bus operator in the ABRTS. The bus operator is given an assured mileage per month irrespective of the ridership as an incentive to invest in bus building.

3.3 PPPs in highways

A key finding of this research is that unlike the intra-city PPP project where the State agencies have borne its share of risks and responsibilities, in the highway projects the public partner has passed on a large part of its share of responsibilities to the private partners. Private concessionaires have to actively coordinate with various State authorities in matters of acquisition of land for the project, getting necessary administrative and environmental clearances from the concerned government departments, and shifting the underground and other utilities that lie in the right-of-way of the highways. As generally most of the concessionaires do not have adequate competence to handle these additional specific tasks, the risks associated with them are significant owning to the scale of these projects. These risks are being borne by the concessionaires instead of the government.

4 Investment of non-State and private sector resources in PPPs

Both the intra-city transportation and the state as well as national highway projects were observed to be significantly deviating from the theoretical propositions on PPPs regarding investment of resources by the private sector. The reasons for this were however found to be varied in both cases.

4.1 Private finance is not the predominant feature of all PPPs in India

Despite the widely-circulating argument of attracting private capital for providing public good to justify increasing preference to PPPs as a mode of service delivery, this research reveals that the PPPs do not necessarily bring in private capital for public projects. The argument of PPPs providing access to private capital appears to be thus misplaced.

ABRTS has debunked the myth of private sector being needed mainly because of the capital it can bring into such projects. The project has been substantially financed by the State which has reduced dependence on private finance while still benefitting from private sector efficiencies. As a majority of urban bodies in India do not have adequate financial resources, their capacity to invest in the urban infrastructure projects is

severely constrained. At the same time, it is also essential that such PPPs are mainly financed through the resources of the public partner as there very little incentive for the private partners to bring in private capital through a BOT model. In order to address these constraints, the government of India designed Jawaharlal Nehru National Urban Renewal Mission (JnNURM) for financing of urban infrastructure development projects and making provisions to absorb revenue risks for such projects by the government.

ABRTS has demonstrated the importance of leading role being played by the State in championing, structuring, funding and governing such PPPs. This has also underscored significance of the central government funding in federal democracies towards the projects of local governing bodies that are unable to finance such capital intensive ventures due to several institutional limitations.

In the highway projects also, it is observed that most concessionaires do not bring their own equity to the projects but depend heavily on the financial incentive schemes of the government and debt-funding options of the market. As private equity forms a small portion of the total finance in most PPP projects, the State has to increase its borrowing from the market in order to finance them. A significant finding of this research points to a phenomenon wherein rather than bringing in capital, the private partners seem to be getting engaged with such projects due to the easy access these projects provide to public funds. Moreover, private banks and financial institutions seem to be overwhelmingly favouring this mode as this provides an additional and significant business opportunity for them as well. This finding corroborates the findings of Shaoul (2011; 2009) in case of PPPs in the UK.

Additionally, apart from depending heavily on government incentives and market borrowing for financing PPPs, increasing instances of land grabbing by the private partners through the route of PPPs are also being observed.

4.2 Land grabbing by private sector through PPPs

Due to high levels of population density in the country and land being a scarce resource, issues of land acquisition for public infrastructure projects have assumed critical dimension in the country. PPPs in highways are characterised by increasing instances of land grabbing by private developers, and the State machinery allegedly bending backwards to accommodate their interests to seek rents. The State machinery acquires prime land surrounding the highways for stated ‘public purpose’ and offers it to the

concessionaires at very low prices as an incentive to invest in the highway projects. While the private developers make substantial profits through commercial exploitation of land, the landowners are poorly compensated. Worse still, many of the original landowners lose out almost their entire livelihood and the compensation received is not sufficient for them to generate alternative livelihoods.

Evidence indicates collusion of the public agents with the private sector developers and a deep-seated bureaucratic-politician-developer nexus driven by strong power-money combination contributing to this situation. This situation has prompted many real estate developers and construction companies to transform themselves into infrastructure concessionaires to take advantage of the substantial potential in the sector. Non-transparent procedures in land acquisition and development inevitably lead to crony capitalism and corruption. This allows discretionary policymaking resulting in large illegitimate gains to the private developer and substantial level of rent-seeking by the decision makers, which seems to be one of the reasons why PPPs are being aggressively promoted in India at policy levels.

4.3 Technical and manpower resources

One of the strengths of PPPs is argued to be the innovations the private sector can bring to the projects in terms of technology and management practices. However, as this research has revealed, the failure to bring in 'innovations' in many PPP projects in highways by the concessionaires has been a major cause of conflict between the government and the concessionaires. When applied, the innovations are generally found to have been undertaken with the aim to financially benefit the concessionaires, sometimes even compromising on the quality of the project. The ambiguity regarding the clause on 'innovations' in the concession agreement, is also found to be partially responsible for this.

Although private finance and private sector-driven innovations in technology and management practices may not be a predominant feature of all PPPs, this mode is being preferred by the policymakers for the improving efficiencies in survey, designing, construction, maintenance and operation of services. This research finds that the ABRTS and highways have benefitted by the technological and manpower resources of the private partners. Within the PPPs several risks related to manpower, their management and maintenance of the asset and its operation were observed to have been

borne by the private partners. These areas have been deficient in the traditional contracting mode for providing public good resulting in poor services. The knowledge and experience of its non-State partners such as CEPT, ITDP, private agencies and other stakeholders has significantly contributed to the success of ABRTS.

5 Factors shaping PPPs in road infrastructure in India

As mentioned earlier, this research indicates that PPP projects in India are largely shaped by the overall objectives of such partnerships, modes of financing, funding schemes of the government, prevailing revenue models in the given sectors, resources and capability within the two partners, institutional structures, concession agreements, regulatory provisions, monitoring mechanisms, and the socio-politico-bureaucratic environment within which these partnerships operate.

5.1 ABRTS model of PPP

The ABRTS has been shaped by the unique nature of urban infrastructure services and the institutional features of the urban local bodies in India. While the AMC was severely constrained by its limited capabilities to structure and manage such urban transportation projects, it was also found that the prevailing capabilities within the private sector regarding such projects were under-developed in India, as well. In order to address these constraints, AMC entered into innovative partnerships with different non-State agencies such as CEPT and ITDP for designing and structuring the project. It also partnered with other stakeholders to broad-base its decision making, enhance the acceptability of the project and deliver user-friendly services. Additionally, as a measure of addressing the constraint of limited capability within the private sector, various activities of ABRTS were unbundled unlike a typical PPP project where a single private agency provides all the services.

The principal features of urban infrastructure in India comprise non-excludability, inelastic price demand, and huge capital investments with long gestation periods, coupled with weak revenue models of urban infrastructure services. While these do not encourage private investment in large urban infrastructure projects due to lack of assured returns on such investment, they also prevent passing of revenue risks to the service provider. The AMC has therefore retained the revenue risks with itself through assured monthly mileage to the bus provider. Moreover, as the urban local bodies in

India are generally characterised by non-flexible, buoyant and poor financial resources and high degree of dependence on the state government, the central government is substantially funding the urban infrastructure projects in India through programmes such as the Jawaharlal Nehru National Urban Renewal Mission (JnNURM).

5.2 PPPs in highways

As has been analysed in the preceding paragraphs, the highway projects in India differ from the widely accepted PPP models in terms of the public agencies shifting their share of responsibilities to the concessionaires in matters of land acquisition, shifting of utilities and getting necessary administrative clearances and approvals. A major reason for this is the acutely under-staffed public agencies due to which officers cannot actively follow up with the other concerned departments. There also appears to be a tacit understanding among the public functionaries that the concessionaires are ready to do 'almost anything' to 'assist the government' to expedite the project, as any delay would adversely affect their profits.

Additionally, PPPs in highways in India suffer from serious delays primarily due to delay in land acquisition and getting government approvals and clearances which are the responsibilities of the public partner. This research finds that such delays are caused mainly because of the archaic laws governing land acquisition and compensation resulting in stiff resistance from landholders to part with their land, and the stringent environmental and forest laws. The other reasons contributing to the delay include weak coordination among concerned departments due to poor follow-up, inadequate devolution of powers to field officers, differing priorities between national and state governments within a federal set-up resulting in lack of ownership of projects, and prevailing mindset of a large number of public functionaries that still consider the concessionaires as 'contractors' rather than 'partners'.

5.3 Local political economy as a key component shaping PPPs

This research reveals that PPPs in India are strongly reflective of the political economy of the states which determines the orientation of policies of the state government and significantly influences the State-business relationship. While similar opportunities in terms of enabling frameworks, funding etc. are also available from the central government to the other states, few states have made the kind of progress in PPPs that

Gujarat has achieved. There is a strong and demonstrated political support for any endeavour that benefits the business and industry at large, which has been observed to be a crucial reason for the success of the Ahmedabad BRTS and PPPs in other sectors.

5.4 Private sector not treated as a 'partner' by all government departments

The research also reveals that generally the private concessionaires are not treated as *partners* (as generally described in literature) by various government departments. It is only the executing government agency that considers the concessionaires as *partners* to some extent. For other concerned government departments they continue to be the '*private sector*' and are treated as '*glorified contractors*'. A general feeling of distrust persists within these departments where the private agency is seen to be constructing something '*for* the government' and not '*in partnership with* the government'. This causes deficiency in support towards the PPP projects by the other concerned government departments. This in turn results in delayed clearances and approvals, which eventually delay the overall implementation of the projects.

Moreover, it appears that the profit motive of the private sector is yet to be accorded legitimacy by a large section of the bureaucracy with the result that the private sector is kept at an arms-length. This perception seems to have been shaped by several highly publicised cases of PPPs in different sectors where the concessionaires have themselves not acted as responsible partners and indulged in opportunistic behaviour aimed at making illegitimate gains at the cost of the users through acts such as land grabbing, under-reporting of traffic and manipulation of the contract obligations.

5.5 Misalignment of goals of the partners

There appears to be a fundamental difference in ideologies of the private and public sectors regarding goals and expected outcomes of the PPP projects. While the public sector has a social mandate, the private sector is driven by a profit motive. The traditional mistrust for private profit within the public sector emanating from its socialistic structure seems to have further accentuated the practical implications of such a difference in ideologies. These factors taken together are found to be largely responsible for misalignment of goals and priorities between the two sets of partners.

Evidence suggests that PPPs in India are predominantly contract-based collaborations, and the 'trust', as is claimed to be the binding glue between the partners in PPP

literature, is found to be largely missing. The PPPs in India may not be '*power*[59] *relationships*' but they are also not the '*partnerships*' in the true sense of the term as yet. In the absence of reciprocity and trust, partnerships tend to ignore larger public interests, and potential gains from the PPPs are thus diminished.

PPPs in India are not found to have been significantly addressing the dysfunctionalities of the State, and the market, and the projects continue to be affected by inadequacies of government decision making and market imperfections. Thus, while there is no denying the improvements in efficiency that 'networks' and 'partnerships' can yield, the practices of agents largely determined due to inhering within *a priori* and relatively enduring structures, such as those shaping State-market relationships, constitute major constraints in achieving this.

6 Significant findings of this study

Three significant findings emerge out of this study of PPPs in road transport infrastructure in India, at the empirical level. These are important as they fill the gap in the existing knowledge and literature on PPPs, from the perspective of a developing country such as India. They seem to support the argument of some authors (Hodge, 2009; Osborne, 2000; Atkinson and Coleman, 1992) that PPPs reflect the broader socio-economic, cultural and country context in which they operate.

6.1 Time and cost over-runs of PPPs in road transport primarily due to the public partner

Contrary to the findings of several studies which point out that the time and cost over-runs of PPPs in most countries are caused by the private partners not meeting their share of responsibilities, this research has revealed that while PPPs in road transport in India have not been able to avoid time and cost over-runs, they have been largely and primarily due to the government agency. Two reasons have contributed significantly to this- lengthy process of land acquisition and environmental clearances which have delayed projects by as much as 2-6 years. Archaic land laws, poor land records, inadequate compensation to landowners, stringent environmental laws, complex and non-transparent administrative procedures, inadequate manpower with the public partner, weak and lengthy process of coordination with the disparate stakeholders, lack

[59] Power is defined as ability of actor X to make actor Y to act or behave in a way it would have not done otherwise (Dahl, 1964).

of feeling of ownership among the state level agencies particularly towards national projects have been identified as the primary causes leading to this delay.

6.2 Private capital not predominant feature of all PPPs in road sector in India

Evidence through this study has revealed that not all PPPs in road sector in India benefit by private capital. The Ahmedabad BRTS has been financed by the State due to weak revenue models in urban infrastructure services which do not provide adequate incentive to the private operator to invest in the project. Although, the project has a high degree of private sector involvement to benefit by their efficiencies in service provisioning. Private partners in highway projects also seem to be depending more on debt financing and VGF options of the government. The number of annuity projects has been reduced due to the increasing debt burden on the government. As a result the State has had to increase its borrowing from the market in order to finance PPPs.

6.3 Land grabbing by the private partners

Another significant finding of this study is that PPPs in highways have resulted in extensive land grabbing by the private sector in India. In most PPPs, the State acquires land surrounding the project at cheap prices and provides it to the developers as an incentive to invest in the project and to make the project financially and commercially viable. While on the one hand the landowners lose their land and livelihood, they are poorly compensated on the other hand. The concessionaires have generated huge illegitimate gains through commercial exploitation of the land which have not been shared with the project affected families. This has caused major social upheavals in many areas where the big PPPs projects are been taken up. This also reveals a deep-seated bureaucratic-politician-developer nexus exhibiting a strong power-money combination.

6.4 Significant findings of the research at the theoretical level

At the theoretical level this study has revealed that within PPPs in road sector in India the private sector is generally not treated as a ‘partner’, in the way the term is defined in literature, by the various government departments. There seems to be a misalignment of goals between the public and private partners rising out of the fundamental difference in ideologies of the two sectors, resulting in a ‘trust’ deficit. This study has further revealed that PPPs are strongly reflective of the political economy of the region.

7 Suggested measures to strengthen the existing structures and mechanisms within the State and the private sector to improve the efficiency of PPPs

This study reveals that the State agencies are not being able to fulfil their roles and responsibilities adequately in the Indian context due to lack of capabilities of the institutional arrangements designed for the purpose.

The study finds that success of PPPs largely depends on the better understanding of risks which reduces the premium attached to them, clearly formulated concession agreements with optimum risk allocation to effectively deter opportunistic behaviour of private sector partners, clauses for service standards and penalties, and effective monitoring of the projects by the government. However, the public partners are not found to have adequate competencies in the aforementioned areas while the private partners generally possess superior competencies in such financial and legal matters. Combined with the deficient existing regulatory mechanisms, the private partners are able to manipulate contractual arrangements in PPPs in India, frequently resulting in significant revenue loss to the government.

While capability enhancing measures at the lower and middle levels within the government have not been taken up on a large scale, attempts to induct professionals from the private sector at senior levels have not been successful primarily due to proclivity within the bureaucrats to protect their turf. They seem to be reluctant to share their decision-making powers with non-bureaucrats. Political leaders are also not fully supportive of this move due to a perceived apprehension that it may result in private sector interests dominating public policies.

It is therefore imperative for the success of PPPs that the capacity of the bureaucracy at all levels including the political executives is adequately built, and government functionaries at all levels are made aware of the importance of upholding the true spirit of partnership with the private sector within the PPPs.

7.1 Suggestions for the State and the private partners aimed at improving the efficiency of PPPs

This research recommends that the State should play a key role to strengthen the public institutions as ‘efficiency and effectiveness of infrastructure provision derive not from general conditions of economic growth and development but from the institutional environment’ (World Bank, 1994: 26). This can be ensured by providing the State

agencies with professionally competent staff in adequate numbers, instituting requisite delegation of powers, changing the recruitment and retention rules that would create a cadre of permanent staff, and extensively training the staff on the laws governing PPPs, contract management and financial and legal matters.

The study further reveals that the guidelines and manuals on construction and maintenance of PPP projects such as the IRC guidelines are not adequate to meet the specific requirements of PPPs in road infrastructure. Various provisions in the guidelines and manuals were found to be contradicting each other, and are sometimes the source of conflicts and disputes between the public and private partners. There is thus the need of continuous revision in such guidelines and documents to meet the emerging requirements and accommodate the new knowledge accumulated through executed projects and international experience. Periodic consultations with stakeholders and experts can substantially enhance their effectiveness.

This research also highlights the need for creation of empowered and independent regulatory bodies at state and national levels to balance public and private sector interests. Regulatory bodies at state levels may also be entrusted with the regulation of urban road transport infrastructure projects. Conflict of interest can be prevented when executive and regulatory functions are not clubbed under one body. Furthermore, effectiveness and credibility of regulatory bodies may be enhanced by depoliticising them and providing them with independence from political interference, clear mandate, enlarged scope along with operational and financial autonomy, and members with sectoral expertise. Their mandate may be enlarged to prevent anti-competitive practices within private sector by setting up sufficient checks and balances. Moreover, best practices from regulators in other sectors may be adopted. Strong political and bureaucratic will may however be needed to create and sustain such institutional structures. Effective regulation in a PPP is known to support accountability of the private partner (Hodge and Coghill, 2007) as well as the public sector.

As suggested by Scott (2000: 38), ‘additional or extended mechanisms of accountability in supplementing or displacing traditional accountability functions’ may be explored for these emerging modes of service delivery where the private sector is a partner. Standards of probity and accountability within the public bodies may be achieved by setting up internal benchmarks and more intensive use of appropriate technology in bidding, inter-departmental communication and decision-making, as the traditional tools

may not be adequate for the purpose. Such benchmarks and technologies can bring about enhanced degree of transparency and shorten the pre-construction phase. Rules of business including clear reporting lines and indicative timelines for approving the proposals may also help to expedite the projects. Moreover, stringent enforcement of laws is expected to go a long way in improving credibility of public organisations.

In addition to public sector accountability, this study suggests that it is equally and perhaps more important to establish 'aggregate accountability structures' (Freeman, 2000) for the diverse private partners which bring their own, and sometimes diverging, interests. While at a higher level an effective regulatory body can ensure this, private partner accountability at the field may be effected through stringent agency oversight which may in turn require adequate and experienced manpower working within robust administrative rules. Increased use of technology in tolling can effectively reduce operational malpractices, and significantly enhance quality of service and user satisfaction.

This research suggests that the misappropriation of incentives and clauses of concession may not be so much due to incapacity of the private partners to comply but more due to their intention to not comply. While private sector self-regulation is debated to be difficult to instil, it is found to be an important tool to enhance their credibility and demonstrate their commitment to the shared objectives of the partnership. This may perhaps also contribute to removing the feeling of distrust prevalent among many government functionaries towards the private sector.

Additionally, information access laws can further enhance accountability of various partners to the citizens and promote transparency. Modern technology has made wide distribution of information virtually costless today. In order to infuse greater confidence in PPPs, it may be beneficial to pro-actively disclose project information through means such as the internet, including, but not restricted to, phases of bidding, evaluation of bids, tender and contract stipulations, performance assessments, penalties imposed and people's suggestions. Right to Information (RTI) queries and responses to these may also be posted on project websites. A structure for grievance reporting by consumers and their redressal may be an effective methodology to enhance stakeholder participation in PPP projects (similar to the Hospital Montfort P3 project in Murphy, 2008). Moreover, as the CAG reports provide substantive evidence of financial and

procedural lapses and wrongdoings, acting on their recommendations may address accountability issues of PPPs to a large extent.

As this study reveals, PPPs require close coordination within the concerned government agencies. Serious delays are caused by policy logjams due to inter-ministerial and inter-government differences, regarding matters such as environmental clearances and land acquisition, and lack of effective interaction. A 'joined–up' State, at the national and state levels, to facilitate a more deep-seated inter-departmental coordination to develop innovative responses to challenges faced by the State can significantly remove many hurdles in implementation of PPPs. This can be furthered through bodies such as the Inter-State Council[60], which has the legal mandate to coordinate between the national and state governments in the matters of 'common interest'. This role of the Council however needs to be revived. The Planning Commission as part of the National Development Council (NDC)[61], and playing a key role in infrastructure planning, can help to stimulate coordination among different governments.

The state governments play a crucial part in implementation of PPPs. With closer coordination between the national and state agencies, advance planning may be done in state departments for the projects. A single window agency that coordinates with the concerned departments of state government for matters such as land acquisition and compensation, shifting of utilities, and clearances may be considered. A senior officer within the state may be made in charge of focussed monitoring of tasks undertaken by the state government.

Digital management of land records can significantly contribute to cutting down delay in land acquisition, not only for road projects but other infrastructure projects as well. This thus needs to be taken up on priority in the states. Additionally, although the Land Acquisition, Rehabilitation and Resettlement Bill, 2011, aims to strike a balance between development needs and social equity in the country, consultation with states will ensure its effective implementation. Since land is a precious resource, it is important for the State to ensure that infrastructure development is not at the cost of the livelihoods for a vast majority of people in the country. By virtue of its sovereign mandate, the State is

[60] The Inter-State Council was established in 1990 by presidential order under Article 263 of the Constitution of India to be a forum for communication between states and the central government. Its potential has not been fully exploited, as a result of which it is almost defunct presently.

[61] The National Development Council (NDC) set up on August 6, 1952 is the highest decision-making authority in the country on development matters (Planning Commission, 2005).

required to protect the larger public interest and frame its policies in a just and fair manner. Moreover, social unrest as a result of any developmental project can be counter-productive for the projects (as is seen in some states), while being detrimental to the social stability within the country.

It is also recommended that in order to compensate the landholders whose lands are acquired for such infrastructure projects, they may be made stakeholders in the projects such the benefits accruing from them are shared with the landowners. For example, they may be provided employment in the commercial ventures of the private developers on the acquired land. In other cases, the State may ensure that the compensation to the landholders is as per the prevailing market rates. In addition, sustainable livelihood options may be provided to the families whose lands are acquired.

Literature has yet not exposed this land related dimension of PPPs in low-income developing countries, reflecting a much larger socio-economic-political issue. Findings through this research have attempted to fill this gap in literature.

7.2 Need to redefine the roles of public and private partners in PPPs

Notions of 'integration' and 'interdependence' are being incorporated in the policy arena of many countries and a distinct global shift towards 'participative governance' is noticed. In India too, PPPs are likely to constitute an increasingly significant component of public policy.

In view of this and the general concerns surrounding various issues of PPPs, it is important for the government to carefully consider each case and decide whether PPP is the appropriate mode of delivery of public services in that case. Through its policy posturing, the government needs to ensure that reliance on private sector is not blindly followed and PPPs are not treated as a panacea for the problems of infrastructure deficit and service delivery. Many of the deficiencies in public services can be largely mitigated through reforms of State institutions.

Instead of following stereotypes, government agencies may explore innovative 'mixed' or 'hybrid' collaborations with the private sector that would meet different developmental goals of the country and not try to fit one size to all. In view of limited private capital in some sectors, it may be worthwhile to identify the best form of

partnership with private sector in order to derive maximum benefit from the usage of private sector resources and expertise.

This research has shown the lack of in-depth evaluation of PPPs in road projects at all levels. This seems to be the case in respect of PPPs in other infrastructure sectors as well. The government needs to design appropriate institutional arrangements for concurrent as well as post-implementation evaluation of all the PPP projects. The government may also encourage academic research in PPPs, the extent and nature of which is currently not at satisfactory levels. Objective and holistic evaluation of PPP projects, which is not based on economic and revenue criteria alone, may serve as an important instrument to guide policy choices which will find wide acceptance. This can be achieved by mandating scientific and complete documentation of the projects. Exchange of best practices based on such documentation across sectors and at national and state levels can substantially enrich projects in these areas.

Anecdotal evidence suggests cartel formation among big infrastructure development companies that limits competition for smaller companies in order to obtain large projects. Through its policies the State needs to ensure that big private companies do not, by the distribution of their strengths and strategies, monopolise the market and 'define the *regularities* and sometimes the *rules* of the game...or the space of possibles' favourable to their interests (Bourdieu, 2005: 195).

In addition, there have been several instances where the private partner has acted against the larger public interest and grossly misused the government incentives and policies to result in large gains for itself. Protecting the citizens' interests, while creating spaces for more private participation, needs to be a significant agenda item for the State.

The market-oriented and profit-driven behaviour of the private sector has resulted in the environment of 'mistrust' and 'trust deficit' prevailing in many government agencies towards the private sector. This does not seem to augur well for partnerships which are argued to be productive when each partner is granted to have equal status. Therefore, it may be important for the public functionaries to re-orient their attitudes and accept the fact that private sector is originated from the market and exists for making profits. They need to shift their perceptions about the private sector from being a 'contractor' to 'partner', though it seems 'trust' between the two may possibly take some time to evolve.

This shift will also require more maturity on behalf of the private sector to understand its responsibility as a partner, and therefore behave as one. The 'responsiveness' of the private sector as a service provider towards the needs of the 'consumer' has been well demonstrated. Its 'responsibility' in role of a partner towards the 'citizens', however, still needs to be strengthened. '[A] partnership requires strength in both sides, conscious recognition by each side of its distinctive values, and resoluteness by each side to act in accordance with those values in working out the appropriate mixes' (Wetthenhall, 2003: 99).

The private sector also needs to realise that it can be more productive and derive greater benefit when it is complemented with an active and effective State and that there is a significant difference between a 'controlled' market and a 'governed' market. Progressive stimulation of markets by government involvement is more likely to 'help the markets to play a dynamic role in development based on growth, equity, [and] sustainability' (Spoor, 1994: 520).

There are demands, mostly from the neo-liberal quarters, to reduce the scope of State intervention. It is important to make a distinction between 'intervention' and 'involvement'. What is perhaps not realised is that when the market fails to self-regulate, 'intervention' by the State is found necessary to protect people's interests. Involvement by the State is therefore likely to continue by virtue of the mandate of the State. However, the nature of role of the State may vary during different phases of economic growth. The State, on its part, needs to ensure that it does not stifle the markets but stimulates them with progressive policies, selective intervention and prudent regulation.

8 Areas of further research

I have studied limited number of PPPs in the highways and urban transportation in one Indian state in Gujarat for this research. While the attempt has been to analyse in-depth the various governance issues across three levels of such projects, these are limited to the projects studied within a single state driven mainly by considerations of time and money. More projects in many more states therefore need to be researched in the Indian context in order to gain more complete knowledge of issues facing PPPs in India.

Land acquisition has emerged as an extremely vital issue for PPPs in highways projects in my research. It has also been observed to be important for other infrastructure and

development projects. Further research is needed to unravel all dimensions of this issue across the projects in different sectors. It is also important to study such issues in various geographical areas as land is treated differently in different areas by its people and there are various cultural and social issues involved. Pooling of this knowledge may help the states to make necessary policy changes regarding land acquisition for their infrastructure and development projects.

PPPs may also be studied for other sectors such as railways, ports and airports to understand the governance issues and their causal factors. Significant research may be needed to analyse whether and in what way the varying contexts affect the governance issues, the common threads running through these sectors, and how knowledge gathered in each sector can be useful to the other.

This research has identified political economy within states as a crucial component shaping the nature and effectiveness of PPPs. Public Private Partnerships have been initiated in almost all states in different sectors. While some have been successful, others have not been so. An enquiry to explore and analyse the 'drivers' that motivate governments to adopt and support PPPs in different states-whether and to what extent they are demand or supply driven, may prove to be valuable. This may provide evidence regarding motivation within different policymakers and stakeholders to support these forms of service delivery, which may unravel deeper politico-socio-economic factors leading to adoption of PPPs.

In India, PPPs have also been adopted in some social sectors such as health and education. A detailed study to understand the nature and forms of these partnerships, the division of risks, roles of the two partners, their outcomes, and whether and in what ways they are different from PPPs in other infrastructure sectors would enrich existing knowledge on this subject. Comparing the similarities and deviations between the two can inform a holistic policy environment for PPPs.

Investigation of governance issues of PPPs in road transport infrastructure in some selected low-income countries may reveal the manner in which the State-market contexts of these countries influence and shape the projects. Study of the causal factors underlying the governance issues of PPPs in those countries is likely to provide wealth of information on the similarities between India and these countries, and the areas where deviations are observed and factors causing such differences. Knowledge of such factors may be utilised to minimise the undesired outcomes and results of PPPs in India.

Appendix 1

TYPES OF PPPS

There are various types of PPPs, depending upon the financial arrangements between the government and the private sector.

- BOT (Build Operate Transfer)
- BOO (Build Own Operate)
- Build Own Operate Transfer (BOOT)
- BLT (Build Lease Transfer)
- Build Lease Transfer maintain (BLTM)
- Build Own Operate Remove (BOOR)
- Lease Renovate Operate Transfer (LROT)
- Design Build Finance Operate (DBFO)
- Design Construct Manage Finance (DCMF)
- Design Build Finance Operate (DBFO)

(Source: Grimsey and Lewis, 2004: 12)

Appendix 2

CATEGORISATION OF RISKS

Risk meta-level	Risk factor category group	Risk factor
Macro level risks	Political and government policy	Unstable government
		Expropriation or nationalisation
		Poor public decision-making process
		Strong political opposition/hostility
		Poor financial market
		Inflation rate volatility
		Interest rate volatility
		Influential economic events
		Legislation change
		Change in tax regulation
		Industrial regulatory change
		Lack of tradition of private provision of public services
		Level of public opposition to project
	Natural	Force majeure
		Geotechnical conditions
		Weather
		Environment
Meso level risks	Project selection	Land acquisition (site availability)
		Level of demand for project
	Project finance	Availability of finance
		Financial attraction of project to investors
		High finance costs
	Residual risk	Residual risks
	Design	Delay in project approvals and permits
		Design deficiency
		Unproven engineering techniques
	Construction	Construction cost overrun
		Construction time delay
		Material/labour availability
		Late design changes
		Poor quality workmanship
		Excessive contract variation
		Insolvency/default of sub-contractors or suppliers
	Operation	Operation cost overrun
		Operational revenues below expectation
		Low operating productivity
		Maintenance costs higher than expected

		Maintenance more frequent than expected
Micro level risks	Relationship	Organisation and co-ordination risk
		Inadequate experience in PPP/PFI
		Inadequate distribution of responsibilities and risks
		Inadequate distribution of authority in partnership
		Differences in working method and know-how between partners
		Lack of commitment from either partner
	Third party	Third Party Tort Liability
		Staff Crises

Source: Bing *et al*. (2005: 28).

Appendix 3

LIST OF INDICATIVE QUESTIONS FOR INTERVIEWS

Philosophy behind adoption of PPP mode (Questions for the respondents in the government departments, regulatory body, private agencies, users and others; data to be collected from secondary sources too)

- What is the thought process in the department which decides for opting for a PPP vis-à-vis a government built project?
- Is there a general accepted departmental philosophy or is the decision taken on a case-to-case basis?
- Is there a conscious/informed decision-making process based on sound understanding of costs and benefits of PPPs?
- How are the PPPs justified-in terms of quality, cost-benefits, time?
- What are the stated objectives within the department for the selected PPPs, in terms of economic and other benefits?
- How are the objectives/ benefits (economical and non-economical) estimated/calculated when the project is conceptualised?
- How are the perceptions and expectations of the uses and other interested groups within the society fed into the planning, decision and implementation process? OR How are the needs of the users gathered and incorporated in the project objectives?
- How are the objectives/ benefits (economical and non-economical) ensured to have been fulfilled? OR What is the mechanism existing within the department for judging this?
- Is there a review of the various mechanisms connected with the process of approval of a project and selecting a private partner within the government department? What is its nature?

Role of the government (Questions for the respondents in the government departments, private partners, users, and others; and from secondary sources)

- What are roles and responsibilities of the government within the PPPs?
- Are they significantly different from the earlier mode of government provision of services? If so, in what ways?

Private agency as a partner (Questions for the respondents in the government departments, private partners and others; data from secondary sources too)

- What value does the private partner bring to the project?
- What resources of the private partner (financial, material, managerial/manpower, technological) are valued by the government (to explore the argument of resource dependency)?
- Is the private agency recognised as a ‘partner’ (in the way this term is understood in the normative literature on PPPs), or merely treated as a ‘glorified contractor’?
- At what stage and in what areas of decision making is the private agency involved?

- Is there a provision for transferring of capabilities of the private agency to the government department to build existing government capacity?

- Has the relationship between the private sector and the government changed with the PPPs, compared to the traditional pattern of government provision of services? If, so, in what ways?

- Would government provision of services been a better option in the longer run? If, so, in what ways?

Conceptualisation stage (Questions for the respondents in the government departments and the private consortia)

- When is the private partner involved with the project- at the conceptualisation stage or after the project is finalised and the contract is awarded?
- In what ways is the private partner engaged with the department?-Is the private agency part of the decision making process? And if so, in what way? Is it formal or informal?
- Whose arguments prevail when it comes to matters of costing, project planning, implementation etc.? Does the government will prevail in some areas and the private partners' in others? If so, what are these areas?
- Are project estimates prepared within the department before the RFP? Or are they modified after bidding stage, and if so on what basis is this done?
- How many private companies/ agencies bid for the contracts generally? Have there been instances of re-bidding due to few bidders?
- How are contracts drawn up? Are there pre-existing formats or new ones on a case-to-case basis?
- How are the contracts advertised?
- What is the process of approval? High level in-house committee; with members from other departments (like Finance Ministry?)

Implementation stage (Questions for the respondents in the government departments, the private consortia and the regulatory body)

- How are the responsibilities divided between the two? What part of the works is carried out by the private agency based on trust, if such is the case?
- How is the quality of work monitored? Does the government agency have the requisite expertise to undertake this task?
- What are the mechanisms for time-schedule monitoring? How are the penalties imposed for time lags? Are these stringent enough?
- What are the mechanisms for ensuring adherence to contract provisions- like those regarding the quality aspects?
- What are the dispute resolution mechanisms like? Are they used frequently?
- What is the nature of disputes, their frequency and ways of resolution?
    - Have they been any major ones which have held up the projects?
    - Have some major disputes led to re-bidding of projects?
    - In these cases, are the costs associated with the delay calculated?

Sharing of risks and benefits (Questions for the respondents in the government departments and the regulatory body)

- How is the VFM (value for money) decided for PPPs?
- Is this compared with the VFM of the projects without private participation?
- How are the benefits (economical and non-economical) calculated/estimated?
- How are the risks defined and estimated/calculated? And how are they shared, and accounted for at the time of planning and subsequently?
- What are the government guarantees and subsidies to the private partner?

Critical issues of governance of PPPs (Questions for the respondents in the government departments, regulatory body, private agencies, users and the others; data from secondary sources too)

- What are the critical issues of governance of the selected PPPs, in terms of conceptualisation of the project, working its economic and non-economic benefits, planning, design and implementation stages?
- What are the issues in terms of role of the partnering agencies within the government and the regulatory body, and the private partner(s)?
- What is the mechanism within the department for review of the projects during the various stages?
- Is there adequate expertise within the departments to analyse the issues affecting the efficiency and effectiveness of the PPPs?
- How is the capacity built up?
- What mechanisms exist within the department for incorporating the expertise of experts outside the department?
- What mechanisms exist within the department for gathering and incorporating the feedback from users and interested groups to enhance the effectiveness of the projects? Is there a regulatory authority for deciding various issues of PPPs like tariffs, disputes? Or are these part of the contract management?
- What are the issues for regulation of service- in terms of tariffs/user fees/toll fees, maintenance, quality etc.?
- What is the nature of disputes that are resolved? Is there predominance of certain kinds of issues?
- Is it perceived as being independent and effective? What is the nature of its composition in terms of representation of interests and technical expertise?

Accessibility of information to citizens/groups (Questions for the respondents in the government departments, private agencies, users and the others; data from secondary sources too)

- Is information about PPPs readily accessible to citizens, users or interested groups?
- Are details of contracts and phases of development of the service/facility available? Is so, are they in a form that can be easily grasped and analysed by the laypersons?
- Are the financial details (such as accounts etc.) of the projects placed in the public domain, in such a way that profitability and justification of the projects can be judged and appraised by the public?

- Is there some mechanism for incorporating the feedback/concern of the users and interested bodies about some issues, like those on user fees, tolls, quality and responsiveness of the provider, etc?
- Have there been RTI (right to information) requests to demand information on PPP projects? What is the nature of questions asked and information sought? Are these queries used as a means to find out information about user satisfaction, problems besieging the users and responsiveness of the providers?
- What are the issues of 'elite' and 'agency' capture? How do these manifest and what are the ways to deal with their ill-effects?

Accountability mechanisms within the government (Questions for the respondents in the government departments, regulatory body, and others; data from secondary sources too)

- What are the accountability mechanisms for decision making, evaluating proposals, approval, monitoring the project, contract management etc?
- What are the accountability mechanisms for the private agency/partner within the PPPs?
- Have the existing ones been modified in light of the experience wit the PPPs?
- Has there been a recognition that the mechanisms need to be modified (for example, made more stringent)?

Accountability mechanisms for the private provider (Questions for the respondents in the government departments, regulatory body, private agencies, users and the others; data from secondary sources too)

- Through what mechanisms are the private partners held accountable? Is this achieved only through the contract provisions?
- During the construction and service provision phase, how can the citizen hold the private agency responsible? (examples of instances, if any).
- Where does the buck stop-with the private agency or the government department?
- Are the users of the service provided with information on how to go about this process?

INTERVIEW QUESTIONS FOR THE JOINT SECRETARY (PPP), MORTH, GOI

How would you rank India as a developing country in adopting PPP in road transport infrastructure?

Why PPP?

- What is the Philosophy or thought process within the government and the Ministry towards PPP in road transport infrastructure? Why is it so?
- What have been the significant policy initiatives in this regard?
- Stated objectives: How are the PPPs justified-in terms of quality, cost-benefits, time?

    - What are the economical and non-economical benefits
    - What value does the private partner bring
    - How is risk shared/allocated between private and public partners?
- Is this a better option than the traditional provisioning of services? In what ways?

Role of the government

- What are the roles and responsibilities of the government within the PPPs?
- How are these significantly different from the earlier mode of government provision of services? OR in what way is the role of the government redefined in the PPP arrangement?

Private partner

- What is the incentive for private sector in these projects? How is this met?
- Is there adequate expertise in the domestic private sector in transport sector infrastructure?
- Is there a preponderance of the domestic or international agencies for the road projects in India?

Partnership (to explore the changing relations between the government and the private sector)

- In what way has the relationship between govt and private agency changed under the PPP mode?
- In what way is the relationship termed as a partnership? Different from old contractor model?
    - How significant is the involvement of private agency as a partner during various stages of the project

Critical issues of governance of PPPs

- What have been the critical governance and policy-level issues while executing these projects?
- What are the issues in terms of toll charges, shadow pricing etc.?
- What are the accountability issues- with public and private body working together (Where does the buck stop-with the private agency or the government department?)
- Is there adequate institutional capability within departments, to handle these new form of public service provisioning?

INTERVIEW QUESTIONS ON THE BRTS, AHMEDABAD (FOR ED, AJL)

- Why a PPP model?
    - How are the PPPs justified: in terms of quality, cost-benefits, time?
    - What resources does the private sector bring to the partnership?
    - What resources does the public partner pool in?

- What is the VFM sought through the PPP?
    - How are the objectives/benefits (economical and non-economical) estimated/calculated when the project is conceptualised?

- What are roles and responsibilities of the government within the PPPs?
- What are roles and responsibilities of the private partner(s) within the PPPs?
- What are the guarantees, subsidies given to the private partners, in terms of land for workshop, etc.

- In what way is PPP significantly different from the earlier mode of provision of services?
    - Compared to the other PPPs, does the govt. has a larger role to play in BRTS?
    - Could this be planned without the JNNURM funding?

- Do you think the relationship has changed/matured between the public sector and the private agency within a PPP, compared to a conventional contractor relationship?
    - In what way?
- Why not AMTS for this project?
- Why was AJL formed?

Budget and revenue

1. What is the approved and budgeted expenditure? (Phase wise)
2. How much is funded by the Centre, state and the AMC?
3. What are the sources of revenue of the AMC?
4. Has AMC taken loan from FIs?
5. What are means of revenue generation?
    a. Details of revenue generated year-wise and month wise
    b. What is the profit being generated, if any?
6. What is revenue sharing between AMC and private parties? (on daily fare, advertising and passes?)
7. Have there been time and budget over-runs?

Critical issues of governance of PPPs

1. Why were the congested areas (like the eastern parts) not taken up first?
2. What have been the challenges of implementing the BRTS?
    a. Finance
    b. Organisational ways of working
    c. Managing people's perceptions
    d. Land acquisition
    e. Selection of model for BRTS
    f. Technical issues like smart cards, online booking, sms-based services etc.
    g. Unforeseen risks

3. What is the mechanism within the department for review of the projects during the various stages?

On domestic private-market

4. Do you feel the domestic market has sufficient expertise to take up such projects?
5. Has a lack of adequately qualified agencies been faced? (For example for the ITS)?
6. Are the agencies selected predominantly international or with international tie-up(international partners)?

Expertise within the department

7. Is there adequate expertise within the departments to analyse the issues affecting the efficiency and effectiveness of the PPPs?
8. Who frames the contracts with performance indicators for the varied services which are very specialized like the ITS?
9. Is there adequate legal expertise for dispute resolution?
10. How is the capacity built up?

Regulatory body

11. Is there a regulatory authority for deciding various issues of PPPs like tariffs, disputes? Or are these part of the contract management?
12. What are the issues for regulation of service- in terms of tariffs/user fees/toll fees, maintenance, quality etc.?
13. What is the nature of its composition in terms of representation of interests and technical expertise?
14. Is the regulatory body perceived as being independent and effective?

Accountability mechanisms within the government

15. What are the accountability mechanisms (within the government department) for decision making, evaluating proposals, approval, monitoring the project, contract management etc?
16. What are the accountability mechanisms for the private agency/partner within the PPPs?
    a. Is this achieved only through the contract provisions?
17. Have the existing ones been modified in light of the experience with the PPPs?
18. Has there been a recognition that the mechanisms need to be modified (for example, made more stringent)?

Future plans

19. What are the plans regarding- public transport in general?
    - The BRTS?
    - In terms of ridership-enhancing the number of people switching to public transport?

On AMTS

20. Details of buses, rides, routes and revenue generated?
21. How does this compare with the BRTS?
22. How is BRTS different than AMTS?
23. Could the AMTS not been improved with the JnNURM money rather than start the BRTS?

QUESTIONS ON THE BRTS, AHMEDABAD (FOR PRIVATE PARTNERS)

1. What do you understand by a PPP?
    a. How is this different from the contracts you took earlier?
2. What resources do you provide to the BRTS?-buses, drivers etc
    a. What resources does the government provide?
    b. Is the land for the workshop provided by the Govt?
3. What value do you bring to this project?

Contract process

4. Was this a national tender?
5. What are the main elements of the contract in your case?
    a. What is the duration of the contract?
6. How lengthy was the bidding process?
7. How many private companies/ agencies bid for the contracts generally?
8. Was there re-bidding due to few bidders?
9. Did you have enough financial equity to sustain this project? Or did you take loan?
10. How is the revenue shared?
11. What made you bid for this project? Have you done similar work earlier?
12. What was your experience after the Bogota trip?
13. Did you have sufficient capacity to undertake this kind of project?
14. What expertise have you gained from the BRTS project?
15. Are you biding for similar projects elsewhere?

Govt-private sector relationship

16. What is your experience of working with the AMC for the BRTS?
17. In your opinion, in what way has the Govt-private sector relationship changed/matured under the PPP? Or is it the same?
18. Experience with the CEPT?
19. At what stage did you get involved with the project?

20. How is your input taken into policy and planning stages?
21. How are the day-today interactions like-formal or informal?
22. Is it a single way communication, or your views also heard?

Implementation stage

24. What part of the works is carried out based on trust, if such is the case?
25. How is the quality of work monitored?
26. How is the risk divided between you and the AMC?
    a. What are the penalties?
27. What are the mechanisms for ensuring adherence to contract provisions- like those regarding the quality and time aspects?
28. What are the dispute resolution mechanisms like? Are they used frequently?
29. What is the nature of disputes, their frequency and ways of resolution?
    - Have they been any major ones which have led to delay in the project?
    - Have some major disputes led to re-bidding of project?
    - In these cases, are the costs associated with the delay calculated?

Challenges faced

1. Design and Manufacturing of the bus
2. Operation: day to day basis
    a. In terms of drivers,
    b. Safety of passengers and other riders on the road
    c. Maintenance of buses
3. Demands by the AMC

Appendix 4

MAP SHOWING GOLDEN QUADRILATERAL NORTH-SOUTH AND EAST-WEST (NS-EW) CORRIDORS OF NATIONAL HIGHWAYS

Appendix 5

SUMMARY OF NATIONAL HIGHWAY PROJECTS COMPLETED TILL AUGUST 2011

Project category	Number of projects	Cost of projects (Rs. Cr)	Length (km)
Completed PPP projects under NHAI	55	20,139	2,998
PPP projects under implementation of NHAI	127	1,03,451	11,443
Completed non-PPP projects under NHAI	122	38,395	8,307
Non-PPP projects under implementation under NHAI	87	20,333	3,104
PPP projects for award by NHAI in 2011-2012	60	64,488	7,994
PPP projects for implementation by state agencies	34	8,649	4,136
Total	585	2,55,455	37,982

(Source: Planning Commission, 2011. Compendium of national highways projects, Secretariat for Infrastructure, Planning Commission, p.11)

Appendix 6

JAWARHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM)

Introduction

The Government of India launched the Jawarharlal Nehru National Urban Renewal Mission (JnNURM) in 2005 aimed at revitalising selected metro cities. This programme is unique as it combines provision of improved urban infrastructure and services with improved urban governance reforms, which is seen as the catalyst for the former two.

According to 2001 census, 28% of India's population of 1027 m people (i.e. 285 m people) live in urban areas. The share of urban population is estimated to increase to 40% of the total population by 2021, fuelled primarily by the economic policies of the government and increasing urbanisation. While they are expected to contribute to higher productivity, this is argued to be contingent upon availability of quality infrastructure and urban services such as roads, mass transportation, power, telecom, and water supply along with civic infrastructure, such as solid waste management and sanitation.

Provisioning of infrastructure and urban services in most cities in India is through the Urban Local Bodies (ULBs). However, due to several factors these have been generally found to be short of funds for investment, and therefore dependent on funds which are allocated by the central and state governments. On the other hand, it is estimated that ULBs of 63 selected ULBs will require total investment of about INR 1,205.36 bn over a seven-year period (from 2005) for providing requisite urban infrastructure.

In recognition of this requirement, and also that any initiative for a country wide renewal of urban areas cannot be possible without a concerted supporting effort by the federal government to catalyse state governments, government of India formulated JnNURM with the aim 'to encourage reforms and fast track planned development of identified cities'. The programme is being implemented in 65 'mission cities'. Initially started with a corpus of INR 500 bn, it has a revised funding of INR 660 bn, from November 2010.

Objectives of the Mission

The mission aims to achieve the following outcomes:

1. integrated development of infrastructure services
2. creating linkages between asset-creation and asset-management through reforms providing long-term project sustainability;
3. provide adequate funds for urban infrastructural services
4. bring about planned development of the identified cities including peri-urban areas, outgrowths and urban corridors
5. provide universal access to services the urban poor tenure at affordable prices,
6. develop special programme for the old parts of the cities in to reduce congestion

Features of JnNURM

Central funding is provided under JnNURM for urban renewal of selected 65 'mission cities'. For a city with more than 4 m population, 35% of project cost will be funded by the central government, 15% by state government and remaining 50% by the ULB or parastatal body or loan from Financial Institutions (FIs).

The following sectors/services are eligible for funding under the Mission:

1. urban renewal of the old city
2. slum improvement and rehabilitation of projects
1. low cost and affordable housing for slum dwellers, urban poor, economically weaker sections and lower income groups
2. water supply, including sanitation and desalination plants, community toilets, and baths
3. street lighting
4. sewerage, solid waste management, construction and improvement of drains and storm water drains
5. urban transportation including roads, highways, expressways, and metro projects; and parking areas
6. purchase of modern buses for urban transport services
7. development of heritage areas

8. prevention and rehabilitation of soil erosion and landslides (in cases of special category of urban areas)
9. preservation of water bodies

Furthermore, JnNURM provides a framework for accomplishing these goals in a streamlined manner: preparation of City Development Plans (CDPs), formulating Detailed Project Reports (DPRs) for projects to be initiated, setting up Special Purpose Vehicles (SPVs), and identifying the nodal agency which will coordinate and implement the projects.

Table: Summary of projects sanctioned under JnNURM

Sector	**Number of Projects Sanctioned**	**Cost of Projects Sanctioned (Rs. million)**
Water Supply	140	1,82,346
Sewerage	99	1, 21,167
Drainage/ Storm Water Drainage	59	72,888
Drainage/ Storm Water Drainage	40	21,861
Roads/ Flyovers	75	33,822
Public Transport System	19	47,709
Other Urban Transport	13	6,860
Urban Renewal	9	4,451
Development of Heritage Areas	2	492
Preservation of Water Bodies	4	1,167
Parking	1	560

(Source: JNNURM, Progress Review, April 24, 2009 in Vaidya, 2009)

Appendix 7

THE INDIAN ROADS CONGRESS

The Indian Roads Congress (IRC) is the premier technical body of Highway Engineers in the country. The IRC was set up in December 1934 on the recommendations of the Indian Road Development Committee, also known as Jayakar Committee which was set up by the Government of India in 1927 aiming towards Road Development in India. It was formally registered as a Society in 1937 under the Societies Registration Act of 1860. Over the years activities of the Indian Roads Congress have grown and the Congress has transformed into a multi -dimensional faceted organisation of technical experts, working towards development of better roads and bridges in the country.

The India Roads Congress is the oldest representative technical body of highway engineers in India. Starting with a modest membership of 73 in 1934, the IRC has more than 13,500 members comprising of engineers of all ranks from the national and state governments, Engineering Services of Army, Border Roads Organization, Road Research Institutes, Engineering Colleges, Local Bodies and private enterprises. The Congress provides a national forum for sharing of knowledge and pooling of experience on the entire range of subjects dealing with construction and maintenance of roads and bridges, including technology, equipment, research, planning, finance, taxation, organisation and all connected policy issues. It is claimed that the development of roads in the country has been significantly influenced by the technical expertise provided by the IRC, and the guidelines and manuals framed by it in the area of roads.

Objectives of the IRC

The objectives of the IRC are as follows-

- To promote and encourage the science and practice of building and maintenance of roads;
- To provide a channel for the expression of collective opinion of its members regarding roads;
- To promote the use of standard specifications and to propose specifications;
- To advise regarding education, experiment and research connected with roads;
- To hold periodical meetings, to discuss technical questions regarding roads;
- To suggest legislation for the development, improvement and protection of roads;

- To suggest improved methods of administration, planning design, construction, operation, use and maintenance of roads;
- To establish, furnish and maintain libraries and museums for furthering the science of road making;
- To publish, or arrange for the publication of proceedings, journals, periodicals and other literature for the promotion of the objects of the Society;
- To accept subscriptions, subsidies, donations, endowments and gifts in furtherance of the objects of the Society;
- To invest and deal with the funds of the Society or entrusted to the Society, to acquire and hold any movable or immovable property, and to borrow or raise money for the furtherance of the objects of the Society and to sell, lease, exchange, or otherwise deal with the same;
- To grant pay, prizes, honoraria, or scholarships (including travelling scholarships) for meritorious work in furtherance of the objects of the Society; and
- To do all such other lawful things as may be, incidental or conducive to the attainment of the above objects.

Source: IRC website; http://irc.org.in/ENU/Pages/AboutUs.aspx [Accessed 15 November 2011].

Appendix 8

REPORT OF FIRST COMMITTEE ON PUBLIC UNDERTAKINGS (COPU) ON PPPs

The Committee on Public Undertakings (COPU) was constituted to look into PPPs, particularly in roads. It composed of members of the Lok Sabha (Lower House of the Parliament) and the Rajya Sabha (Upper House). Apart from the chairman of the Committee, there were 14 LS members and 7 RS members. This was the first Committee on Public Undertakings (COPU). It studied the Delhi-Gurgaon expressway project, developed within the PPP mode, and tabled its report in the Parliament in 2009. Out of 23 projects awarded by NHAI between March 1998 and April 2003, the Committee studied 17. It sharply criticised the NHAI on several accounts.

The observations and recommendations made the Committee are:

1. 'Deliberate indecisiveness' regarding the mode to follow, indicated by lack of guidelines which will determine and guide mode to be followed for execution of project was observed, along with absence of analytical and systematic comparison between BOT and SPV, and also between BOT toll and BOT annuity
2. The Committee noted that it fails to understand why the Delhi-Gurgaon stretch which is such a heavy density track was not executed under BOT annuity, when in the first 20 months of opening it grossed Rs. 208 cr. In this case there was apparently no risk in revenue, so there was no need to pass on this risk to concessionaire. There have been discrepancies regarding in revenue through 'cash collection' and 'automated collection', which have still to be investigated and explained. This gives the impression that 'the Government was more interested in fulfilling the commercial interest of the Concessionaire instead of serving the public interest', and this project has lead to the 'unjustified enrichment' of the concessionaire (p. 54).
3. NHAI has tried to evade responsibility and accountability as it has put crucial matters within purview of the IC and the concessionaire
4. The Committee found the policy that first BOT toll, failing which BOT annuity and then SPV or EPC should be selected. There needs to be clear guidelines regarding cases.

5. DPR was deficient in assessing realistic and complete scope of work. Change of scope lead to additional work costing 21% of total project cost. The justification by the NHAI and government regarding the development and growth of vicinity is lame excuse as the potential growth was known to the NHAI prior to award of project. The deficiencies in the DPR have cost the government Rs. 146 cr. This 'reflects the lack of professional competence on the part of NHAI in handling the project and points to a defective system of assessment prevailing in the organization' (57).
6. DPR should be prepared in consultation with the state government and needs of the locals. In the Delhi-Gurgaon case the incompetence of the consultant to prepare the DPR was attempted to be passed on to the state government s presenting their needs later on, when they should have been incorporated at the DPR stage. It was this lacuna which required them to have them incorporated before implementation.
7. The concession period was fixed for 20 years, when with IRR of 24% and project cost of Rs. 555 cr, in the first 20 months of operation of the expressway, concessionaire has earned Rs. 208 cr. moreover, no survey has been done by NHAI to assess the growth of traffic till end of concession period. The consultant did not recommend BOT toll and had advised for a traffic survey to assess the traffic volume, which was not done. Even when the project was been planned, the area was known to fall in high-development category. Yet, worst case scenario was taken to do feasibility survey and financial modeling; reason was to evince sufficient interest from the private sector. Concession period was not framed based on sound financial evaluations. Incompetence has been held as the reason for the NHAI to fail to revise the concession agreement such that it can toll the road and collect these high revenues or pass the benefit to commuters at lower toll rates.
8. In view of the above, the Committee notes that such behaviour of NHAI 'promotes the commercial interest of the NHAI and Concessionaire' and has failed to protect the interest of the commuters (p.60) and does not offer respite to commuters who have to spend long hours at the toll points during peak hours and pay heavy tolls, but still do not get the easy of traveling seamlessly, as ITS have not been installed and a TAG system is still in place; the smart card has not been used yet. This negates the very purpose for which the expressway was constructed.

9. The project was delayed by about 42 months on account of failure to acquire land, change in mode of execution of project, delay in award of work and delay of 26 months to finalise change of scope.
10. The Committee agrees that acquisition is one of the major bottlenecks owing to factors like lack of land records with state governments, resistance from farmers and non-cooperation from State Governments, and other central government agencies like AAI etc.
11. Premature provisional Completion Certificate was issued by IC to concessionaire. The concessionaire commenced commercial operation of expressway without completing remaining works, which remain pending even after 4 years, when the COPU started investigating into the project. NHAI failed to impose penalties for incomplete works and matter pending with committee of CGMs. The matter was earlier left to the IC to evaluate and decide. His gives the impression that NHAI has shirked its responsibilities.
12. Interests of pedestrians not taken into consideration during planning stage. New FOBs, underpass made at extra cost by concessionaire and NHAI. More than 100 people have died since 2007 till COPU investigation in 2009, due to provision of inadequate safety norms.
13. Many utilities to improve service like provision of signals and signs, removal of trees, stationing of marshals at crucial points etc., have yet to be provided by the concessionaire. Patrolling vehicles and ambulances are conspicuous by their absence, the Committee observed.
14. The Committee has questioned effectiveness of monitoring role of NHAI and administrative ministry. It observed that Government has passed the buck to NHAI which has passed on tasks of monitoring and supervision to the IC and Concessionaire.

(Source: Lok Sabha Secretariat, 2009. COPU report on Public Private Partnership in implementation of road projects by national highways authority of India in respect of Delhi - Gurgaon project. *C.P.U. NO. 934*. Department of Road Transport, Ministry of Road Transport and Highways. New Delhi: Lok Sabha Secretariat.)

Appendix 9

PPPS IN THE AVIATION SECTOR AND CASE OF HYDERABAD METRO

PPPs in the aviation sector

Evidence from PPPs in the aviation sector in the country points to faulty structuring of PPPs, which has resulted in severe escalation in airport user charges which the passengers have to bear. In addition, several instances of land grabbing have been reported in the aviation sector where many airports are being developed under the PPP model. Large tracts of land in prime locations are often given to private developers by the central and several state governments as part of the incentives to encourage their participation in the projects. In most cases the land is generally agricultural land lying on the outskirts of the cities/metros. The compensation to the farmers and rural landowners is found to be very less compared to the huge profits that the private developers make from commercialisation of the land, as the mark-up on the land is substantially high. Despite such facilitation which is hugely profitable to the developers, they have been charging very high airport and user development fees which have hiked up the passenger fees for these airports which have been developed under the PPP mode. Arguably, the additional fee is required to bridge the gap between the projected and the actual cost of development of airports.

A glaring example has been the development of Delhi Airport by GMR led consortium. Serious lapses in structuring and execution of PPP have been pointed out by the Comptroller and Auditor General (CAG) of India. The CAG has questioned why the SPV created for the PPP, i.e DIAL (Delhi International Airport Private Ltd.), did not undertake a comparison between the joint venture and concession models and went ahead to create 11 joint ventures (JVs), which in the non-aeronautical sector constitute 60% of the total revenue. According to CAG's report, financial manipulation to benefit the promoters is clearly evident. The report points to loss of at least INR 1185 cr to the government in land development of 48.5 acres (196,000 sq m) of land nearby the airport. Rights to develop the land were given to a newly formed subsidiary, Delhi Aerotropolis Private Limited which under-valued the land at INR 775 cr. Whereas, valuation at market prices (starting from INR 10 mn per sq m) would have fetched at least Rs 1,960 cr.

Moreover, revenue share of the government has been greatly reduced through creation of multiple joint ventures by GMR in several non-aviation services like parking, cargo handling, fuel infrastructure, duty-free shops, etc., which constitute 60% of total revenue. As per the original agreement, DIAL was to have 54% of share in revenue. However, by creating the sub-ventures in revenue earning streams, DIAL brought its own share in revenue down to 15%; 46% of this reduced the government's share to merely 6.9%. Some of these dubious joint ventures have been reportedly created by ministerial favourites. There has been a loss of INR 73.12 cr due to formation of joint ventures in cargo handling also. This is significant when world over business from cargo handling has been profitable and cargo tonnage grew by nearly 250% during the same period (November 2009 and September 2010).

The total project cost has escalated upwards of INR 12,500 cr, far more than INR 9,000 cr initially estimated. Against the maximum cost approved by the DIAL Board for INR 10 mn per sq. m of the airport, DIAL refurbished it at INR 50 mn per sq. m. One-fourth of this escalation is being borne by passengers by way of high User Development Fees (UDF). It is estimated that the hike will be in the range of INR 1,500-3,800 for international passengers and INR 200-600 for domestic passengers. This is in addition to the Airport Development Fees (ADF) which is INR 200 and INR 1,300 for outbound domestic and international passengers, respectively. Although there has been a huge resistance to it by the consumers' forums, the Supreme Court of India could not reverse it as it is approved by the Airports Economic Regulatory Authority; similar fee charged at Mumbai international airport has been quashed by the Bombay High Court (India Today, 2011). The AERA has now ordered DIAL to pay its JVs on its own and not from the revenue to be shared with the government (Business Standard, 2011d).

The tariff order for 2012-13 and 2013-14, is expected to affect millions of passengers across the country and internationally as the Delhi Indira Gandhi International (IGI) Airport handled about 35.94 million passengers in 2011-12. This is expected to rise to about 40 million the next year. Moreover, as the order allows a further 7% hike in airport charges and UDF to factor in inflation, the UDF will rise by up to Rs 60 next fiscal (Times of India, 2012i).

Case of Hyderabad Metro

Instances of the private sector misusing subsidies extended by the government are not limited to PPPs in the road transport sector. Metro projects within PPP have also been

criticised for the private concessionaire trying to mislead the government in order to reap huge profits through tweaking the concession agreements.

The Hyderabad[62] Metro project is claimed to be one of the biggest PPP projects in the country. In the second round of bidding, of the total project cost (TPC) of INR 16378 cr, INR 11480 cr has been raised as debt from 10 banks, whereas the developer has brought in equity component of INR 3440 cr. Viability Gap Funding of INR 1458 (8.9% of TPC) is being provided by the central government. The project involves 18.5 m sq.ft. of transit oriented development which is part of the urban planning initiatives of the state government.

In the first round of bidding for Hyderabad Metro, which was awarded to real estate developers M/s. Maytas, rather than an infrastructure company, the government of Andhra Pradesh was found to have flouted several rules for selecting the bidder. The project was aggressively pushed by the state government, despite opposition from experts, on the premise that Maytas had offered a negative subsidy while analysts claimed that returns to the developer from estate development far outweighed this amount. Many heritage buildings were proposed to be demolished to make way for huge shopping malls which were to be part of railway stations. The government was found to roughshod over various departments to get approvals and clearances for land and buildings, and the bidding was reported to be far from transparent. Moreover, the way the concession was drafted prevented the state transport corporation to run cheap transport buses on the metro route, which would force the commuters to opt for the much expensive metro (Ramachandraiah, 2009).

Similar issues of ad-hoc, non-transparent and non-participative planning by policymakers has been highlighted in a study of the Pune metro system (Sreenivas, 2011). Serious methodological errors in the DPR have 'vastly overestimated' the advantages of the proposed system. In consonance with the findings of this research, the study by Sreenivas concludes that transport planning is taken up in different silos rather than in an integrated manner.

[62] Hyderabad is capital of the southern state of Andhra Pradesh.

Appendix 10

LAND ACQUISITION AND REHABILITATION AND RESETTLEMENT (LARR) BILL, 2011

Land acquisition for development projects and rehabilitation of the affected persons, has resulted in major and serious issues hindering infrastructure projects in various sectors such as highways, civil aviation, power plants and ports. Several projects have been brought to a grinding halt due to problems associated with land acquisition. Most of these issues have been the result of the Land Acquisition Act, 1894, which was framed during the colonial days. Although the Act has been amended several times, it is found to be woefully inadequate to address the practical problems arising from its implementation. The compensation paid to the land-owners when their land is acquired by the government for development projects, is significantly lower than the prevailing market rates. This is observed to be largely due to imperfect land markets in India and the disproportionate power equations between the land owners and buyers of land for development and commercial purposes. This has caused severe discontentment among the landowners and been the cause of several protests across the country. Projects have also been mired in lengthy litigations, thus affecting their timely completion. Furthermore, rehabilitation is looked after by the concerned Ministries which implement the development projects; thus even after the land is acquired rehabilitation and resettlement of the affected families have delayed the projects. A unified comprehensive law to guide rehabilitation was thus found to be lacking.

In order to address the issues of requirement of land for development infrastructure, urbanisation and industrialisation, and to balance this with the need for an effective policy of rehabilitation and resettlement of those affected, the government has framed the new Land Acquisition and Rehabilitation and Resettlement Bill, 2011. This brings acquisition of land and rehabilitation of the landowners under one framework. Under the Constitution of India, whereas Land is a state subject, land acquisition is a Concurrent subject. Hence, both the Central and state government can frame laws in this regard.

While discussing the new Land Bill (2011), the Ministry of Rural Development (MoRD, 2011: 1) notes that, '[t]he issue of who acquires land is less important than the process of land acquisition, compensation for land acquired and the R&R process, package and

conditions'. The Bill contains provisions to address these issues for both private and government acquisition; the Bill does not preclude private buying of land from farmers and others. The stated objective of the Bill is to make process of land acquisition for both the landowner and land-buyer transparent easy and fair. It also provides for compensation for loss of livelihoods of the landowners.

According to the Bill, the State can acquire land for three broad categories: for its own use; land which will be transferred to private companies for public purpose such as highways, and immediate and declared use by private firms for public purpose, such as industries.

There are presently 18 laws of the Central Government covering land acquisition for highways, defence, railways, Special Economic Zones etc. The new Bill will enjoy primacy over these sepcialised legislations. Furthermore, provisions of the Bill will be in addition to and not in derogation to the safeguards provided within these laws. The Bill clearly specifies that in no case will a multi-cropped irrigated land be acquired, nor will the government acquire land for private companies for private purpose.

The Bill has stringently defined the clause of 'public purpose' which was observed to be misused by government agencies in several cases. In cases where the government acquires the land for public purpose and transfers it to private companies for fulfilling this public purpose, such as in PPPs, the 'public purpose' cannot be changed. Evidence suggests that often the nature and definition of 'public purpose' was changed once the land was acquired. The Bill provides that land for public purpose can be acquired only when 80% of the affected families give their consent.

One of the significant provisions of the Bill is award of compensation to the affected landowner not less than five times the market rate in rural areas, and twice the prevailing market rate in urban areas. In case the land is acquired for urbanization, 20% of the developed land will be reserved and offered to land owners, in proportion to their land acquired. Moreover, the Bill makes it compulsory for providing employment for one member per affected family or payment of INR 20 mn if employment is not offered. According to the new Bill, upon every transfer of land within 10 years from its acquisition, 20% of the appreciated value of the land will be shared with its original owner.

The Bill also provides administrative structures and institutional mechanisms covering the process flow, safeguards, transparency, penalties and awards.

The Parliamentary Standing Committee on Rural Development while reviewing the Bill has unanimously recommended that the State must not acquire land for PPPs. The private sector must purchase land at the market prices, it has suggested. It has also recommended that no agricultural land must be acquired for industrial purpose and development of infrastructure. The LARR 2011 has provision for purchase of multi cropped irrigated land only as the last recourse.

Distancing himself from the recommendations, the Union Rural Development Minister has stated that PPPs are needed for economic growth of the country, and the Central Government will engage in further consultations with the states for implementation of the LARR (Financial Express, 2012). The Government has termed such suggestions as ‘regressive’ noting that they will ‘dampen investor sentiment’.

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