CONSULTANCY SERVICES FOR PREPARING GUIDELINES & MODEL CONTRACT FOR CITY BUS PRIVATE OPERATIONS PC1B 8
DISCLAIMER

This document is strictly private and confidential and has been prepared by Deloitte Touche Tohmatsu India Private Limited (“DTTIPL”) specifically for the Ministry of Urban Development (MoUD) for the purposes specified herein. The information and observations contained in this document are intended solely for the use and reliance of the (MoUD), and are not to be used, circulated, quoted or otherwise referred to for any other purpose or relied upon without the express prior written permission of DTTIPL in each instance.

Deloitte has not verified independently all of the information contained in this report and the work performed by Deloitte is not in the nature of audit or investigation.

This document is limited to the matters expressly set forth herein and no comment is implied or may be inferred beyond matters expressly stated herein.

It is hereby clarified that in no event DTTIPL shall be responsible for any unauthorised use of this document, or be liable for any loss or damage, whether direct, indirect, or consequential, that may be suffered or incurred by any party.
Table of Contents

1. PROJECT BACKGROUND & OBJECTIVES
   1.1 Project Background .......................................................... 1
   1.2 Project Objectives .................................................................. 3
   1.3 Methodology for State of the Art Review ............................... 4
   1.4 Structure and Coverage of Report ......................................... 5

2. EVOLUTION OF CITY BUS SERVICE PROVISION ....................... 7
   2.1 Dominance of Informal Private Operators in Delivery of Bus Service ......................................................... 8
   2.2 Enhanced Role of Public Sector .............................................. 8
   2.3 Structured Contracts for Private Sector Participation ............ 8
   2.4 Overview of Concession Contracts ........................................ 10

SECTION I - REVIEW OF INDIAN CITIES ........................................ 17

3. EXISTING CONTRACTUAL FRAMEWORK FOR PRIVATE BUS OPERATIONS ................................................................. 18
   3.1 Impact of JnNURM on City Bus Private Operations in India ........................................................................ 18
   3.2 Emergence of GCC as Preferred Contractual Framework in India ................................................................. 18
   3.3 Tendering Processes for the Cities Reviewed ......................... 21
   3.4 Lack of Comprehensive Contractual Frameworks ................. 21
   3.5 Possible Options for City Bus Operations .............................. 22

4. BUS DEPOTS & OTHER INFRASTRUCTURE .................................... 23
   4.1 Review of Contractual Clauses Related to Bus Depots ............ 23
   4.2 Options for Provision of Bus Depots ....................................... 26
   4.3 Inadequate Assignment of Responsibility and Accountability for Bus Infrastructure ........................................ 26

5. REVIEW OF CLAUSES IMPACTING OPERATIONS AND MAINTENANCE ............................................................. 28
   5.1 Findings Regarding Day-to-Day Operations ........................... 29
   5.2 Review of Clauses Affecting Maintenance of Fleet, Depots and Other Infrastructure ................................. 32
   5.3 Compensation for Vandalism is Defined in Very Few Contracts ................................................................. 35

6. FLEET PROCUREMENT ISSUES ......................................................... 36
   6.1 Causes of Delay in Operationalization of Fleet ...................... 36
   6.2 Effects of Delay in Procurement / Operationalization of Fleet ................................................................. 38
   6.3 Responsibility for Fleet Procurement ..................................... 39

7. LENGTH OF CONTRACT .................................................................. 43
   7.1 Length of Contract in Various Cities ....................................... 44

8. PERFORMANCE MONITORING ......................................................... 47
   8.1 Performance Monitoring Indicators in Existing Contracts ........ 47
   8.2 Methodology for Performance Monitoring ............................. 50
   8.3 Key Parameters to be Monitored to Gauge Operator Performance ................................................................. 51

9. CONTRACT TERMINATION AND ARBITRATION ......................... 53
   9.1 Transition Mechanism ............................................................. 53
   9.2 Mitigation of Termination Losses ........................................... 54
   9.3 Dispute Resolution Mechanisms ............................................. 54
   9.4 Arbitration Provisions ............................................................ 55

10. REVENUE AND COSTS ................................................................. 56
    10.1 Gross Cost Model .................................................................. 56
    10.2 Net Cost Model ..................................................................... 57
    10.3 Advertising Revenue is Not Divided in Proportion with the Revenue Risk Taken in Some Contracts ........ 58
    10.4 Payment Procedures in Both GCC and NCC Models ............ 59

11. CONCLUSIONS ON REVIEW OF INDIAN BUS CONTRACTS .............. 61

SECTION II - REVIEW OF INTERNATIONAL CITIES ............................ 67

12. THE CASE STUDY OF SANTIAGO BUS NETWORK REFORM .......... 72
    12.1 Background ......................................................................... 72
    12.2 Bus Transport Services: Pre-Reform .................................... 73
13. THE CASE STUDY OF LONDON QUALITY INCENTIVE CONTRACTS.................................81
  13.1 BACKGROUND..................................................81
  13.2 THE BUS TRANSPORT SYSTEM: PRE-REFORM........................................81
  13.3 THE RADICAL TRANSFORMATION: INTRODUCTION OF QUALITY INCENTIVE CONTRACTS ....82
  13.4 MEASURING PERFORMANCE THROUGH MONITORING........................................83
  13.5 RESULTS AND THE COST OF IMPROVING QUALITY .......................................86
  13.6 LESSONS FROM THE LONDON EXPERIENCE ........................................87
14. THE CASE STUDY OF CURITIBA - BUS REFORM THROUGH BRT..............................88
  14.1 INTRODUCTION..................................................88
  14.2 LESSONS LEARNED FROM THE CURITIBA EXPERIENCE ..................................91
15. THE CASE STUDY OF QUITO – STRENGTH TO IMPLEMENT BUT WEAKNESS IN MANAGEMENT ....93
  15.1 INTRODUCTION..................................................93
  15.2 BACKGROUND..................................................93
  15.3 THE REFORM PROCESS .............................................................................93
  15.4 RESULTS....................................................................................................94
  15.5 LESSONS FROM QUITO EXPERIENCE ...................................................94
16. THE CASE STUDY OF ADELAIDE – AN OBJECTIVES-BASED APPROACH......................96
  16.1 INTRODUCTION..................................................96
  16.2 DESIGN OBJECTIVES........................................................97
  16.3 ROLES, RESPONSIBILITIES AND THE PAYMENT/INCENTIVE MECHANISMS ..............97
  16.4 THE TENDERING AND EVALUATION PROCESS ..........................................99
  16.5 KEY FEATURES OF THE STAGE 2 TENDER .............................................102
  16.6 THE RESULTS.........................................................................................103
  16.7 LESSONS LEARNED FROM ADELAIDE COMPETITIVE TENDERING AND CONTRACTING ...104
17. CONCLUSIONS AND RECOMMENDATIONS.........................................................105
  ANNEXURE - I: LIST OF PEOPLE MET ...........................................................................107
  ANNEXURE - II: CITY-BASED REVIEW ........................................................................109
List of Exhibits

EXHIBIT 1-1 Number of Buses per 1000 Persons ................................................................. 1
EXHIBIT 1-2 Key Challenges in City Bus Private Operations ........................................... 2
EXHIBIT 1-3 Shortlisted Indian Cities .................................................................................. 4
EXHIBIT 1-4 Shortlisted International Cities ....................................................................... 4
EXHIBIT 1-5 Steps for State of the Art Review ................................................................. 4
EXHIBIT 1-6 List of Contracts Reviewed in the SOTA Review ........................................ 5
EXHIBIT 2-1 Evolution of Bus Service Provision Over Time ........................................... 7
EXHIBIT 2-2 Basic Alternatives for Provision of City Bus Services ................................ 7
EXHIBIT 2-3 Key Elements of Concession Contract ......................................................... 10
EXHIBIT 2-4 Main Mechanisms for Performance Adherence ........................................... 10
EXHIBIT 2-5 Categories of Risk ......................................................................................... 11
EXHIBIT 2-6 Incentive Characteristics of Different Payment Mechanisms ......................... 15
EXHIBIT 3-1 Formation of SPVs in the Select Cities ......................................................... 18
EXHIBIT 3-2 Scale of Risk According to Contract Type and Player ................................... 19
EXHIBIT 3-3 Trend in Type of Contracts Signed from 2006 - 2013 ................................ 20
EXHIBIT 3-4 Reducing Risk for Private Operators in City Bus Contracts ....................... 20
EXHIBIT 3-5 Important Clauses to be Included in a City Bus Contract ......................... 21
EXHIBIT 3-6 Possible Range of Contract Models ............................................................. 22
EXHIBIT 4-1 Importance of Planning and Infrastructure City Bus Transportation .......... 23
EXHIBIT 4-2 Illustrative Design Parameters for Depot ..................................................... 23
EXHIBIT 4-3 Clauses on Contractual Obligations in Providing Depots ............................. 24
EXHIBIT 4-4 Effects of Depot Design on Day-to-Day Operations .................................... 24
EXHIBIT 4-5 Operating Kilometre Calculation in Various Contracts .............................. 25
EXHIBIT 4-6 Details About Location of Depot ................................................................. 25
EXHIBIT 5-1 Snapshot of the Clauses Impacting Operations and Maintenance in Contracts Reviewed ................................................................. 28
EXHIBIT 5-2 Clauses on Empowerment of Squad Team of Private Operator ................. 30
EXHIBIT 5-3 Responsibility of Setting up Control Centre ................................................ 30
EXHIBIT 5-4 Customer Grievance Redressal ................................................................... 31
EXHIBIT 5-5 Responsibility of Providing Utilities at Depot .............................................. 32
EXHIBIT 5-6 Responsibility for Security of Fleet and Depot ............................................. 33
EXHIBIT 5-7 Specifications for Fleet Maintenance in the Contract ................................. 33
EXHIBIT 6-1 Causes and Effects of Delay in Fleet Delivery ............................................... 36
EXHIBIT 6-2 Parameters for Consideration While Choosing Design and Manufacturer .... 37
EXHIBIT 6-3 Responsibility of Permit Approvals .............................................................. 38
EXHIBIT 6-4 Effects of Delay in Fleet Operationalization ............................................... 38
EXHIBIT 6-5 Increasing Losses with Decreasing Revenues ............................................. 38
EXHIBIT 6-6 Decision Framework for Fleet Procurement .............................................. 39
EXHIBIT 6-7 Procurement Responsibility ........................................................................ 39
EXHIBIT 6-8 Responsibility for Fleet Procurement ........................................................... 41
EXHIBIT 7-1 Effects of Length of Contract on Stakeholders ........................................... 43
EXHIBIT 7-2 Pros and Cons of Short Term and Long Term Contracts ............................ 44
EXHIBIT 7-3 Length of Contract in Various Contracts ...................................................... 44
EXHIBIT 7-4 Extension Terms in Contracts Under Review ............................................. 45
EXHIBIT 8-1 Monitoring Framework in Contract ............................................................ 47
EXHIBIT 8-2 Classification of Monitoring Indicators for Analysis .................................... 47
EXHIBIT 8-3 Coverage of Monitoring Indicators in Various Contracts ......................... 48
EXHIBIT 8-4 Criteria for Selection of Drivers .................................................................... 49
EXHIBIT 8-5 Safety and Operational Conditions .............................................................. 50
EXHIBIT 9-1 Provisions for Balance Arbitration Under Various Contracts ..................... 55
EXHIBIT 10-1 Division of Advertising Revenue Under Various GCC Contracts ............ 59
EXHIBIT 10-2 Division of Advertising Revenue Under Various NCC Contracts ........... 59
EXHIBIT 10-3 Payment Terms from Public Authority to Private Operator in Various GCC Contracts ................................................................. 59
EXHIBIT 10-4 Revision Terms for Premium Paid to Operators in Various GCC Contracts ................................................................. 60
EXHIBIT 10-5 Payment Terms for Overshot / Undershoot Operating Kilometres ............ 60
EXHIBIT 10-6 Payment Mechanisms Found in NCC Contracts ........................................ 60
EXHIBIT 12-1 Milestones of Santiago Bus Transport Reform ......................................... 72
EXHIBIT 13-1 Main Characteristics of the London Bus Contract (E, Briones, Sanchez, Vargas, & Green, 2013) ................................................................. 82
EXHIBIT 13-2 MILESTONES OF LONDON BUS TRANSPORT ........................................................................................................ 82
EXHIBIT 13-3 DIVISION OF RESPONSIBILITIES UNDER LONDON QIC (LONDON, 2008) ........................................................................................................ 83
EXHIBIT 13-4 KILOMETRES OPERATED ........................................................................................................................................ 86
EXHIBIT 13-5 LOW FREQUENCY BUS SERVICES PERCENTAGE ‘ON TIME’ .................................................................................. 86
EXHIBIT 13-6 EXCESS WAITING TIME FOR HIGH FREQUENCY BUS SERVICES ........................................................................... 86
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
</tr>
<tr>
<td>MoUD</td>
<td>Ministry of Urban Development</td>
</tr>
<tr>
<td>NUTP</td>
<td>National Urban Transport Policy</td>
</tr>
<tr>
<td>JnNURM</td>
<td>Jawaharlal Nehru National Urban Renewal Mission</td>
</tr>
<tr>
<td>BRTS</td>
<td>Bus Rapid Transport System</td>
</tr>
<tr>
<td>ULB</td>
<td>Urban Local Body</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transportation System</td>
</tr>
<tr>
<td>IPT</td>
<td>Intermediate Public Transport</td>
</tr>
<tr>
<td>STU</td>
<td>State Transport Undertakings</td>
</tr>
<tr>
<td>SPV</td>
<td>Special Purpose Vehicle</td>
</tr>
<tr>
<td>PIS</td>
<td>Passenger Information System</td>
</tr>
<tr>
<td>VGF</td>
<td>Viability Gap Funding</td>
</tr>
<tr>
<td>UMTA</td>
<td>Unified Metropolitan Transport Authority</td>
</tr>
<tr>
<td>UTF</td>
<td>Urban Transport Fund</td>
</tr>
<tr>
<td>GCC</td>
<td>Gross Cost Contract</td>
</tr>
<tr>
<td>NCC</td>
<td>Net Cost Contract</td>
</tr>
<tr>
<td>ETVM</td>
<td>Electronic Ticketing Vending Machine</td>
</tr>
<tr>
<td>AMC</td>
<td>Annual Maintenance Contract</td>
</tr>
<tr>
<td>HSRTC</td>
<td>Haryana State Road Transport Corporation</td>
</tr>
<tr>
<td>RTA</td>
<td>Road Transport Authority</td>
</tr>
<tr>
<td>AFT</td>
<td>Administrador Financiero de Transantiago</td>
</tr>
<tr>
<td>TIL</td>
<td>Transport for London</td>
</tr>
<tr>
<td>QIC</td>
<td>Quality Incentive Contracts</td>
</tr>
<tr>
<td>EWT</td>
<td>Excess Wait Time</td>
</tr>
<tr>
<td>CCTV</td>
<td>Closed-circuit television</td>
</tr>
<tr>
<td>GBP</td>
<td>Great Britain Pound</td>
</tr>
<tr>
<td>ITDP</td>
<td>Institute for Transportation and Development Policy</td>
</tr>
<tr>
<td>URBS</td>
<td>Urbanização de Curitiba</td>
</tr>
<tr>
<td>UPGT</td>
<td>Unidad de Planificacion y Gestion de Transporte</td>
</tr>
<tr>
<td>PTB</td>
<td>Passenger Transport Board</td>
</tr>
<tr>
<td>RT</td>
<td>Request for Tender</td>
</tr>
<tr>
<td>WPI</td>
<td>Wholesale Price Index</td>
</tr>
</tbody>
</table>
1. PROJECT BACKGROUND & OBJECTIVES

1.1 Project Background

1.1.1 Urban transport vital for supplementing growth of economy

Urban transport has been identified as a crucial lifeline supplementing the growth of the economy. A well-developed and planned transportation system acts as an integral facilitator to the development of regional, economic and social activity. India has been identified globally as one of the promising emerging economies, with roughly 60% of the country's GDP coming from urban areas. At the same time, the rapidly growing urban population coupled with increased economic activity and increased city sizes has resulted in mounting pressure on the urban transportation system. As per Census 2011, three Indian cities have urban metropolitan population of more than 10 million, and six cities with urban metropolitan population of more than 4 million. The number of million plus urban agglomerates has increased to 55 in 2011 as against 35 in 2001. This rapid pace of urbanization has generated a corresponding increase in the demand for travel. However, transport infrastructure & services have not kept pace with the increase in travel demand.

1.1.2 Bus transport plays an important role in catering to the increasing travel demand

Public transport is the primary mode of transport in the bigger cities and metropolitan areas in India. Among various modes of public transport, buses form a significant part and cater to more than 90 percent\(^1\) of the total public transport in India. Intermediate public transport (IPT) comprising of mini-buses, auto-rickshaws, and rickshaws has supplemented public transport to fill the gap between

---

\(^1\) Urban transport crisis in India by John Puchera, Nisha Korattyswaropam, Neha Mittal, Neenu Ittyerah
demand and supply.\textsuperscript{2}

Further, considering the financial health of various levels of government (central, state, and local governments) and the huge capital investment required to introduce and improve rail based public transport system, \textit{it is evident that bus transport will continue to play a major role in providing passenger transport services in all cities}. Available data\textsuperscript{3}, however, indicate a declining share of bus transport over the years and this is leading to serious social & economic concerns. A cross-country comparison of buses indicates that the bus penetration in India and its major cities is much lower as compared to some cities in developed countries like Australia, UK and other developing countries like Ecuador, Panama, and Chile.

Urban transport services in India, including operation and maintenance of bus transport, are provided mainly by the state or city level agencies, but the services are inadequate as can be observed from Exhibit 1.1. It has also been reported that most municipal transport undertakings are running at a loss and cannot even recover their operating costs.

\subsection*{1.1.3 Key challenges in city bus private operation}

As mentioned, bus transport plays an important role in supplementing the overall urban transport in a city. But considering the current market scenario across most Indian cities, it is understood that both regulated and unregulated bus operators provide city bus services, often competing for fares & passengers. Operators compete aggressively to attract additional passengers, leading to incidents of road accidents and fatalities. Also, in order to limit operational costs, private operators typically run poorly maintained, unsafe & polluting vehicles; further increasing traffic congestion and passenger fatalities. In order to address these challenges, many cities are increasingly seeking private sector participation in the form of PPPs for improving bus transport services. However such PPPs have been experiencing issues on account of revenue generation, quality of services offered, monitoring of service levels, etc., stemming from the lack of standardized regulation, institutional and contractual frameworks. The degree of successful implementation of PPPs has thus been limited. The government, therefore, intends to adopt a structured approach for creating an enabling environment for private investment and operations.

\subsection*{1.1.4 Key initiatives}

Acknowledging the challenges at hand, the Government of India has undertaken a strategic approach for improving urban transport. Some of the important initiatives made in this regard, particularly with regard to the city bus service, are described below.

\textbf{National Urban Transport Policy}

- The National Urban Transport Policy (NUTP) was issued by the Government of India in 2006 to address the unprecedented increase in transport problems faced by major cities in India. This policy was launched by the Ministry of Urban Development (MoUD) to motivate the building of people-centric urban transport solutions instead of focusing on improving the conditions for private motor vehicles. This is a significant departure from traditional urban transport practices in Indian cities, and the needs of the majority of the population using public transport and non-motorized

\textsuperscript{2} http://policy.rutgers.edu/faculty/pucher/FINALarticleTransportPolicy.pdf

\textsuperscript{3} Share of bus transport as a percent of total vehicles in the year 1951, 11.1%, year 1997, 1.3% and year 2008, 0.9%.
modes are now at the forefront. In particular NUTP envisages set up of high capacity public transport systems through the mechanism of Special Purpose Vehicles, and promotion of private sector participation by providing up to 50% of project development.

**JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JnNURM)**

The JnNURM is a nationwide urban renewal mission launched by the Government of India in December 2005, with an aim to modernize select Indian cities (“mission cities”) through large investments in infrastructure. 63 mission cities were initially identified which included all the 35 cities with more than one million population (as per 2001 census), as also 28 other cities that were either state capitals or had historic, religious or tourist importance. One of the key objectives of JnNURM is to provide sustainable functions and roles for city bus operations, financing for procurement of buses through implementation of certain state-level and city-level reforms for urban transport. Some key reforms pertaining to city bus operations include:

- Reimbursement/ waiver of taxes on city bus and BRT investments by state governments and ULBs
- A well organized and efficient city bus system by using ITS through city-specific SPV for bus services

As the first step towards implementation of reforms in urban transport sector, the JnNURM facilitated financing for procuring buses exclusively for city bus services and/or BRT systems in most of the mission cities.

### 1.2 Project Objectives

With the above background, the MoUD, GoI wishes to carry out a study to develop a model contract template for Indian cities to contract with private entities to operate city bus services. For this purpose, the consultant is envisaged to review current public transport contracting experience in India and the best international practices to determine how publicly contracted, privately provided public transport services can be made more efficient and effective in an Indian context through the development of better contract terms, improved monitoring of performance, etc. The broad stages in this consultancy service are:

**STAGE I. Project Inception**

**STAGE II.** Conduct state-of-the-art review of various approaches to public contracting/franchising of private public transport services in cities/metropolitan regions/states in India and throughout the world and international best practices. Report and workshop on findings on review of Indian and international best practices to be conducted for all the states (28), UTs (7) and the million plus cities (as per 2011 census).

**STAGE III.** Identification of the cities to participate in the development of specific contract documents for procurement of private bus services

**STAGE IV.** Preparation of guidelines for the preparation of public transport contract documents in different Indian contexts and contract monitoring and management procedures, Draft Model Contract Documents and city specific Contract Documents

**STAGE V.** Workshop to discuss guidelines, Draft Model Contract Documents, monitoring & management procedures and city specific Contract Documents, and finalization of documents

**STAGE VI.** Dissemination to 1 lakh plus population cities & final updated documents in English and in the official languages in which translation is required

This report prepared for **STAGE II** of Terms of Reference inter alia covers:

---

4 Transforming City Bus Transport in India through Financial Assistance for Bus Procurement under JnNURM - MoUD
1.3 Methodology for state of the art review

In order to understand the city bus private operations, the existing contractual arrangements in delivery of bus service and the corresponding regulatory/institutional frameworks supporting the provision of city bus private operations have been reviewed for a sample of 10 Indian cities and 5 international cities finalized in consultations with MoUD, Government of India.

The list of cities reviewed is as follows:

**Exhibit 1-3 Shortlisted Indian cities**

<table>
<thead>
<tr>
<th>City</th>
<th>State</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad</td>
<td>Gujarat</td>
<td>Jaipur</td>
<td>Rajasthan</td>
</tr>
<tr>
<td>Bhopal</td>
<td>Madhya Pradesh</td>
<td>Jalandhar</td>
<td>Punjab</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>Orissa</td>
<td>Ludhiana</td>
<td>Punjab</td>
</tr>
<tr>
<td>Delhi</td>
<td>Delhi</td>
<td>Pune</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>Indore</td>
<td>Madhya Pradesh</td>
<td>Surat</td>
<td>Gujarat</td>
</tr>
</tbody>
</table>

**Exhibit 1-4 Shortlisted international cities**

<table>
<thead>
<tr>
<th>City</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>UK</td>
</tr>
<tr>
<td>Santiago</td>
<td>Chile</td>
</tr>
<tr>
<td>Curitiba</td>
<td>Brazil</td>
</tr>
<tr>
<td>Quito</td>
<td>Ecuador</td>
</tr>
<tr>
<td>Adelaide</td>
<td>Australia</td>
</tr>
</tbody>
</table>

1.3.1 Methodology for state of the art review for Indian cities

The methodology used for carrying out state of art review is as shown below:

**Exhibit 1-5 Steps for state of the art review**

i. **Identification of Stakeholders:** Before reviewing each of the selected cities, the stakeholders of the city bus transport system were identified. Some of the key stakeholders include Municipal Corporations, Development Authorities, Traffic and Transport Departments, private operators, citizen forums etc.

ii. **Stakeholders Consultation:** The issues and challenges were derived from select stakeholders to understand their perspectives and develop learnings in each city. So, fist hand interaction with various stakeholders broadens our understanding about each city.

iii. **Review of Contract documents:** The contracts used for city bus private operations in the selected cities have been analysed, taking into account the actual implementation and also the views received from various stakeholders.
iv. **Examining various clauses for efficient service delivery:** Based on the findings from interactions in these cities, an understanding about how various clauses of contract impact the bus operations is developed at this step.

### 1.4 Structure and coverage of report

This report starts with a chapter on project background. Here, a brief background about urban bus transport in India, the objectives of this project and the key initiatives and challenges that lie ahead have been covered. Also, the methodology used to carry out this state of art review and a brief summary on the structure of the report have been included. This chapter sets the context for the remaining report.

In Chapter - 2, a brief overview on the city bus private operations is presented. A detailed discussion on concession agreements and various important provisions like allocation of risk, payment mechanisms, penalty / reward frameworks has been presented.

The remaining report is divided into two sections. Section - I is a review on Indian cities. The findings presented in this section emerge from stakeholders’ interactions in the selected Indian cities. Section - II is a review on selected international cities. A detailed analysis on the emergence of city bus transportation systems from the contractual perspective and the learnings drawn from the five selected international cities have been presented here.

Section - I is from Chapter - 3 to Chapter -11. Chapter - 3 discusses the evolution of city bus transport in India since independence. The evolution of PPP contracting in urban bus transport, the trends and challenges that exist in the current scenario are discussed here.

Chapter - 4 to chapter -10 present findings on various contractual provisions in the selected cities and their impact on the overall performance of the bus transportation system as found during the review. It begins with analysis on the importance of infrastructure like depots, review of contractual provisions on infrastructure and the implementation challenges observed in Chapter - 4. Then Chapter - 5 presents a discussion on the impact of contractual provisions on operations and maintenance. Then, in Chapter – 6, fleet procurement issues are discussed and Chapter - 7 captures the findings on term of contracts in the selected cities. Chapter - 8 reviews the existing performance monitoring frameworks under use in the selected cities. Chapter - 9 discusses the termination procedures in the selected contracts. Chapter - 10 discusses the findings about the impact of contractual provisions on costs and revenues for contracting parties. Chapter - 11 summarizes the various conclusions that are drawn out of review of Indian cities.

Section - II includes five chapters (Chapter 12 to 16) presenting learnings from each of the selected international cities for this review viz. Santiago, London, Curitiba, Quito and Adelaide. Chapter -17 is a summary of conclusions on review of international cities.

Annexure -1 gives the list of stakeholders who provided inputs for the section I and Annexure -2 gives a review of each Indian city selected for review.

#### 1.4.1 List of contracts analysed

While conducting stakeholder interactions in selected cities, the following contracts have been made available by the stakeholders for analysis.

**Exhibit 1-6 List of contracts reviewed in the SOTA review**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>City</th>
<th>Contract / RFP/ RFQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ahmedabad BRTS</td>
<td>Signed contract between AJL and Chartered Speed Pvt. Ltd. dated 29-Oct-2008</td>
</tr>
<tr>
<td>2</td>
<td>Ahmedabad City bus services</td>
<td>RFQ titled “For Own, Operate, Maintain Buses on Gross Cost basis for AMTS” – Jan’ 2014</td>
</tr>
<tr>
<td>3</td>
<td>Bhopal</td>
<td>RFP titled “Engagement Of Operator For City Bus Operations on BRTS Corridor &amp; remaining routes of Bhopal City Bus services” - May, 2013</td>
</tr>
<tr>
<td>4</td>
<td>Bhubaneswar</td>
<td>RFP titled “Engagement Of Operators for operation of buses in Bhubaneswar and Puri” – April, 2010</td>
</tr>
<tr>
<td>5</td>
<td>Delhi</td>
<td>Signed contract for cluster 6 between GNCTD and</td>
</tr>
<tr>
<td>S. No.</td>
<td>City</td>
<td>Contract / RFP / RFQ</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>Indore BRTS</td>
<td>Goverdhan Transport Co. Pvt. Ltd dated 20-Jun-2013</td>
</tr>
<tr>
<td>7</td>
<td>Indore City bus</td>
<td>Signed contract between AICTSL and Serco India Pvt. Ltd. dated 26-Nov-2012</td>
</tr>
<tr>
<td>8</td>
<td>Jaipur</td>
<td>RFP titled “Tender document for Sub urban bus service” – Oct, 2007</td>
</tr>
<tr>
<td>9</td>
<td>Jalandhar</td>
<td>RFP titled “For Operation and Maintenance of Buses for JCTSL in Jaipur” – May, 2013</td>
</tr>
<tr>
<td>10</td>
<td>Ludhiana</td>
<td>Operating agreement between JCTSL and Sri Anantha Padmanabha Motors dated 20th May 2008</td>
</tr>
<tr>
<td>11</td>
<td>Pune Hire bus</td>
<td>RFP titled “For operation of buses on operate, maintain and own basis for Ludhiana City bus transport” – May, 2013</td>
</tr>
<tr>
<td>12</td>
<td>Surat BRTS</td>
<td>Signed contract between PMPML and Travel time car rental Pvt. Ltd. dated 19-Sep-2013</td>
</tr>
<tr>
<td>13</td>
<td>Surat City bus services</td>
<td>RFP titled “For procurement, operation and management of BRTS buses on specified routes in BRTS at Surat” – Dec, 2012</td>
</tr>
</tbody>
</table>

Apart from this, the model bus operator agreement for operation and maintenance of urban bus service through PPP on Gross cost contract (GCC) as circulated by MoUD vide ref no. K – 14011/54/2014 – UT – C dated 21st April, 2014, has also been studied as part of review.
2. EVOLUTION OF CITY BUS SERVICE PROVISION

The objective of this chapter is to provide a brief introduction and background to the evolution of city bus transport over the last few decades. This chapter also details out the key elements of concession contracts between private operators and the public authority.

Many cities in both developed and developing countries have experienced a fairly similar evolution of private and public involvement in provision of city bus service. The global trend represents an evolution beginning with the dominance of informal, unorganized private players, followed by an increasing degree of public involvement and eventually, a structured system of private sector participation in the form of well-defined concession contracts. These three stages of city bus service provision, along with their strengths and limitations are described in the following sections. The transition from one stage to another and the changing roles of the public sector authority and private sector players are highlighted in the adjoining exhibit.

Exhibit 2-1 Evolution of bus service provision over time

With this background, this chapter analyses these stages in the evolution of city bus operations, and the compelling reasons that led to the system of structured contracting. The key elements required for a comprehensive contract have been evaluated, and the key takeaways from the current contracts have been covered in the subsequent chapters.

Each of the alternative mechanisms for provision of bus services has come with its own set of advantages and limitations, and the constant endeavour has been to deliver quality bus services at the lowest costs. The principal concerns prevailing in the three basic alternatives are presented in the exhibit below.5

Exhibit 2-2 Basic alternatives for provision of city bus services

<table>
<thead>
<tr>
<th>Principal Concerns</th>
<th>Alternatives</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unregulated Private Firms</td>
<td>Public Monopoly</td>
</tr>
</tbody>
</table>
| Incentives to control costs | High | Low | - High if private operator assumes revenue risk  
- Low if authority assumes revenue risk |
| Incentives for market-oriented services | Low | High | High (backed by strict monitoring mechanism) |

2.1 Dominance of informal private operators in delivery of bus service

Most cities under the review started bus operations with an informal, unorganized and unregulated private sector. In the cities of Adelaide and Curitiba, until the 1970s, provision of city bus services was by private players with little or no regulation by the public sector. In India, before independence, passenger road transport operations were in the hands of private operators. In most instances, even critical decisions on routes and fare fixation were left to discretion of the operators. Allowing market forces to dictate the balance between supply and demand, and determine the service quality was fraught with several problems.

The primary concern with unregulated private firms was that competition was fierce to the extent of being undesirable. Operators functioned with the sole objective of making profits, and the quality of passenger service took a backseat. At the same time, independent operators had no incentive to coordinate or integrate their services and instead, competed in the market leading to undesirable practices and compromise on passenger safety.

This was exemplified in the case of ‘Blueline’ buses in Delhi which had loosely regulated private operations around the 1990s, and had issues like operators competing for passengers, drivers indulging in rude behaviour and safety being put on the back burner as overcrowding of buses was rampant.

2.2 Enhanced role of public sector

Owing to the shortcomings presented by informal private operations such as undesirable on-road competition for passengers (competition in the market), very high fares and compromise on service quality, the public sector enhanced its role in bus service provision over time, either owning and operating buses solely by itself or complementing the bus services provided by private operators.

The primary advantages of public delivery of city bus services were increased accessibility (government could run unprofitable routes also) and increased affordability. In India, following the Road Transport Corporation Act of 1950, various state governments had set up STUs. These STUs however had priorities geared towards inter-state and inter-city operations rather than city bus operations. City bus operations taking a backseat comes from the shortcomings of public delivery of bus services. The case of Santiago, Chile before 1979 represents one such example. Santiago had a state-owned monopoly which was described by Fernandez and De Cea (1985) as a ‘public transport system with over-crowding problems and a low diversity of services, though spatial coverage and accessibility were reasonably good’. The increasing burden to finance subsidies in order to sustain operations led to reduced investment which resulted in overcrowding. A similar state of affairs existed in the case of Sri Lanka, where keeping bus fares at affordable levels was considered more important than ensuring the long term viability of bus services⁶. In India, city bus operations were considered to be loss making and given least priority.

In summary, public delivery of bus services suffered from two main concerns. The first was that public enterprises, not disciplined by competition or motivated by profit, usually had insufficient incentives to control costs. The second was that public enterprises were less innovative or market oriented in the services they offered since they were insulated from competition.

2.3 Structured contracts for private sector participation

---

With excessive burdens on the public finances to operate bus services and the recognition of the need to exploit private sector expertise, the public authorities in many cities eventually transformed their role to regulators of the system, mainly responsible for planning and monitoring the operations of private operators. This gave rise to greater private participation, along with enhanced regulatory role of the public authorities. Operators now competed for the market, and contractual terms were well-defined. The system became more organized and strict monitoring by authorities improved service levels, as compared to the case of uncontrolled competition.

The conclusion reached by ISOTOPE was affirmed concurrently by cities like Santiago, Adelaide, and Quito. Adelaide resorted to competitive tendering in 1995, in a bid to transform from government monopoly that had dominated its operations until then. An important goal of the contracting process was to encourage service innovations on the part of operators. The 38 percent savings observed for Adelaide’s competitive contracting program were consistent with the experiences of other international cities.

**Bus concession contracts** rely on the state to reassert its role as the planner, regulator and ideally, manager of the system network (where it carries a part of the risk). The state holds the primary responsibility of meeting public objectives. Through concession contracts, the state devolves the responsibility for service quality to operators at the ground level, but wields control through the contract mechanism. As this review will show, the management and proper assignment of risk is a critical element for contract success.

The regulation of bus industry faces four main regulatory challenges namely design and integration of transport network to exploit economies of scale and density, regulatory control on frequency and tariff, removing undesirable competition in the street, and maintenance of bus service quality. The concession contract option tackles these challenges.

However, it is important to note that mere establishment of a contracting program for bus services does not guarantee success. Experience shows that competitive contracting does succeed in cost reduction while maintaining service quality, when it is designed in a manner that it: 1) encourages a competitive supplier market, 2) separates transit policy from transit operations, 3) is consistent with the

---

overall transportation goals of the government, and 4) has strong support (preferably in the form of a legislative mandate) from government leaders.

**2.4 Overview of concession contracts**

With a rich experience of the problems faced by cities due to ill-defined roles and poor allocation of risks, private participation in city bus service provision is now based on structured concession contracts. A concession contract is a legal agreement between a private player and a government entity that gives the private player the right to operate public bus services within a city subject to certain conditions set by the government.

Well-defined concession contracts have shown to improve service quality, and ensure alignment of service performance with community or public objectives. Success though, has shown to be largely dependent not just on the structure of the contract and on the business model, but also on factors such as financial sustainability, certainty, stability, and legal protection of the bus operators.

An important issue in an effective contract is the economic incentive provided to the private operator, and this has been shown to be a key determinant of the operator’s performance and whether the service provision meets the desired level.

At the same time, a concession contract must be elaborate enough to describe the division of responsibilities between the parties involved, and must not leave any scope for ambiguity of roles. As shown in the Exhibit 2-3, a comprehensive concession contract must include parameters such as:

- Payment mechanism
- Assignment of risk
- Conditions precedent
- Contract length
- Fleet procurement and maintenance
- Performance monitoring
- Dispute settlement mechanism
- Infrastructure investment and maintenance
- Contract termination clauses

**Exhibit 2-3 Key elements of concession contract**

**Exhibit 2-4 Main mechanisms for performance adherence**
Within a concession contract, three main mechanisms are used to ensure performance: 1) the assignment of risk, 2) the payment mechanism (how is the operators’ revenue determined?) and 3) the fines, penalties and bonuses linked to performance obligations (penalties for under-performance and rewards for meeting or exceeding performance benchmarks). These mechanisms are discussed below.

2.4.1 Assignment of risk

A pivotal issue in contract design is the assignment of risk between the parties. Unmanaged risk will have perverse and distorting impacts on performance and behaviour. The assignment of risk is a key determinant of the success or failure of bus systems and is tied closely to the strength and capacity of the city authority, and its willingness to manage risks that may fall under its span of control. Risk must be shared, and a specific risk must be assigned to that party which is most able to manage it. The three broad types of risks that need allocation are capital expenditure risk, revenue risk and operational risk.

The most delicate type of risk that needs appropriate allocation is revenue risk, i.e. the risk arising out of uncertain demand and hence, insufficient revenue to operate services. Neither party may be in full control to manage revenue risk, thus there needs to be appropriate incentives on both sides to increase demand and build revenue. However in recent times, Indian cities have seen operators predominantly bidding for bus service contracts only if they can avoid revenue risk, leaving the city authority shouldering this predominant risk, often resulting in substantial subsidy burdens. Depending on which party assumes the revenue risk, the type of contract (gross cost or net cost or a hybrid version) is determined.

The exhibit below describes the assignment of the three broad categories of risk.

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Assignment of risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capex Risk</strong>: the risk of lost investment in fleet procurement/ infrastructure development</td>
<td>Since most infrastructure facilities such as depots and bus stops have useful life greater than the average contract length, investment in these assets should preferably be made by the Authority. Moreover, in the case of multiple private operators sharing a depot, it is not advisable to have investment by a particular operator, as it could lead to disputes. Fleet could be procured either by the Authority or by the operators, but in the latter case, fleet transfer/disposal terms must be clearly defined in contracts. The decision to invest in capital assets is influenced to a great extent by the financial strength of the Authority.</td>
</tr>
<tr>
<td><strong>Revenue risk</strong>: the business risk which affects overall profitability or viability of services</td>
<td>Revenue risk could be managed at the level of the bus agency that manages the business of the public transport network or at the private operator level. In main trunk routes, the Authority is generally in a better position to develop passenger demand, as they can exercise a greater control over route planning, fare control, integrated ticketing, car restrictions, speed of the service (by reducing traffic congestion); network planning, barriers to competition etc. In peripheral areas of some cities, where feeder services typically operate, Authority has less control (and information) and the operators are usually in a better position to manage the revenue/demand risk as they understand the community demands better, and can be more adaptive to that demand.</td>
</tr>
</tbody>
</table>
Carrying revenue risk may also give the operator greater incentive to provide quality service and coverage to win over the passengers. In some instances, cities may simply make a political decision to devolve the revenue risk to the private sector.

**Operational risk:** the risk taken by operators who run the buses, typically involving service interruptions, bus breakdowns, accidents, etc., that affects level of service and production. Most operational risks are best managed by the operators providing bus services, as they are the ones who are closely involved in day-to-day operations, and know the on-ground situations/issues better than the Authority, and are thus in a better position to mitigate operational risks. However, certain operational risks such as delays due to traffic congestion are beyond the control of the operators and may best be managed by the Authority.

### 2.4.2 Payment Mechanisms

The **payment mechanism** has a key influence on the operators’ behaviour, in that they will try to increase their profitability either by increasing their income or decreasing their costs. If the payment mechanism is misaligned with public service objectives, the benefits may reduce, causing the bus reform to fail altogether.

To demonstrate this in practical terms, the payment mechanism must take into account the following key points:

**Contract incentives that ensure adherence to desired service levels:**

To the highest extent possible, the desirable/mandatory quality of service level should be categorically specified in contracts in all possible dimensions. The payment mechanism must be linked to the incentives for operators to provide timely and regular service. Higher service levels may be willingly provided if revenue compensates for the additional costs. It is required that an economic mechanism be built into the payment system to incentivize the operator to provide efficient and high-quality service. For example, the motivation to pick-up or let passengers alight, the cleanliness of buses, behaviour of the driver towards passengers, addressing passenger complaints, the control of information flow when route changes or expansions may increase demand, amongst others.

**Passenger and road safety:** Where revenue is overly dependent on the number of passengers transported (or the driver’s income is directly linked to passenger numbers), operators often compromise on safety in the pursuit of maximizing passengers and consequently, revenue. This may cause irregular and illegal behaviour and safety concerns. When the payment system is de-linked from passenger revenue, it reduces competition in the market.

**The revenue risk and access to finance:** Where the contract places a higher revenue risk on the operator, the operator will often increase the price by adding a risk premium. Low certainty of income may also affect their ‘credit-worthiness’ in the view of the financial lending sector, which may affect operators’ ability to source finance for fleet acquisition.

---

8 This is a popularly held view, but in cases of a captive market this may not be the case.
The payment mechanism adopted will thus be one of the key determinants of the success of the partnership contract. Broadly, payment mechanisms can be grouped into three main categories: fixed payments, payments based on operational variables, and payments based on passengers transported, but ‘hybrid’ versions are also used. Well-designed contracts aim to achieve not only the intended community outcomes, but also efficient risk management. The most prevalent payment mechanisms in the Indian context are discussed below. However, these are not exhaustive and their hybrid versions could also be considered and implemented.

2.4.2.1 Fixed payment contracts

This is the extreme end of a **gross-cost contract** in that it removes operators from demand risk altogether with a fixed payment mechanism which is not dependent on any operational variables such as passenger/km but pays according to capacity provided. Income guarantee on any type of contract generally makes it a fixed payment contract. Fixed payments give maximum income security to operators, reducing the risk premium charged and lowering the financial costs of bus reform. Financial institutions can predict concessionaires’ income with relative certainty. There is also no incentive to drive ‘on-street’ competition.

Gross cost contracts are useful for low demand routes or non-peak hours, when demand is low and services may not be privately profitable. In this case, revenue risk is taken by the Authority and the operator is paid to provide particular number of kilometres of service. Kilometre-based contracts are also widely used in BRT systems, where monitoring service level is easier, and the Authority is in a far better position to manage the revenue risk by demand analysis, service planning, managing system promotion and marketing, parallel traffic treatments/restrictions, central fare collection, fare integration etc.

The major downside of fixed payments is the lack of economic incentive, making operators complacent, with little interest to cater to demand or be responsive to users’ needs; or proposing service adjustments to improve services and increase demand. Route planning in this case needs to be solely carried out by transport authorities. Strict and effective monitoring with penalties for non-performance must be present, along with strong enforcement. When linked to correct control of operational variables and penalty regimes, this could prove to be an effective contract type, under specific cases such as low density routes.

2.4.2.2 Payments based on passengers transported

This is a **net-cost contract** (NCC), where demand risk is borne by the operator. This form of contract links operator payments to the quantum of patronization or capacity utilization or Load Factor (LF)\(^9\), either for each bus or the entire fleet and or in any other manner. It minimizes the tendency of operators to focus on the number of kilometres of operation rather than picking up all passengers en-route, which is a major downside in a gross-cost contract. Another valuable aspect of operators carrying revenue risk is that it motivates operators to improve existing services. While the Authority cannot completely free itself from its planning role, this approach can enhance the role of the private operators in providing inputs to route planning. This may be especially useful in a fast growing city, where it may be difficult for a centralized authority to quickly determine the changing patterns of travel and new sources of demand. Operators based in the community often have a better sense of transport demand and if they can profit from it, they will propose network changes, creating a useful ‘market – driven’ mechanism for the Authority to optimize services.

The case studies in this review demonstrate the folly of insulating the operators completely from demand risk, and the experience has tempted authorities to once again make payments based on passengers transported, thereby creating an incentive in the contract for operators to respond to

---

\(^9\) Load factor (LF) is readily quantifiable and easily worked out as passenger kms serviced and carrying capacity (seated plus standees) kms supplied are regularly computed.
demand risk. However, the critical choice lies not in simply choosing between net or gross cost, but in finding the correct balance to suit the specific needs of a particular city.

But given that much of the reform in developing countries is replacing systems where the operator takes the whole demand risk with one where performance incentives drive competitive and curtail illegal behaviours, the question arises whether reform should mimic these incentives by paying operators based on the number of passengers transported?

Furthermore, in many cases, operators may not be in control of demand, such as operating 'lean' routes or where there is volatility in demand due to a decline in the general state of the economy and employment. Also, growth in private car ownership will affect public transport demand in ways difficult to predict for an operator at the beginning of a long-term concession.

Access to finance is also made more difficult as these non-controllable demand risks make cash flow projections difficult, and affect the credit-worthiness of the operator from the banks’ perspective, hampering fleet modernization efforts. Lack of demand information make this issue even harder to manage.

The risk carried by operators will also affect service delivery. Where demand is high, and revenues cover costs, operators will probably have incentives to provide services according to the operational plan; however, if demand is low and revenues do not cover costs (as in off-peak and night services), then operators will want to reduce services. Other control mechanisms will then need to be employed to guarantee service levels, where the Authority will assist to compensate the costs of providing the service level it wishes to provide.

2.4.2.3 Payments based on operational variables

Hybrid versions of pure net-cost and pure gross-cost contracts may also be applied. Operators could be paid based on the supply of kilometres to the system (reflecting fuel and other direct costs), per operational hour (reflecting labour costs), per bus operated (reflecting capital cost) or passenger seat-kilometres (where capacity of vehicles is a calculating factor).

However, there is no one model type, as contracts vary depending on how much revenue risk the Authority carries, and to what extent operators can influence passenger growth. It is therefore unwise to simply categorize cities into set contract types – as it is the mechanisms within the contracts that are the key instruments that define their use and value.

Paying operators based on operational variables links payment to performance in supply. Payment and reward give operators the incentives to provide an adequate level of service.

Operators’ performance may suffer where service levels in the contract are too prescriptive, and where there are no incentives to cater to demand, as their revenue is unaffected by demand-inducing efforts. And just like in the case of fixed payments, regulators will have to depend more heavily on fines and penalties to maintain service quality – increasing monitoring costs.

Adding further performance measurements may not always be practical, especially if there are limitations on measuring and monitoring. In 2008 and 2009, the authorities in London tested a variant of their Quality Incentive Contract by adding driving quality and vehicles’ internal and external presentation as additional quality variables linking performance to operators’ payments. They did not proceed beyond the pilot stage because of the high monitoring costs of these variables.
Given the merits and demerits of the various contract types, the adjoining exhibit reflects the incentive characteristics of each type.

### Exhibit 2-6 Incentive characteristics of different payment mechanisms

<table>
<thead>
<tr>
<th>Payment Mechanism</th>
<th>GCC</th>
<th>NCC</th>
<th>Hybrid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentive to cater to demand</td>
<td>Poor (-)</td>
<td>Good (+)</td>
<td>Generally poor, but improves when operators can adjust services</td>
</tr>
<tr>
<td>Incentive to improve service levels</td>
<td>Poor (-)</td>
<td>(+) if demand is high (-) if demand is low</td>
<td>Good, except when service levels are too prescriptive</td>
</tr>
<tr>
<td>Improved creditworthiness (better access to finance)</td>
<td>Good (+)</td>
<td>Poor (-)</td>
<td>Good (+)</td>
</tr>
<tr>
<td>Improve passenger and road safety</td>
<td>Good (+)</td>
<td>Poor (-)</td>
<td>Good (+)</td>
</tr>
<tr>
<td>Cost for planning and monitoring</td>
<td>High (-)</td>
<td>Low (+)</td>
<td>High (-)</td>
</tr>
</tbody>
</table>


#### 2.4.3 Penalty regime within a concession contract

Besides payment mechanisms, contracts also contain sanctions and penalties to act as deterrent mechanisms for operators to maintain good performance in carrying out their duties. However, their effectiveness relies largely on the ability and capacity of the Authority to carry out sufficient monitoring and whether these penalties are administered fairly. This requires clear clauses in the contract and penalties that are commensurate with the severity of the event.

Penalties are generally applied for service failures i.e. not complying with specifications, such as missed trips, or for contravening a set rule or procedure, or for not maintaining quality standards.

Where operators bear no revenue risk (such as in a gross cost type of contract) the contract will need to rely more heavily on penalties and rewards to enforce performance and quality, but there are several considerations when using penalties, including:

**The exact service obligations need to be well-defined:** While some service obligations are straightforward (e.g. trip frequencies) others can be vague, such as customer service behaviour. Also, some unforeseen behaviour may arise that is not included in the contract specifications and in this case payment mechanisms incorporating exact service obligations may itself be sufficient incentive.

**Require continuous monitoring and enforcement:** While payment systems have built in incentives, the penalty regime relies on monitoring and enforcement which is both costly and difficult to implement. Intelligent Transport Systems (ITS) such as vehicle tracking can help, but require a strong and effective Authority that is able to continuously monitor and enforce the contract. Although ITS tools have high costs, deploying it will not only be useful for the normal task of monitoring the system but will also produce a lot of information that when properly used can generate invaluable data for the future planning and improvement of the system.

**Penalties must be enforceable, practical and realistic:** Draconian penalties that place excessive burdens on the operator or contract termination conditions that the Authority finds difficult to enforce are unrealistic and impractical. Lack of clear guidance on transition arrangements in case of contract termination is a case in point. An example of this occurred in the case of Santiago, where all operators failed to perform leaving the Authority with no possibility of terminating contracts. Subsequently the Authority improved its monitoring, and with each contract renegotiation, more demand risk was placed on operators, reducing dependency on penalties.

**Penalties must exceed the cost avoided by non-compliance:** The value of the penalty must be high enough to act as a deterrent to non-compliance. If the operator is better off even after incurring the penalty, it will not be effective unless there is an escalation mechanism. Hence, the cost of penalty must exceed the gains to the operator from non-compliance.
LEARNINGS:
This chapter provided an overview of the evolution of bus services over the last few decades, and the trends in the level of private sector participation. It brought to the forefront the importance of structured contracts as a basis for successful private participation.

However, it is important to note that contracts cannot predict every eventuality, so it is crucial that a mutual sense of partnership exists between the private operators and the Authority. While payment mechanisms and penalties may be used to drive operator performance, it is vital that contract conditions enhance an attitude of partnership. A good example is the case of Adelaide, where an effort was made to develop a more equal partnering arrangement between the Authority and the private sector, compared to what can be delivered under traditional regulatory frameworks. In Adelaide's consultation process with operators, in the later rounds of tenders, the operators themselves contributed ideas and suggestions on how incentives could be improved in the contract design; for example, longer contract terms will encourage long term planning and more committed investment and suggested removing arbitrary limitations such as maximum bus fleet.

While operators will naturally lobby for their own interests, a number of their suggestions could prove to be mutually beneficial and it would be useful to adopt them in contracts. In the case of the Indian cities reviewed, the suggestions of the operators are rarely taken before the contract is signed, which leads to dissatisfied operators who function as per the conditions set by the Authority. They do not feel they are equal partners in the 'partnership'. It would be useful to adopt a collaborative approach when drafting contract terms, so as to achieve the performance standards that meet social objectives, while also making economic sense for the operators.
SECTION I - REVIEW OF INDIAN CITIES
3. EXISTING CONTRACTUAL FRAMEWORK FOR PRIVATE BUS OPERATIONS

This chapter introduces the contracting models that have been implemented in the cities reviewed. It also shows how JnNURM has become a key driver for a renewed focus on the bus operations at the city level. It further captures trends observed in the PPP contracts for city bus operations, and the gaps/challenges that exist in these contracts. While State Transport Undertakings (STUs) have provided transportation services for several decades after independence, the focus of Urban Local Bodies (ULBs) on city bus transport started increasing with the advent of JnNURM. This led to the formation of Special Purpose Vehicles (SPVs) tasked with providing city bus transport and in some cases managing the bus networks. In recent years, many PPP contracts have been signed in India for procuring city bus private services but the study has shown that contracting frameworks are still in the infancy/evolution stage.

At this juncture, the JnNURM has evolved by offering support for creation of bus transport infrastructure in select cities in the country, stimulating the priority of providing city bus systems. As a result, ULBs in many Indian cities have started using PPP models in order to quickly establish bus transport systems.

3.1 Impact of JnNURM on city bus private operations in India

Till the advent of JnNURM, STUs used to own the fleet and operate with their own staff. Their aging fleet and continued losses often resulted in poor service to the public. Soon after the launch of JnNURM initiative by the Government of India in 2005, several city-specific SPVs were formed and made responsible for city bus transport. JnNURM funds were also utilised for procurement of the fleet in several Indian cities. Around 2007-08, feasibility studies started in many cities for implementing BRTS system. Being the first city to implement BRTS successfully, Ahmedabad started the feasibility study in 2005.

Exhibit 3-1 Formation of SPVs in the select cities

<table>
<thead>
<tr>
<th>Year of SPV Formation</th>
<th>Loughnana (LCTSL)</th>
<th>Bhopal (BCTSL)</th>
<th>Ahmedabad (AIL)</th>
<th>Delhi (DIMTS)</th>
<th>Jaipur (ICTSL)</th>
<th>Bhubaneswar (BPTSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2 Emergence of GCC as preferred contractual framework in India

There are several risks involved in the operation of city bus transport system. Of these risks, the most critical ones are operational cost risk and revenue risk. Irrespective of the type of contract, the operator takes same operational cost risk. This risk is on account of increase in wage prices, fuel price, cost of consumables and traffic congestion en-route. Most of the contracts reviewed did not have adequate provisions to consider these risks.
On the basis of who takes revenue risk, two forms of contracting mechanism are identified: a Gross Cost Contract (GCC) model where the public authority assumes the revenue risk and pays a fixed premium to the private operator periodically to provide services, and the other being a Net Cost Contract (NCC) model where the public authority provides infrastructure and the private operator bears the revenue risk and provides bus transport services. NCC operators may either pay a route authorization fee or seek grant for the routes allocated under the contract.

Through the study, it is found that cities have dealt with these risks differently, as shown in Exhibit 3-2. Though JNNURM funds for procurement of fleet brought down the capex risk in many cities like Indore and Jaipur, other cities like Surat and Ahmedabad have used these funds to invest in infrastructure, transferring the procurement risk to private operators. As it can be observed from the exhibit below, in the initial years, most of the cities went for NCC, with procurement of fleet being with private operators. In essence, the authorities transferred the entire responsibility of the project to the private operators. After facing issues with NCC, cities gradually moved towards GCC. Only in the case of Indore, investment towards procurement of buses was shared by both parties.

Exhibit 3-2 Scale of risk according to contract type and player

<table>
<thead>
<tr>
<th>Revenue Risk</th>
<th>GCC</th>
<th>NCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement by public authority</td>
<td>Jaipur - 2013</td>
<td>Bhubaneswar - 2010</td>
</tr>
<tr>
<td>Procurement by private player</td>
<td>Ludhiana - 2013</td>
<td>Bhagalpur - 2009</td>
</tr>
<tr>
<td>Procurement shared between the two parties</td>
<td>Indore</td>
<td>Surat City - 2007</td>
</tr>
</tbody>
</table>

SPVs have adopted either GCC or NCC according to their financial capability. The study observed that only large operators who had financial capability bid for NCC models. After experiencing losses in most of the net cost models, these operators started favouring GCC models, for the following reasons:

1. **Less than expected return on investment:** Private operators expect to receive a return on investment higher than the rate of bank interest, and ideally in the range of 15-22% p.a. If this is not assured, private operators would avoid the business.

2. **Transfer of all uncertainties to private operator:** Under Net Cost model, there are many uncertainties as compared to Gross Cost model. For example, under a Net Cost model, operators face the risk of:
   a. Change in route permissions
   b. Drop in ridership
   c. Change in political environment
   d. Change in government policy
   e. Lack of timely revision of fares in line with cost increases
   f. Price volatility (e.g. fuel cost)
   g. Threat of competition from other modes (metro/BRT/IPTs etc.)
Exhibit 3-3 shows the trend towards increasing use of Gross Cost models for private operators since 2006.

The difficulties with the NCC models are illustrated by a recent experience in Surat, where several attempts made to invite bids under net cost for city bus operations could not succeed in the year 2012. Also Ludhiana could not find an operator to offer services under net cost and city bus operations were finally contracted under GCC in the year 2013.

The study found that these trends (procurement with JnNURM fleet and contracting using GCC models) have brought down the risk profile of the private operators over time. Exhibit 3-4 below represents this graphically.
3.3 Tendering processes for the cities reviewed

The tendering processes for the cities under review are found to be different from one another, each presenting its own unique challenges and shortfalls. In some of these cities, the first round of tendering did not draw any bidders, and contract conditions had to be modified and re-tendered in order to attract bidders. A striking example is the case of Surat, where the tender had to be floated six times before the bid could finally be awarded.

Ludhiana City Bus Services Ltd. operated bus services on a GCC model until July 2014. However, the model turned out to be financially unsustainable as the revenues earned by the Authority were significantly lower than the payment to be made to the private operators on per-km basis. As a result of this, payments from the government to the operator were not processed immediately and the losses to the tune of INR 10 crore had accumulated by mid-2014. Eventually, the authority decided to do away with the GCC model and conducted a tendering process to procure operators on the NCC model. The first tender was floated in September 2014, with the bank guarantee set at 20 percent of total fleet value. The value of the bank guarantee was considered too high by the prospective bidders, and it drew no bidders. The bidders shared their apprehensions and provided their inputs during the pre-bid meeting. In December 2014, the tender was floated again, with bank guarantee reduced to 5 percent, and two bidders participated during the second round of bidding. The contract was finally awarded with a contract length of 9 years.

In Indore, when the bus operators were initially envisaged to be procured through a competitive tender, there was not a single private operator willing to participate since they felt the NCC model was unviable and they were unwilling to assume the revenue risk. However, after lot of consultation held by AICTSL, some private players expressed their interest and the contract was finally awarded.

3.4 Lack of comprehensive contractual frameworks

As PPP based contracting for city bus operations is a recent trend in India, most Indian cities do not have comprehensive contractual frameworks necessary for proper implementation and operation. Important clauses such as conditions precedent, comprehensive monitoring framework, quantitative measurement of performance, well-defined payment mechanisms as well as well-defined termination mechanisms etc. are lacking in the contractual frameworks. One such example is the provision of termination payments which are not only inadequate in existing contracts but if present are not equitable. At the same time, the rewards and penalties in current contracts are not sufficient incentive/deterrent for each contracted party to oblige with their responsibilities.

This study will help in the development of a model contract suitable to Indian context. The review of contracts obtained in the selected cities will also highlight some of the causal factors that influence operation ‘on the ground’.

Exhibit 3-5 Important clauses to be included in a city bus contract

- Conditions precedent for important components like depots etc.
- Comprehensive monitoring frameworks
- Payment mechanism with time frames
- Quantitative measurement of performance
- Long term incentive system/transparent penalty mechanism
- Transition mechanism before termination or expiry of contract
- Specification of the service to be provided
3.5 Possible options for city bus operations

Between the two extremes of public monopoly and complete privatization, lie a range of PPP models including GCC, NCC and their variations. The present experience of private operators in India has shown them that they lack support from transport authorities when they take on NCC. This lack of support stems from cities abdicating all responsibilities of public transport under NCC model. This causes the private operators to assume revenue risk without the wherewithal to manage it. The lack of bids from private operators in several cities considering NCC model follows this trend. At the same time, gross cost contracts in Indian cities are largely incomplete, and lacks essential clauses to protect both parties. Moreover, the performance monitoring is inexistent in most cities which precludes from ensuring expected outcomes.

It is important to note that a number of hybrid variations of GCC and NCC could also be attempted given their suitability to a particular city. The success of contract models lies not merely with the type of contract chosen but also with the comprehensiveness of the contract clauses and their effective implementation.

Exhibit 3-6 Possible range of contract models

<table>
<thead>
<tr>
<th>Public monopoly</th>
<th>PPP models</th>
<th>Private Sector Licensed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Public sector plans, owns and operates services</td>
<td>Pure GCC model</td>
<td>• Minimum service level</td>
</tr>
<tr>
<td></td>
<td>Variations of GCC and NCC</td>
<td>• Certain regulations</td>
</tr>
<tr>
<td></td>
<td>Pure NCC model</td>
<td>• Fare control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Area/ route control</td>
</tr>
</tbody>
</table>

LEARNINGS:
This chapter elaborates on the evolution of city bus transport in India, from complete control of the state to experimentation with PPP models in the recent past. It has also highlighted the contracting mechanisms used in Indian cities and also gives other options which can be successfully implemented. It has also discussed the key elements that must form part of contractual agreements. It brings to light an important aspect that the success of a bus system depends not merely on the type of contract selected, but also on the comprehensiveness of the contract clauses.
4. BUS DEPOTS & OTHER INFRASTRUCTURE

The contractual provision of city bus transport assets like depots, bus corridors and bus shelters has been analysed in this chapter. The study has found that ‘built assets’ should be commensurate with fleet procurement / scale of operations.

Provision of built assets generally remains the responsibility of public authority, however, often the authorities have failed to provide adequate infrastructure before and during operations, thus affecting the level of service and the efficiency of operation. Poor planning and the lack of infrastructure commitment have led to operational losses that affect the viability of the business. The cause and effects of this issue are shown in Exhibit 4-1 below.

Exhibit 4-1 Importance of planning and infrastructure city bus transportation

As can be seen in the above exhibit, when the entire system i.e. the route, bus shelter, and depot etc. is not designed properly, problems emerge and magnify at the implementation stage. This has repercussions on the project, resulting in overall inefficiency. With a strong contract document, the public authority can overcome such inefficiencies because the conditions precedent would be well defined in the document.

4.1 Review of contractual clauses related to Bus Depots

Bus depots are a key requirement in a city bus operation, and their important aspects are shown in Exhibit 4-2. Bus depots are often difficult to manage due to lack of suitable or available land in cities. Other than providing safe and secure parking and essential fleet maintenance functions, the location of the depot affects the viability of the bus operations, particularly if the location causes excess
‘dead-running’ increasing cost per km, but is not compensated.

The study has reviewed the contractual conditions related to depots in the various selected Indian cities, and

Exhibit 4-3 below outlines the results.

Exhibit 4-3 Clauses on contractual obligations in providing depots

<table>
<thead>
<tr>
<th>City</th>
<th>Model</th>
<th>Conditions Precedent</th>
<th>Depot responsibility</th>
<th>Depot design provisions in the contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>GCC</td>
<td>Yes</td>
<td>SPV; Additional requirement has to be arranged for by Operator</td>
<td>Yes</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>GCC</td>
<td>No</td>
<td>Not promised. On “As is when is basis”</td>
<td>No</td>
</tr>
<tr>
<td>Bhopal</td>
<td>NCC</td>
<td>No</td>
<td>SPV</td>
<td>No</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>NCC</td>
<td>No</td>
<td>SPV</td>
<td>No</td>
</tr>
<tr>
<td>Delhi</td>
<td>GCC</td>
<td>No</td>
<td>SPV; Annual fee of Rs. 60,000/- should be paid</td>
<td>Yes</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>GCC</td>
<td>No</td>
<td>SPV</td>
<td>No</td>
</tr>
<tr>
<td>Indore City</td>
<td>NCC</td>
<td>No</td>
<td>Not promised by SPV</td>
<td>No</td>
</tr>
<tr>
<td>Jaipur</td>
<td>GCC</td>
<td>No</td>
<td>SPV</td>
<td>No</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>NCC</td>
<td>Yes</td>
<td>SPV</td>
<td>No</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>GCC</td>
<td>No</td>
<td>SPV</td>
<td>Yes</td>
</tr>
<tr>
<td>Pune</td>
<td>GCC</td>
<td>No</td>
<td>Not committed; Depot provided only if possible</td>
<td>No</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>GCC</td>
<td>No</td>
<td>SPV</td>
<td>No</td>
</tr>
<tr>
<td>Surat City</td>
<td>NCC</td>
<td>No</td>
<td>SPV</td>
<td>No</td>
</tr>
</tbody>
</table>

As can be observed from the exhibit above, in most of the cities, the responsibility of providing depot is with the SPV. The responsibility to provide plant and equipment in the depot is with the operator, but the details of plant and equipment to be provided have not been provided in the contract. Further irrespective of the life and cost of the equipment, the operator is often made responsible for modernization of the depot.

To make the contract equitable, it is essential that plant and equipment to be procured by the authority and operator be specified in the contract. As a good practice, the plant and equipment that has life greater than the contract duration or requires high investment (as specified in the contract) may be provided for by the authority. The remaining plant and equipment may be procured by the operator.

4.1.1 Comprehensive depot design parameters have limited coverage in the existing contracts

Design parameters for a depot such as sufficient bus spaces, number of maintenance bays, and rigid pavement for parking etc. have not been covered comprehensively in most of the contracts reviewed.

Exhibit 4-4 Effects of depot design on day-to-day operations
Delhi has a detailed schedule on the provisions at the depot. It lists down the facilities to be arranged by the concessionaire also. Such clear provisions would help the private operators to assess what infrastructure would be available to them and thus plan accordingly.

Similarly, only two contracts mentioned design parameters of their respective depots. Inadequate facilities or poor depot design can have detrimental effects of bus operation as shown in Exhibit 4-4. To illustrate, the depot provided by the public authority at Jaipur is sufficient enough to park only half of the fleet. As a result, the operators have been facing multiple issues like theft of fleet accessories, driving an increase in maintenance costs and penalties. Similar problems have been found in Bhopal as well. In case of Surat City bus, when the BRTS commenced, the operator was forced to share the existing depot. As the depot was already undersized, sharing with BRTS fleet has led to further congestion, and difficulty in maintenance of both the fleets. It is thus important to define a standard capacity for a given size of depot.

### 4.1.2 Inclusion of conditions precedent for providing the committed infrastructure has limited coverage in the contracts reviewed

The study showed that out of the selected cities, only two contracts have set ‘conditions precedents’ committing depot space to the operator. The Delhi cluster contract includes a detailed schedule on provisions at depot. It is thus important to include in the conditions precedent specifics on infrastructure to facilitate efficient provision of services.

### 4.1.3 Dead Kilometres are poorly accounted for in some contracts

The term ‘operating kilometres’ have different definitions in different contracts. While some gross cost models calculate the operating kilometres from depot to depot, others calculate it on the basis of the length of actual route, meaning that the bus operator carries the cost of dead running. Naturally, some operators under GCC hold the opinion that the compensation on the basis of operating kilometres should include dead kilometres.

The resolution to this matter will depend on whether the overall payment is sufficient to cover a percentage of dead running and whether the operator has been able to select a depot (or the authority has provided a depot) within an efficient range of the end of route. Ultimately, the cost of dead running must be accounted for (somebody has to pay for it). So this must be accounted for in the contract, and not left as an ambiguous issue.

The provision in this regard in different cities has been tabulated in Exhibit 4-5.

<table>
<thead>
<tr>
<th>City</th>
<th>Operating Kilometre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>Route length</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Route length</td>
</tr>
<tr>
<td>Delhi</td>
<td>Depot to Depot (for the recent clusters)</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>Depot to Depot</td>
</tr>
<tr>
<td>Jaipur</td>
<td>Depot to Depot</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>Depot to Depot</td>
</tr>
<tr>
<td>Pune</td>
<td>Route length</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>Depot to Depot</td>
</tr>
</tbody>
</table>

In a more notable omission related to Net Cost Contracts, operators pointed out that if the location of depot is not known at the time of bidding the contract, the dead kilometres cannot be calculated. As can be seen from the Exhibit 4-6, only few contracts are found to specify the location of depots in the contract:

<table>
<thead>
<tr>
<th>City</th>
<th>Details about location of depot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surat City</td>
<td>No</td>
</tr>
<tr>
<td>Bhopal</td>
<td>Yes</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>Yes</td>
</tr>
<tr>
<td>Indore City</td>
<td>No</td>
</tr>
</tbody>
</table>
4.2 Options for provision of bus depots

Establishing bus depots involves acquisition of land, requires high capital investment and also has a life span much longer than the movable assets like buses, so it is preferable for ownership of bus depots to remain with the authority. Public authorities are generally more capable of providing depot facilities as they control planning permissions; often have available land or have land resumption powers; but many of the contracts delegate the responsibility of finding a depot / parking space to private operators.

This is especially valid for supply and franchise contracts, where the authority may from time to time change the contractor. Leasing the depot to the operator will ensure that the authority is not captive to the operator who holds strategic depot sites. However, if the authority is not financially capable the operators may be made responsible for construction of depots, but in this case, the contract length should be long enough for the operator to recover its investment.

4.3 Inadequate assignment of responsibility and accountability for bus infrastructure

The study found a number of cases where poor bus infrastructure affected the viability and efficiency of bus operations. This was due to the lack of commitments by the public authorities in providing bus priority infrastructure, ITS control systems or passenger facilities such as bus stops etc. Often, these facilities were promised but rarely delivered, leaving the NCC operators suffering losses due to operational inefficiency, or in the case of GCC, the authority itself would bear the losses. In both cases, passengers suffered by way of inadequate and unsafe conditions and longer travel times.

4.3.1 Design of bus corridors is a critical factor but ignored in contract design

One of the most serious impacts on bus operations is declining average bus speed due to traffic congestion. It has a very large impact on cost of operation, as halving the bus speed will require doubling the bus fleet to maintain the same level of service (and carry the same number of passengers). This issue cannot be ignored in any bus contract.

A pertinent example is the importance of priority bus corridors for the success of any BRTS system in maintaining ridership and encouraging a mode shift from private car travel. When the corridors are poorly planned, passenger demand will fall as the system fails to attract ridership. Expected revenues will not materialize, leaving the operation in financial difficulty. The study found that for the selected cities, none of the contracts contained implementation of BRTS corridors in the conditions precedent. Particularly in Bhopal, operators for BRTS are under a NCC and experience financial loss due to incomplete implementation of BRT corridors.

This can be resolved by including in the contract payment mechanism, an incentive for the public authority to keep their part of the contract bargain. In essence this means that in GCC, where the revenue risk which is brought upon by lower efficiency, rests with the authority. Being at risk financially will spur the authority to pay attention to operational efficiency and ridership. This conclusion can be drawn from the experience in Indore BRT system. As per the corridor design, only one bus supplier was able to meet the criterion to supply buses. However, the company did not have the capacity to supply buses as per the estimated demand and hence, the corridor was not utilized to its full capacity. So, the BRT system in effect compounded the traffic congestion problem. As a respite, private vehicles have now been permitted to ply in dedicated BRT lanes. This led to reduction in the planned number of trips that the buses could make, thereby leading to financial losses for the operator. A NCC which is based on ‘assurances’ from the authority to provide assistance by way of infrastructure cannot be depended upon, without a contractual incentive to ensure they perform as promised.

4.3.2 The provision of bus shelters is important but neglected in contract design

Similarly, bus shelters were identified in the review as an important asset that is suffering neglect. Without bus stops, passengers do not know where to wait for the bus, which destinations are available, how much time they need to wait etc. There is also an opportunity for bus stops to provide passenger information – PIS (next bus time) to reduce uncertainty, and improve reliability and
convenience for passengers. In all the cities reviewed, responsibility of construction and maintenance of bus shelters is with the public authority, but in practice the issue gets limited attention.

Basic information provision to the public at the bus shelters is also very important, for e.g., network map, route information, timetable, fares information, helpline number etc. There are multiple activities in this regard, including the management and updating of the network and route information; the design and production of the information material and the placement and updating of information material at bus stops. At the same time, staffing of information and customer support contact points is also important. During the review, public authority officials acknowledged the value of PIS, but pointed out the significant cost of providing such systems, and held that they should only be considered on the basis of passenger profile (where passengers are equipped enough to use such systems). They considered a higher priority to be placed on basic structures and easy accessibility of the bus stops for the passengers, to promote ridership.

None of the contracts included construction/availability of the bus shelters in the conditions precedent. Many operators opined that this should be part of conditions precedent, as failure to supply infrastructure would cause loss of their revenue.

4.3.3 Penalty clauses in case of unavailability of infrastructure are not found in the contracts reviewed

Consequently, many private operators pointed out the need for provision of penalties for the losses incurred by failure of the public authority to provide the promised infrastructure. While there could be delays in completion of construction of supporting infrastructure, clauses like “condition precedent” or “penalties for delayed provision of infrastructure” are required. The inclusion of these clauses would safeguard operators from unforeseen losses due to delay in provision of infrastructure from public authorities.

**LEARNINGS:**

This chapter has highlighted the need for contracts to specifically include the responsibility and obligations to provide the necessary bus infrastructure; otherwise the integrity of the bus system can be severely compromised.

In the case of depot provision/ location, it seems that the authority must take a stronger role to resolve these issues, and that ‘dead kilometres’ to and from the depot needs to be accounted for.

It has also shown that providing such infrastructure is a ‘risk issue’ in that bus operators are in a far more difficult position to provide these facilities than the authority, but are most prone to the risk of it not being provided.

This implies that the contract must be structured in such a way that incentivizes the authority, so that it is in its own best interest to build and maintain infrastructure and improve operating conditions to improve efficiency (by bearing revenue risk and cost risk) or be contractually bound to compensate operators for losses (where operators are taking revenue and cost risks) if the authority has failed to provide the necessary conditions or facilities.
5. REVIEW OF CLAUSES IMPACTING OPERATIONS AND MAINTENANCE

This chapter covers the review of contractual provisions pertaining to operations and maintenance of city bus transportation systems. A brief snapshot of contractual provisions for the selected items in various cities is shown in Exhibit 5-1 below.

The exhibit represents a mapping of the reviewed contracts in terms of the operational and maintenance parameters. Various clauses in the contracts have been grouped into operational and maintenance heads and their coverage in the contracts and implementation on ground are analysed. For example, aspects such as fare collection and monitoring, ITS control and customer satisfaction form a part of operational parameters in the provision of bus services. Maintenance includes upkeep of fleet, depots and utilities, after-sales support and insurance claims. In the table, the green ticks indicate the existence of contractual provision for the parameter as well as on-ground implementation of the same. Single red signs indicate lack of contractual provisions for the respective items. Two red signs indicate existence of contractual clause for the particular parameter, but lack of on-ground implementation of the same.

Exhibit 5-1 Snapshot of the clauses impacting operations and maintenance in contracts reviewed

<table>
<thead>
<tr>
<th>NET COST</th>
<th>GROSS COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bhopal</td>
</tr>
<tr>
<td>Net Cost</td>
<td>✓</td>
</tr>
<tr>
<td>Gross Cost</td>
<td>✓</td>
</tr>
</tbody>
</table>

- ✓ = Contractual provision exists and on-ground implementation is also there
- XX = Contractual provision exists but on-ground implementation is not there
- X = Contractual provision is not there

NA = Not Applicable

* In case of procurement of fleet by public authority, the contract should provide for exemption of penalties if the delay in maintenance owing to deficiency in after-sales service by the manufacturer

** In case of procurement of fleet by public authority, the contract should provide for a time-frame within which the operator would be paid the insurance claim amount by the public authority upon receipt of the same from the insurance company

It can be seen that for every indicator, there are problems found in the contractual frameworks of the reviewed models. In some cases, while some provisions like ITS monitoring and ETVM ticketing exist in the contract, they have not been implemented in practice. Some of the key observations made from the above table are highlighted below:

Net Cost Model
It is observed that most of the cities are not using ITS as they don’t have the provision for the same in the contract, whereas ITS monitoring is important for a city bus system as it helps the city to check on operator’s performance and system integrity for the passengers. Further, for the operator also, it is beneficial as it provides improved transparency when penalties are imposed by the public authority for a performance issue. For some cities, there is a provision of ITS in contract but it is not implemented in reality.

There is no fare collection monitoring in cities such as Indore and Jalandhar. Monitoring of fare collection is important as it helps authorities to calculate the actual revenues to the operator. None of the cities reviewed have fleet maintenance documents in place.

**Gross Cost Model**

Most of the cities do not have fare collection monitoring provision, in case fare collection is done by a third party appointed by authority. It is important to have a monitoring system to keep a check on revenue leakage.

In Jaipur and Ludhiana, ITS system on buses has not been implemented, even though there is a provision in their contract.

Even though there is a fare collection provision in contracts for cities such as Pune and Jaipur, in reality they have not implemented it in the bus operations.

A more detailed analysis about the findings for each indicator is presented as follows.

### 5.1 Findings regarding day-to-day operations

Based on stakeholders’ interactions carried out in several cities, this chapter analyses various contractual clauses impacting day-to-day operations, particularly aspects such as selection criteria for revenue collection methodology and customer grievance redressal, as they are found to affect service quality in day-to-day operations.

#### 5.1.1 The contracts have limited fare collection methods specified

The mechanism and methodology employed to collect fares will directly impact revenue leakage and enforcement of fare collection. The contractual provisions related to fare collection have been reviewed for all the selected cities. Though there are contractual provisions for implementation of ETVMs in many contracts, the timeline for implementation is not defined. As a result, though many contracts mandate ETVM machines for ticket collection, their use is limited in practice, as is the case of Jaipur and Pune. Fare collection technology is also important to collect and store passenger trip data, which is useful in route and service planning.

In Jaipur, revenue collection methodology has created problems in day-to-day operations. Agents are appointed for the ticket collection and they are compensated on the basis of revenue collection per kilometre. The private operator is contracted under Gross cost model. It led to chaos due to conflict of interest between operators and agents. As the agents forced the drivers to stop the buses till they get sufficient revenues, the drivers wanted to move the bus to prevent penalties for missing the timelines of their contract. This offers a unique lesson about how revenue collection methodology can affect day-to-day operations.

In Delhi, contingency ticketing mechanism is planned for the failure of ETVMs. An emergency ticket pack with waybill is also issued. If the ETVMs fail for any reason, the conductors issue tickets using these emergency ticket packs. This will prevent loss of revenue in the unforeseen case of failure. The authority has appointed a third party to collect revenue on its behalf.

#### 5.1.2 Revenue protection teams formed by private operators are ineffective

The study found that public authorities predominantly use monitoring teams/inspectors for random checks on performance of the system, particularly relating to the fleet, drivers and enforce ticket issuance by conductors and ticket purchase by passengers. It seems that operators on NCC (while taking revenue risk) do not tend to carry out much monitoring or checking. Private operators generally lack the ability to enforce compliance.
The argument is that whoever takes revenue risk should be able to enforce compliance for fare collection and ticketing, to prevent revenue leakage. Yet, clauses to empower private operators in this regard are found in very few contracts, although Bhopal and Surat are exceptions. However in reality, the Surat bus contract empowers operators to penalize passengers for non-compliance but does not have legal backing to enforce it at the ground level. Operators suggest that the authority should support operators in this area. Exhibit 5-2 summarizes the study findings.

**Exhibit 5-2 Clauses on empowerment of squad team of private operator**

<table>
<thead>
<tr>
<th>Cities</th>
<th>Clauses on empowerment of squad teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhopal</td>
<td>A passenger shall be charged a prescribed fare from point of origin to the point where he/she was found ticketless (Refer clause Under Schedule -10, 5 (a) in the contract)</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>Private Operator</td>
</tr>
<tr>
<td>Indore City</td>
<td>Not Mentioned</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>Not Mentioned</td>
</tr>
<tr>
<td>Surat City</td>
<td>Penalize traveller commuting without ticket in cash as determined by the authority (Refer to Clause 28.1.3)</td>
</tr>
</tbody>
</table>

5.1.3 **ITS monitoring of operator performance is lacking in most of the contracts**

ITS monitoring is an important component of a city bus system as it helps the city to monitor and control operator’s performance and system integrity for the passengers. For the operator, it is beneficial as it provides improved transparency when penalties are imposed by the public authority for non-performance. The responsibility of setting up computerized control centre is generally with the public authority, but in some cases it is delegated to private operator. The mapping of roles and responsibilities as mentioned in various contracts for ITS monitoring and control is summarized in Exhibit 5-3. The contracts of Jaipur, Jalandhar and Ludhiana have mentioned ITS-based monitoring, but this is not implemented on-ground allegedly on account of lack of financial and manpower resources. As a result, the operators in Jaipur expressed inability to verify the penalties imposed on them. As a good practice, it would thus be prudent to include implementation of ITS as one of the conditions precedent in the contract.

IT-based monitoring offers several other benefits such as enabling the public authority to collect data about passenger trips, which assists in service planning. So while it is shown to be a key instrument of control and planning, operations control centres have not been included as a conditions precedent in any contract.

**Exhibit 5-3 Responsibility of setting up control centre**

<table>
<thead>
<tr>
<th>City</th>
<th>Control Centre Setting up responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>SPV</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>SPV</td>
</tr>
<tr>
<td>Bhopal</td>
<td>SPV</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>SPV</td>
</tr>
<tr>
<td>Delhi</td>
<td>SPV</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>SPV</td>
</tr>
<tr>
<td>Indore City</td>
<td>Not Mentioned</td>
</tr>
<tr>
<td>Jaipur</td>
<td>SPV</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>SPV</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>Operator</td>
</tr>
<tr>
<td>Pune</td>
<td>Not Mentioned</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>SPV</td>
</tr>
<tr>
<td>Surat City</td>
<td>Operator</td>
</tr>
</tbody>
</table>

Monitoring using ITS, involves high investment. So it is best that the party that most needs the output from ITS, owns, invests, and maintains that equipment. Hence, Authority should own, invest and maintain the components of the system which are critical for monitoring the performance of the operator, and the operator should own, invest and maintain the equipment that are required for its own needs, such as navigation system to monitor movement of buses. Since the operator maintains the
bus, so the on-board equipment will be better maintained by the operator. This type of division will ensure that the investment is fairly divided between both the parties.

5.1.4 Lack of ability of authorities to measure transport outcomes in many contracts

Similar to weak monitoring capacity is the lack of proper mechanisms for the authority to measure system performance from a customer viewpoint. The provisions related to customer call centre/customer grievance redressal mechanisms in the existing contracts of the ten cities are reviewed under this study. Even though such mechanisms would ensure that passengers get quality service from the operators, many cities do not have any official mechanism except for the traditional suggestion/complaint boxes set up at various bus stops/bus stations. Exhibit 5-4 shows how various contracts address this issue, and shows that most cities do not provide for customer grievance redressal.

Some operators have suggested that performance measurement should not only use a penalties/rewards system but that good performance should be counted toward eligibility for future business opportunities that become available in the same city or elsewhere. Indeed, such incentives are practiced in overseas bus contracts.

Exhibit 5-4 Customer grievance redressal

<table>
<thead>
<tr>
<th>City</th>
<th>Customer Grievance Redressal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>Yes, quote: &quot;The Operator shall maintain Passenger Complaint/Suggestion book on every bus and at every Information booth. The Operator shall redress the complaints/suggestions pertaining to bus operations from the passengers in reasonable time. The Authority shall be right to inspect the complaint/suggestions books and responses given to the passengers.&quot;</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Bhopal</td>
<td>Yes, quote: &quot;The Operator shall adopt a proper complaint grievances redressal mechanism. The Operator shall maintain a record of all the complaints and will at its own cost commence investigation within 3(three) days of receipt of complaint and shall be recorded in a fair and accurate manner. The Operator should respond in writing within 7 (seven) days of the receipt of the complaint with the proposed course of action/relief to be provided to the complainant. All complaints of a sensitive nature shall be dealt at the Operator's managerial level and in case there is no suitable course of action taken by the Operator within 14 (Fourteen) days of receipt of such complaint, the matter shall be handled by BCLL, at the Operator's cost and risk. The nature and information of complaints shall be kept confidential by the Operator except as otherwise required to be disclosed under the Applicable Laws.&quot;</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>same as Bhopal</td>
</tr>
<tr>
<td>Delhi</td>
<td>Yes. Category B infraction – Not carrying a complaint book and not issuing it to Passenger or Inspector (DIMTS representative) on demand</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Indore City</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Jaipur</td>
<td>same as Bhopal</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>Yes, quote: &quot;The Company, either by itself or through its appointed agency (ies), shall have the right to monitor and review the performance of Operator and its buses to ensure that the objectives of the city bus services are being met in an efficient manner. This review shall inter alia include the following: Review and action on matter related to customer complaints&quot;</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>Same as Ahmedabad city</td>
</tr>
<tr>
<td>Pune</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>Same as Bhopal</td>
</tr>
<tr>
<td>Surat City</td>
<td>Not mentioned</td>
</tr>
</tbody>
</table>
5.2 Review of clauses affecting Maintenance of Fleet, Depots and Other Infrastructure

The clauses in various contracts for proper maintenance of fleet, depots and other infrastructure have been reviewed. It has been found that clear demarcation and assignment of responsibility for maintenance is required to ensure system efficiency and longevity of the support infrastructure. During stakeholder interactions, it was found that the public authority has greater capacity in performing certain responsibilities, in say facilitating water and electricity connection in a depot, and a better control over security.

In this section, clauses with respect to asset maintenance in the existing contracts are examined.

5.2.1 Depot maintenance

During discussions with private operators, the facilities available at depot were rated as important issue for day-to-day operations, not only with respect to design but also with respect to maintenance of fleet. The findings about depot design, planning and construction are discussed in chapter 4.

5.2.1.1 Provision of utilities can be arranged more easily by public authorities than private operators

Public utilities such as water and electricity are provided by local municipalities. When private operators have difficulty in securing these services themselves, it has a detrimental impact on the day-to-day operations and proper maintenance of the fleet. Sometimes, depots are leased out on a shared basis; leaving the responsibility of utilities to shared parties. Exhibit 5-5 summarizes our findings in the various contracts reviewed.

<table>
<thead>
<tr>
<th>City</th>
<th>Model</th>
<th>Responsibility of Arranging for a depot</th>
<th>Responsibility of Providing and Paying for Utilities at Depot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City BRTS</td>
<td>GCC SPV</td>
<td>Additional requirement has to be arranged for by Operator</td>
<td>Operator</td>
</tr>
<tr>
<td>Ahmedabad City GCC</td>
<td>GCC</td>
<td>Not promised. On &quot;As is when is basis&quot;</td>
<td>Operator</td>
</tr>
<tr>
<td>Bhopal GCC</td>
<td>NCC SPV</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Bhubaneswar GCC</td>
<td>NCC</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Delhi GCC</td>
<td>NCC SPV</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Indore BRTS GCC</td>
<td>GCC</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Indore City NCC</td>
<td>GCC Not promised by SPV</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Jaipur GCC</td>
<td>NCC SPV</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Jalandhar GCC</td>
<td>NCC</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Ludhiana GCC</td>
<td>NCC SPV</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Pune GCC</td>
<td>NCC Not committed; Depot provided only if possible</td>
<td>Not mentioned</td>
<td></td>
</tr>
<tr>
<td>Surat BRTS GCC</td>
<td>GCC</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>Surat City NCC</td>
<td>GCC</td>
<td>Operator</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen from the exhibit above, all the cities have outsourced the responsibility of obtaining utilities as well as paying utility bills to private operators. However, some support from public authorities on best effort basis is expected by private operators in the arrangement of these utilities.

5.2.1.2 Security concerns exist at bus depots

During review it was found that lack of proper security incurs unnecessary costs for the operator. It appears that operators in some cases are not able to provide sufficient security for the fleet. Theft of spare parts and bus accessories adds to maintenance cost, and the potential of catastrophic damage e.g. from fire cannot be discounted.

Efforts to improve security in some cases cannot be left to an operator alone, as the public authority can assist by ensuring secure infrastructure, where the facilities are publically-owned. As buses are
‘public assets’ engaged in public service (even if fleet is actually owned by a private operator), the authority has an interest in securing the fleet from loss or damage, and may consider a greater involvement of the police to protect these public assets. These buses can also be insured against theft and vandalism.

Due to lack of security at bus depots, operators in Ludhiana, Bhopal and Jaipur have been incurring significant losses due to theft of bus accessories. Over and above these losses, the private operators also paid penalties for damages due to vandalism detected on the fleet. In Jaipur, the depot space is not sufficient to accommodate all the fleet, requiring buses to be parked in service lanes, making the fleet vulnerable to vandalism, theft etc.

The contractual responsibility for fleet and depot in all cases belongs to the operator, as shown in Exhibit 5-6, but in practice authority’s involvement in ensuring protection of assets is also important.

## Exhibit 5-6 Responsibility for security of fleet and depot

<table>
<thead>
<tr>
<th>City</th>
<th>Security responsibility of Bus and Bus Depot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>Operator</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Operator</td>
</tr>
<tr>
<td>Bhopal</td>
<td>Operator</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>Operator</td>
</tr>
<tr>
<td>Delhi</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>Operator</td>
</tr>
<tr>
<td>Indore City</td>
<td>Operator</td>
</tr>
<tr>
<td>Jaipur</td>
<td>Operator</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>Operator</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>Operator; SPV assists in lodging police complaint</td>
</tr>
<tr>
<td>Pune</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>Operator</td>
</tr>
<tr>
<td>Surat City</td>
<td>Not mentioned</td>
</tr>
</tbody>
</table>

### 5.2.2 Fleet maintenance

Fleet maintenance is a key requirement for city bus operations to continue providing quality and reliable services, free of breakdowns and without rapid and avoidable depreciation of the fleet condition. Yet, most contracts seem to be deficient in ensuring good maintenance practices leading to a number of problems.

### 5.2.3 Compliance to fleet maintenance documentation requirements is limited under many Contracts

The maintenance of fleet is generally done by the operator as part of the contract. While the detailed parameters for monitoring of buses are discussed in chapter 8, here the findings on provisions related to submission of maintenance related documents are presented.

## Exhibit 5-7 Specifications for fleet maintenance in the contract

<table>
<thead>
<tr>
<th>City</th>
<th>Fleet</th>
<th>Fleet Maintenance Specs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>Private Operator</td>
<td>Monthly report in compliance with highest maintenance standards as per manufacturer's manuals</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Private Operator</td>
<td>Certificate of road worthiness every quarter</td>
</tr>
<tr>
<td>Bhopal</td>
<td>SPV (Upfront fee paid by operator per bus)</td>
<td>Not included</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>SPV</td>
<td>Not included</td>
</tr>
<tr>
<td>Delhi</td>
<td>Private Operator</td>
<td>Bus Maintenance log book should be maintained and duly authenticated by person in charge of vehicle workshop. Bus maintenance data should be sent to Control centre in the pro forma specified as per an annexure on a daily basis</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>SPV</td>
<td>Not included</td>
</tr>
<tr>
<td>Indore City</td>
<td>Private Operator</td>
<td>Not included</td>
</tr>
</tbody>
</table>
Jaipur | SPV | Technical specs as a schedule; Schedule not found
Jalandhar | Private Operator | Not included
Ludhiana | SPV | Monthly report in compliance with highest maintenance standards as per manufacturer's manuals
Pune | Private Operator | Not included
Surat BRTS | Private Operator | Not included
Surat City | Private Operator | Not included

Only a few contracts require private operator to submit documents like “Certificate of road worthiness” every quarter or monthly reports of compliance with the manufacturers’ manual. The cluster contract of Delhi mandates the private operator to maintain a detailed log book and send reports on maintenance details on daily basis. The template for sending such report is included in the contract itself so that there is a transparent mechanism for monitoring the maintenance of the fleet by the operator. Given the tendency of operators to cut costs (particularly in bus maintenance), contracts should ensure submission of fleet maintenance documents in a time-bound manner.

5.2.3.1 Manufacturers play a vital role in maintenance of the fleet, but are outside the contract

After sales service and product support from bus manufacturers are important for proper maintenance of fleet. However when public authorities procure the fleet from their selected manufacturer and hand over/lease these buses to the private operators for operation and maintenance, the manufacturers show little interest as the private operator is not viewed as ‘their customer’. Yet, the operator will bear the losses from inadequate support and lack of remedy to bus faults.

Strong terms and conditions with manufacturers for availability of after sales support to fleet delivered are missing. Yet in some cases, where they are included contractually (through an annual maintenance contract), proper service is still lacking (suggests an enforcement problem, or lack of penalty in the contract terms). Operators can be penalized for vehicle condition faults although the situation is out of their control.

Some less evident problems exist such as in the case of Indore BRTS, where the bus warranty commenced at the date of purchase and not from the date of delivery, giving the manufacturer an incentive to delay the delivery of fleet, resulting in the warranty period being almost over when the fleet was actually delivered.

The study has revealed two elements towards resolving issues, i.e. more inclusive knowledge between affected parties and more inclusive contractual liability on manufacturers, as follows:

- Contract conditions between manufacturer and the procuring party should be presented to the bus operator / public authority so that all parties are aware of the terms and conditions of purchase / maintenance agreements and the conditions/ obligations imposed on manufacturers.

- Some stakeholders have advocated a tripartite agreement between manufacturers, public authorities and the operators for the provision of proper after-sales service that ensures efficient maintenance of the fleet

However, on the last point, manufacturers may not be either willing to commit to such tripartite contracts or may decide to exploit the situation by charging a huge premium for providing the service which the public authority or private operator may not be ready to bear. As an example, HSRTC (Haryana State Road Transport Corporation) was offered renewal of AMC at a hefty price of approximately Rs. 85/- per km\(^{10}\) while the actual operating cost of the bus itself is half that price.

A resolution would need to involve the purchasing party of the fleet to exercise leverage on the bus manufacturers to uphold their side of the bargain. This would involve strong contractual conditions with real enforceable penalties made evident in the tender process (as part of the bidding process) so that manufacturers cannot exploit what is essentially a captive market once the fleet is delivered.

\(^{10}\) Based on discussions with stakeholders
It should also be noted that contracted maintenance costs should reflect the difference across the periods during the life of the vehicle, where repair costs are low at the short to medium term and rising later in the vehicle service life. Lower km premiums with a shared risk for major repairs may be a way of reducing overall costs, and reducing the need for the manufacturers to charge a hefty risk premium.

5.2.3.2 Mechanism for payment of insurance claims needs attention in current contracts

When the fleet is owned by the public authority, the insurance claims go directly to the public authority. Any delay in payment of these claims may affect the timely repair, and can impact the day-to-day operations. Some operators have complained that there is no time frame defined in the contract for payment of claims, and suggest that this be included in the contract terms.

5.3 Compensation for vandalism is defined in very few contracts

Whenever the fleet is damaged due to riots or any public uproar – the causes beyond the control of a private operator, the responsibility for rectification of damages / replacement of fleet are covered only in the contracts for Ahmedabad city and Ludhiana.

Clause 27 Ludhiana City Bus Contract:

In the event that any damages or need for repairs to the Project Assets arises during the Agreement Period on account of Vandalism, the Operator shall be required to make good the damages and repair and rectify the Project Asset to the original conditions at the cost of LCBSL. The Operator may claim re-imbursement of the cost less of insurance proceeds for such repair and rectification calculated at mutual agreed terms between LCBSL and the Operator.

During consultations many operators expressed the view that all contracts should contain such clauses, to compensate for damages due to vandalism.

LEARNINGS:

Contracts must be ‘complete’ in setting out the roles and responsibilities for operations and maintenance. The responsibility for important and critical issues like fare collection, revenue protection, IT monitoring, data collection, fleet security, vehicle maintenance etc. need to be clearly spelled out, and with mechanisms to ensure contract obligations are delivered upon.

Illustrating the need for every risk aspect to be under contractual terms is the ability of bus manufactures to escape from their after-sales support obligations. Clearly they need to be included in strong contractual obligations with real enforceable penalties through the tender process.

IT monitoring is a modern feature with a vital role to play in performance measurement in contracted operations, and also to measure outcomes. Greater priority needs to be given to this function.
6. FLEET PROCUREMENT ISSUES

The findings about issues in fleet procurement/delivery and its impact on the operations of the bus system are presented in this chapter. Multiple factors such as government processes, design specifications of fleet, choice of manufacturer, responsibility of procurement, permit approvals can all impact the time taken to operationalize the fleet. Delay in operationalization of fleet is found to have ripple effects on the whole system, including scale of services, ridership, revenues and the image of the bus transport system as a whole. Exhibit 6-1 illustrates the cause and effects.

Exhibit 6-1 Causes and effects of delay in fleet delivery

Here, findings about the issues in fleet procurement are presented based on a review carried out in various cities. There are divergent views, often contrary, advocating procurement by public authority vis-à-vis private operators.

6.1 Causes of delay in operationalization of fleet

When public authorities are responsible for fleet purchases, a number of factors can lead to delayed fleet delivery. These factors can include: delay in finance; uncertain political environment; multiple and layered approval process; additional checks and balances to ensure transparency and avoidance of corruption; choice of design, choice of manufacturer, and even the permit approval process at the RTA. This indicates that the public authority needs to exercise due care from the initial specification of the fleet to the final delivery. Time-based clauses in purchase contracts may be useful to keep parties compliant.

During the review, several issues have emerged which are presented as follows:

6.1.1 Limited market availability of fleet design specified in the contract

India has limited bus manufacturers, which results in delays if the authority specifies requirements that are unavailable in the local market. An example was in the procurement of buses in Surat, where a delay was caused due to non-availability of EURO IV emissions standard buses being sold in India. As a result, the operator (under an NCC) has suffered losses due to low scale of operations.

Stakeholders (both private and public), are of the view that the fleet specifications should be chosen in accordance with the conditions of a city and their availability. Also, since operators carry the operational risk, they should be given flexibility to choose the design depending on the road conditions, ground clearance, length of roads etc. The experience of bus operators’ must be leveraged and their input taken when deciding on fleet specifications. Technical specifications of buses issued by Ministry of Urban Development, Government of India may be used as guidelines for fleet specifications, and the city should avoid too much customization beyond these specifications. While some basic design parameters and standards can be specified by the authority, other aspects can be left to the choice of the operator.
It is important to note that specifying the fleet requirements in extensive detail might lead to delays in procurement if the specified fleet type has very limited manufacturers. Also, in some instances, this might be done with the objective of giving an advantage to a particular manufacturer or set of manufacturers. On the other hand, if the specifications are too loose and vague, there is a high probability that the operators procuring the fleet might compromise on quality and hence on safety, in order to cut costs and increase their profitability.

For general information about fleet selection, PPIAF/World Bank Urban Bus toolkit and technical specifications of buses issued by Ministry of Urban Development, Government of India\textsuperscript{11} may be referred to.

6.1.2 Establishment of vendor monopoly leads to delay in fleet delivery

When the manufacturer is specified by a public authority in the contract or when the fleet is procured by a public authority, timely delivery of fleet and availability of post sales service needs to be ensured. Before awarding a contract, the public authority may verify the past performance of the manufacturer, their capacity to deliver and availability of service centres. At the same time, the authority may also ensure that the choice of technical specifications is available with multiple vendors in the market so that if one vendor fails to deliver, the public authority may replace it with another one for delivery. The recent CCI (Competition Commission of India) ruling on anti-competitive behaviour in sale of spares should reduce the impact of vendor monopoly.

\textit{In Indore BRTS, there is a significant delay in the delivery of fleet due to availability of the specified design with only one manufacturer. Even though the model operates as Gross Cost, the operator suffered huge losses due to reduced operating kilometres. The public image of BRTS is also impacted due to the lower frequency of operations.}

Exhibit 6.2 illustrates the multiple factors that impact on a choice of supplier. Problems in numerous contracts appear to indicate inadequacies or compromises in the competitive tender bidding process.

\textbf{Exhibit 6.2 Parameters for consideration while choosing design and manufacturer}

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{parameters.png}
\caption*{Parameters for consideration while choosing design and manufacturer}
\end{figure}

6.1.3 Stage carrier permits, NOCs from RTA can be obtained faster with the support of public authority

The process of obtaining permits from RTA is a time taking process. However, if it is the public authority’s responsibility to obtain permit approvals or public authority supports in the process, the fleet can be quickly deployed for operations.

\textit{In Surat City bus system, it has been found that 17 buses out of the total fleet of approximately 65 buses operated in Surat city bus system are yet to get permits. This delay in obtaining permits can

\begin{itemize}
  \item \textsuperscript{11} Recommendatory Urban Bus Specifications – II issued in April 2013
\end{itemize}
significantly affect the scale of operations in a city.

While the vehicle registration and road worthiness certificates are to be obtained by the respective owners, the responsibility of obtaining Stage Carriage permits under various contracts is also with the private operators, as shown in Exhibit 6-3. Only few contracts like Ahmedabad City bus (AMTS), Jalandhar City bus (JCTSL) and Surat BRTS have taken up the responsibility of obtaining route permits as per contract.

Exhibit 6-3 Responsibility of permit approvals

<table>
<thead>
<tr>
<th>City</th>
<th>Fleet Ownership</th>
<th>Responsibility of obtaining Stage carriage permits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>Private Operator</td>
<td>SPV</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Private Operator</td>
<td>Private Operator</td>
</tr>
<tr>
<td>Bhopal</td>
<td>SPV</td>
<td>SPV</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>SPV</td>
<td>SPV</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>SPV</td>
<td>SPV</td>
</tr>
<tr>
<td>Indore City</td>
<td>Private Operator</td>
<td>Private Operator</td>
</tr>
<tr>
<td>Jaipur</td>
<td>SPV</td>
<td>SPV</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>Private Operator</td>
<td>SPV</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>Private Operator</td>
<td>Private Operator</td>
</tr>
<tr>
<td>Pune</td>
<td>Private Operator</td>
<td>Private Operator</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>Private Operator</td>
<td>SPV</td>
</tr>
<tr>
<td>Surat City</td>
<td>Private Operator</td>
<td>Private Operator</td>
</tr>
</tbody>
</table>

6.2 Effects of delay in procurement / operationalization of fleet

6.2.1 The delay in operationalization of fleet has ripple effects on the transport system

Any delays in bus delivery following procurement affect the size of fleet and consequently the scale of operations, which ultimately impacts passenger capacity; timeliness of service; reliability of service and most importantly the image of the system. This impacts the business case, in terms of ridership and revenue. Exhibit 6-4 shows the sequential impacts of bus delivery delays and Exhibit 6-5 demonstrates the financial impacts when scale of operation is reduced.

Exhibit 6-4 Effects of delay in fleet operationalization

Exhibit 6-5 Increasing losses with decreasing revenues

6.2.2 Private operators in NCC as well as GCC can get affected due to delay

While the NCC operators are obviously affected by delays in fleet delivery (as they take direct revenue risk), GCC operators are also affected. GCC contracts currently define “Minimum assured bus kilometres”, meaning that operators reach viability only when the promised scale of operations or full
fleet (envisioned in the contract) is operational. Delay in delivery of fleet from manufacturer or acceptance by public authority generates less than expected revenue to the operator. Their fixed costs for infrastructure and staffing are planned in accordance with the size of fleet and scale of operations envisioned at the time of signing the contract, and reduced operations would not provide sufficient revenue inflows.

For example, in Indore BRTS, the contract was signed in April 2013 for operation of 50 buses. The full fleet had to be operational within six months. However, only 24 buses are operational so far. Due to a delay of over a year, the private operator was unable to achieve breakeven. The delay in supply of fleet was due to issues at manufacturer’s end, and the entire system got affected on this account.

So, while designing the system it should be ensured that it is a standard design for BRTS system and other components of bus system. This will promote competition in market and also encourage bus manufacturers to manufacture in bulk.

6.3 Responsibility for fleet procurement

The decision on which party should procure the fleet must take into account several factors, including inter-alia financial capacity of the authority, type of contractual structure, length of contract, capacity and maturity of the private operators, as shown in the adjoining exhibit.

**Exhibit 6-6 Decision framework for fleet procurement**

During the review, two contrary views emerged as to who should procure the fleet. One view is that procurement of fleet by public authority reduces the capex and investment risk for the private operator. This has the effect of reducing entry barriers to the contracted bus business, and allows the authority a wider choice of operators. It also enables effective exercise of step-in rights by the authority in case the operator fails to perform as per agreed and desirable standards. The competing view is that private operators are better in choosing the best product that meets the technical specifications at lowest cost in the market. As discussed previously, under such an arrangement the private operator is also the customer, being able to choose the manufacturer and holding it accountable for after sales support. The operator then owns the entire responsibility. The various provisions for bus procurement are summarized in Exhibit 6-7 below.

**Exhibit 6-7 Procurement responsibility**

<table>
<thead>
<tr>
<th>City</th>
<th>Procurement of Fleet</th>
<th>Funded by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>Private Operator</td>
<td>Private operator</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Private Operator</td>
<td>Private operator</td>
</tr>
<tr>
<td>Bhopal</td>
<td>SPV</td>
<td>70% JNNURM 30% Operator</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>SPV</td>
<td>70% JNNURM 30% Operator</td>
</tr>
<tr>
<td>Delhi</td>
<td>Private operator</td>
<td>Private Operator</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>SPV</td>
<td>70% JNNURM 30% Operator</td>
</tr>
<tr>
<td>Indore City</td>
<td>Private Operator</td>
<td>Private operator</td>
</tr>
<tr>
<td>Jaipur</td>
<td>SPV</td>
<td>100% JNNURM</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>Private Operator</td>
<td>Private operator</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>SPV</td>
<td>100% JNNURM</td>
</tr>
</tbody>
</table>
More fleet purchases have been undertaken by SPVs as JNNURM has been instrumental in providing funding for fleet procurement by public authorities. Prior to JNNURM, the procurement of fleet was done by private operators under PPP contracts. The exhibit below highlights the situations in which it is preferable for the author/operator to procure the fleet.

1) **Purchase and ownership by the authority**

Often, the authority is in a better position to buy the fleet, on account of either availing itself of a government-funded programme to buy buses or having the financial capacity to buy the fleet where the operator does not. In case of a supply-type contract, it may prefer to own the buses and depots so that it is not captive to the contractor. Specific risk issues such as insurance and operators’ obligations need to be assessed.

When the authority buys the fleet, the main concern is whether or not the operators will maintain the fleet properly, as they appear to have no stake in the fleet. This risk is actually overstated, in that while the operator does not own the buses, it is the vehicles that earn them a living. Poor maintenance will result in breakdowns and service unreliability, affecting their earning potential on account of adjustments for penalties by the authority under the performance regime. Not owning the fleet also reduces the overall revenue risk of the business for the operators, placing them in a more secure position.

However, when the authority purchases the buses and operator is the ultimate user, the manufacturer/supplier may ignore concerns raised by the operator in the after sales support. The solution lies in the formation of a tri-partite contract with bus suppliers to place contractual obligations on them for after-sales support.

In the case of the construction of a BRTS system, where there is a definite construction time and anticipated start date, it may be worthwhile for the authority to order the fleet to allow for the necessary ‘lead time’ for supply, especially if contract negotiations with operators could cause a delay. Buses typically require 3-6 months delivery time from the date of order. If the authority procures and finances the buses, once buses are delivered and there is a contracted operator in place, if the authority wishes the operators to own the buses they can transfer ownership (and finance obligations).

**PROS**

- Lower investment risk so the private operators can focus only on operations and maintenance of the project.
- More bidders will participate in the bidding process which allows the Authority a wider choice of operators.
- Easier to dismiss a failing private operator if it does not own the fleet.
- Authorities can order in advance and not be limited to a tight schedule

**CONS**

- The authority will have to bear the entire capital cost on its own or through loan or grant.
- Lack of after sales support for operators.
- Authority needs to set and monitor maintenance obligations.
- Ownership/operations issues have insurance implications – may cause delay in responding to claims.

**CONSIDERATIONS:**

- The Authority, where possible, should consult various stakeholders including the prospective operators when developing fleet specifications.

2) **Purchase and ownership by private operator**
In many cases, the city authority will prefer that the operator buys the fleet, freeing themselves from the financial burden and procurement processes. It is often based on the view that the bus operators are in the best position to make fleet decisions as the operation and maintenance of the fleet is their responsibility. There is a strong case supporting this view, although the authority is still able to stipulate fleet specifications as they relate to passenger service and quality.

In a gross cost contract, it is feasible for either the authority or the operator to buy the fleet; however, the advantage for the authority to be the fleet owner is that it is not captive to the operator, and can more easily dismiss a poorly performing operator.

In a Net-cost contract, it is unusual for the authority to own the fleet, but the authority may offer some financial incentives to assist operators to invest in the fleet. A common vehicle is an ‘interest subsidy’ that compensates operators for the cost of finance. One-off payments for fleet purchases tend to be unsuccessful as operators often arrange for the fleet cost to be inflated to exploit the subsidy, and do not operate for long as they struggle with operational losses.

**PROS:**
- The authority carries no financial burden for fleet.
- Bus operator can select their preferred type, model and specifications (generally under broad specifications set by the authority)
- Generally faster procurement by operator.
- Able to hold bus manufacturers directly accountable for after-sales support.

**CONS:**
- Limits contract bidding to operators with sufficient financial capacity.
- Authority is captive to the operators in case of severe contract conflict/termination.

**CONSIDERATION:**
- Fleet ownership by any party is less of an issue if a good contract relationship exists.

### Exhibit 6-8 Responsibility for fleet procurement

<table>
<thead>
<tr>
<th>By the city authority</th>
<th>By the operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority is in a financially stronger position than the operator</td>
<td>Operator is in a financially stronger position than the authority</td>
</tr>
<tr>
<td>Authority can avail government funded schemes (funding from operator if needed)</td>
<td>NCC: Preferably, procurement by operator so that it maintains the buses properly (with financial assistance by authority if needed)</td>
</tr>
<tr>
<td>GCC: Preferably, procurement by authority so that it is not captive to the operator</td>
<td></td>
</tr>
</tbody>
</table>

3) *Authority owns buses and investment is shared by private operator*

In a number of Indian cities, a more peculiar bus procurement/finance model has evolved due to the JnNURM scheme where the central government can provide grant of up to 50% of the bus procurement cost; 20% being provided by the state; and the remaining 30% by the city. As some cities in India are not financially sound, they are requesting private operators to fund this 30% of the fleet cost. Typically the scheme allows operators to raise finance using the bus as security up to 30% of the value of the bus.

The viability of such a scheme is reliant on whether operators find it attractive, as they are financing 30% of the fleet that they do not own, as the authority has the ownership by virtue of having the majority investment in the fleet. However, in the larger picture of a business opportunity, operators may find this preferable to bearing the entire cost of the fleet on their own (and the cost of the bus share is reimbursed in earnings).

6.3.1 Cost of procurement and time to procurement is found to be lesser when fleet is procured by private operator

It was found during stakeholders’ interactions that in the cases where public authority delegated the responsibility of procurement to private operators, the time taken to commence operations and cost of
procurement are lower as compared to the case when the procurement was done by public authority. Though detailed data is not available, some illustrations are provided about this finding.

**In Indore, AICTSL has started its city bus services in record 56 days by 15th Jan 2006 under PPP model after the formation of SPV on 1st Dec 2005.**

**In Ludhiana, the JNNURM fund is released for fleet procurement as early as Jan-2009 and the first delivery for 10 buses (one-fourth the fleet planned) happened in Dec 2011.**

**LEARNINGS:**
There are clear pros and cons to whether the authority purchases the fleet or whether the private operator does so.
A solution will need to be found that can best meet clearly identified objectives (such as on time delivery and good after sales service) with steps taken to reduce the downsides of the chosen option. Irrespective of which party procures the fleet, conditions precedent in the contract must clearly highlight the timeline by which fleet needs to be procured, and the consequences of delay in procurement w.r.t this timelines, hence minimizing losses due to delayed operations.
7. LENGTH OF CONTRACT

During review it was found that length of contract is important for both the private operators and public authorities in a number of ways, and divergent viewpoints have been observed. For private operators, length of contract impacts return on investment. However, as the return period is extended, the operational cost per km increases with the age of vehicles. Long term contracts also offer continued business for private operators which build their credentials for similar operations in other cities. From an operators viewpoint, there is no evidence that shorter contract provide better efficiencies as the attitude of contractors to building the business may deteriorate if they do not see themselves secure as a long term operator.

For the public authority, there appears to be a viewpoint that length of contract impacts the quality of service it can provide to the beneficiaries. On the one hand, longer contracts beyond a certain period are seen as using old and obsolete technology (and perhaps incumbent operators as complacent), shorter contracts provide an opportunity to test the market prices and renew the fleet and technology. Also there are costs to be incurred when operators are replaced, and there is a question of availability of private operators for short length contracts. Exhibit 7-1 shows the various viewpoints regarding length of contract.

Exhibit 7-1 Effects of length of contract on stakeholders

The major question is, however, that if the contract term is less than the asset life of a vehicle, would a new operator be willing to operate and maintain an old fleet? New contracts generally mandate a new fleet at the start of each contract. However, some overseas cities like Adelaide and Perth in Australia re-tender operations where the operator takes over the existing fleet (owned by the authority) but fleets tend to be of mixed age, so no operator is taking over an entirely old fleet and maintenance costs can be averaged out across the fleet.

With every contract, but especially longer term contracts, the question arises on how to continue to motivate operators to maintain high standards of performance and maintain the fleet at the end period of the contract, when the operator is contemplating closure. London gives a contract extension for operators that have exceeded performance benchmarks. A score for previous contract performance in the new bidding process is one such method, as is the refund of the performance bond if such a bond was applied at the outset of the contract. The exhibit below highlights the pros and cons pertaining to the period of the contract.
7.1 Length of contract in various cities

Cities have different contract periods as shown in Exhibit 7-3, ranging from 5 years to 10 years, but the reason for such wide variation is not clear. In all cities, it is found that length of contract is fixed depending on the life of fleet expected by the respective public authority.

Exhibit 7-3 Length of contract in various contracts

<table>
<thead>
<tr>
<th>City</th>
<th>Length (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santiago</td>
<td>10</td>
</tr>
<tr>
<td>Delhi</td>
<td>10</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>10</td>
</tr>
<tr>
<td>Bhopal</td>
<td>10</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>10</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>10</td>
</tr>
<tr>
<td>Jaipur</td>
<td>10</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>10</td>
</tr>
<tr>
<td>Pune</td>
<td>10</td>
</tr>
<tr>
<td>Ahmedabad City</td>
<td>8</td>
</tr>
<tr>
<td>Surat City</td>
<td>8</td>
</tr>
<tr>
<td>Adelaide</td>
<td>8</td>
</tr>
<tr>
<td>London</td>
<td>8</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>8</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>6</td>
</tr>
<tr>
<td>Indore City</td>
<td>6</td>
</tr>
</tbody>
</table>

It is expected that a uniform methodology could be found in determining the asset life of fleet, and hence determine an optimal contract term, but this is not the case. The ADB tool kit\textsuperscript{12} specifies the

\textsuperscript{12} Tool kit for PPP in Urban Transport for the state of Maharashtra, India – GoI - ADB
average age of fleet as 4 years based on the logic that operational cost increases after this. The average length of route contracts (generally used in India) as per World Bank Urban Bus Toolkit is 5 years\textsuperscript{13}, based on financial viability, assuming the fleet is procured by the private operator. However, this strongly depends on the standard of buses being used. Good quality buses would still be well within service level benchmarks at the end of 4 years, so scrapping such buses isn’t a good decision.

The length of contract should be guided by/synchronized with optimal service life of bus fleets in Indian conditions considering the demerits of contracts being shorter than bus fleet’s optimal service life, discussed elsewhere in the report. None of the cities under review have so far set out any vehicle life by carrying out an analytical analysis. However, a few other Indian cities such as Bangalore, Delhi, Mumbai, etc. have fixed scrapping age of their buses in the range of 8-10 years, after analysing impact of bus age on costs, amortization of capital costs etc. and the effect fleet age has on bus fleet productivity / performance. Length of contract may thus, be fixed at 8 years initially, extendable up to 10 years following performance review of the operator. Also, the length of contracts may be reviewed in subsequent contracts on the basis of in-house data generation, analysis and evaluation.

While attempting to give these guidelines, it is also important to consider three more aspects: 1) the source country of the bus, as experience shows that European buses have a longer service life than buses built-in emerging countries, with more keen price competition which tends to compromise on quality and longevity, 2) the quality of the maintenance during the life of the fleet, as some business cultures do not regard maintenance of fleet sufficiently, and will cut maintenance cost to exploit greater profitability thereby causing greater bus depreciation and 3) Decision-makers are not cognitive of better fleet quality and vehicle longevity (with proper maintenance) of today’s modern machinery, and still use old technology as a reference point (for example: European buses at a cost close to $300k should be expected to perform for 10 years, still be in presentable condition and available for full service every day and reach 1 million km).

This may explain the discrepancy between cities of expected fleet age and contract length.

\textbf{7.1.1 Contract extensions could be useful to incentivize performance especially at the end of a contract}

The existing contracts have different extension provisions, with the length and the basis for extension varying across the cities as shown in Exhibit 7-4.

\begin{table}[ht]
\centering
\begin{tabular}{|l|c|l|}
\hline
City & Extension Period (in years) & Basis of Extension \\
\hline
Ludhiana & 0 & NA \\
Bhopal & 2 & Mutual Agreement \\
Ahmedabad BRTS & 0 & NA \\
Surat BRTS & 1 & Mutual Agreement \\
Jaipur & 1 & Performance \\
Bhubaneswar & 1 & Mutual Agreement \\
Pune & 3 & Performance \\
Ahmedabad City & 0 & NA \\
Surat City & 1 & Discretion of Authority \\
Jalandhar & 0 & NA \\
Indore BRTS & 3 & Performance \\
Indore city & 2 & Performance \\
\hline
\end{tabular}
\caption{Extension terms in contracts under review}
\end{table}

While some contracts do not have any provision for extension, many cities provide for contract extension for a period of 1-3 years. Contracts of Bhopal, Surat BRTS and Bhubaneswar have “mutual agreement” as a basis for extension, whereas contracts of Jaipur, Pune and Indore use “performance”

as a basis for granting a contract extension, although the method of measurement of performance is not found in any of these contracts. Surat city bus contract provides for extension at the discretion of authority.

Several private operators opined that there should be incentives for operators to perform in the long run. They agree that if existing contract performance is held as a scoring consideration in the next round of tenders, they will have greater motivation to perform and avoid the temptation to be short term profit-makers. However, another viewpoint is that very long contracts might attract fewer private bidders and may result in the emergence of an oligopolistic situation.

### 7.1.2 Contracts do not cater well to transfer of fleet at the end of contract

Contract clauses relating to transfer of fleet are only relevant when the public authority owns the fleet. It is generally held that bus operators will only look after the vehicles if ownership is transferred to them, as there is a greater sense of ownership and operators will hope for greater residual value on contract closure.

If the authority retains ownership of the fleet, alternative incentives must be adopted to ensure that fleet condition is maintained. The Indore BRTS contract has an incentive in the fleet exit strategy, which states that the proceeds from sale of the fleet will be shared by the public authority and private operator. The contract of Ludhiana makes it compulsory for the operator to buy all the fleet at a nominal Rs.1000 per bus. The contract of Jaipur requires the operator to maintain predefined fuel efficiency towards the end of contract for measuring the performance. As the fleet is procured for operations during the length of contract, it is found that clauses are required for providing incentive to operator post contract expiry for assured maintenance during the term of contract.

---

**LEARNINGS:**

It appears to be erroneous to believe at face value that shorter contracts will provide better quality service. A detailed study of the multiple factors that contribute to a contract term, combined with an analysis on quality should be undertaken in each case.

The ideal duration of a contract is indeterminate but needs to consider a period long enough for the operator to recover the investment costs and make a fair return, and also to provide service consistency in the bus operations. Changing an operator too often or necessarily (i.e. without gaining clear benefits) can be disruptive and incur unnecessary costs. But too long a contract can make the contractor complacent in performance. Where contracts are shorter, operators may not see value or be willing to invest for long term gains, especially if they contribute to service planning. The investment made by the private operators in the form of provision of depots etc. is a crucial factor, in that if an operator provides a depot facility (at huge investment), it will expect a contract term worthy of such an investment.

Thus, contract length is not something that can just be defined arbitrarily, but must be designed based on a detailed financial analysis, especially when a PPP alternative is considered. The financial contribution and investment by private operators need to be worked out and a payback period should be estimated to understand the minimum contract period that would enable the operators to recover their investments.

Vehicle asset life also has a major influence on contract life and a better and more informed basis of reasoning needs to be developed on understanding fleet age and performance. Factors like manufacturing quality, fleet maintenance practices and industry norms must be taken into account.

Another important learning is that quality can improve when the operator’s business case is improved. Sustainable and rewarding business model will develop a more substantial and capable operator. Expectations of contract extension or a score that contributes to future business opportunities is a major incentive for good performance for the full contract term. This is to mutual benefit of all parties: the operator, the authority and the customer.
8. PERFORMANCE MONITORING

The performance monitoring frameworks have been reviewed in the various contracts. Performance monitoring is important for the public authority to ensure quality service from the private operator. This chapter is divided into two parts, being 1) findings about indicators, choice of indicators, coverage of indicators etc. and 2) the methodologies found in the contract for performance monitoring. It includes review on the method of measurement, quantitative calculation of penalty or rewards, existence of exemption clauses etc.

The scope of the monitoring framework is shown in Exhibit 8-1.

Exhibit 8-1 Monitoring framework in contract

8.1 Performance Monitoring Indicators in existing contracts

Various indicators are found in the existing contracts with each contract exhibiting a strong emphasis in selected areas but very few cities were found to comprehensively cover all the indicators required for monitoring the entire delivery of services. Exhibit 8-2 shows the scope of monitoring indicators that could be expected in a contract.

Exhibit 8-2 Classification of monitoring indicators for analysis

For the purpose of our analysis, certain key areas have been identified relating to private operator service delivery. These include:

- The behaviour of staff employed by the operators, as this reflects on the image of the City bus services in the public.
Monitoring the condition of fleet to ensure comfortable travel for passengers
- Mandatory documents, which operator needs to keep ready for verification, such as proof of periodic servicing; roadworthiness and safety checks.
- Safety and operational indicators for the way trips are carried out on the routes by operators.
- Service-related indicators to measure customer satisfaction and end-user opinions.
- Monitoring of equipment maintenance.

### 8.1.1 The coverage of indicators is limited in most of the existing contracts

As stated earlier, contracts are weak at covering all performance indicators. Exhibit 8-3 shows the extent to which each contract addresses the indicators in each class and shows overall performance of each contract.

#### Exhibit 8-3 Coverage of monitoring indicators in various contracts

<table>
<thead>
<tr>
<th></th>
<th>Ahmedabad</th>
<th>Ahmedabad City</th>
<th>Bhopal</th>
<th>Bhubaneswar</th>
<th>Delhi</th>
<th>Indore IRRTS</th>
<th>Indore City</th>
<th>Indore</th>
<th>Jaipur</th>
<th>Jalandhar</th>
<th>Ludhiana</th>
<th>Pune</th>
<th>Surat IRRTS</th>
<th>Surat City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet conditions during Operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandatory Documents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety and Operational Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- strong
- weak

#### 8.1.2 Very few contracts classify performance indicators on the basis of level of impact

Though different penalties are imposed for different defaults, a classification of the indicators based on the impact of default has not been found in most contracts. Obviously infractions that pose a greater risk to the system must be more heavily penalised. Giving infractions a risk weightage and a commensurate level of penalty would motivate operators to avoid these harsher penalties. It also makes the penalty system fairer and more transparent.

*The monitoring framework of Delhi has classified the defaults / infractions into six categories. Each class of infraction has a penalty level and time to resolve that infraction. Such detailed classification of indicators based on the impact is found to help operators identify the infractions with greater penalties and avoid them.*

#### 8.1.3 A time period for fault rectification is not mentioned in most contracts

It has also been found that authorities are penalising the private operators without understanding the reason for defaults. Several stakeholders suggest that monitoring framework should be aimed at ensuring quality of service from operator, rather than just penalizing the operator. When a default is observed, very few contracts provide cure period for operator to rectify the default.
8.1.4 Criteria for selection of drivers are vaguely defined in many contracts

Front line staff members such as drivers and conductors are essential part of the system and their customer service and behaviour are instrumental in building trust, and dependency on the transport system. It also reflects on the brand image of the service, and the perception of safety. Courteous and professional behaviour amongst front line staff is therefore paramount.

The study has reviewed contract clauses on the selection criteria of hiring drivers and the procedures for monitoring their behaviour. It is noted that very few cities have covered the related contractual provisions comprehensively. Exhibit 8-4 shows how contracts specify driver selection criteria.

Exhibit 8-4 Criteria for selection of drivers

<table>
<thead>
<tr>
<th>City</th>
<th>Criteria for Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>Trained, Healthy, Proper behaviour, Speed control, Motivational and Skill Development training by Public Authority</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Training, re-training, skill development, Acceptance certificate from AJL for test on knowledge, skills</td>
</tr>
<tr>
<td>Bhopal</td>
<td>Training</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>Training</td>
</tr>
<tr>
<td>Delhi</td>
<td>Academic Qualification, HTV driving license, PSV badge, medical fitness, trained to operate on board equipment, Compliance with MVA -1998 and DMVR-1993</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>Training</td>
</tr>
<tr>
<td>Indore City</td>
<td>Nothing mentioned</td>
</tr>
<tr>
<td>Jaipur</td>
<td>Training</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>Well-behaved, medically fit and trained, intolerance of unacceptable behaviour</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>Same as Ahmedabad</td>
</tr>
<tr>
<td>Pune</td>
<td>less than 58 years, no criminal record or fatal accident record, training, medical examination</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>Training</td>
</tr>
<tr>
<td>Surat City</td>
<td>Nothing mentioned</td>
</tr>
</tbody>
</table>

A few contracts like Pune and Ahmedabad include detailed criteria for selection of drivers. There is an “Acceptance Certificate” to be obtained before induction into the Ahmedabad city bus system. The other contracts have just mentioned that operator needs to provide training, without specifying the nature of training. Even though the contract of Pune had good clauses pertaining to selection of drivers, the implementation was not evident on the ground. While one reason could be difficulty in finding the drivers with required qualifications, another reason could be the lack of proper enforcement by the public authority on private operators to hire drivers with necessary qualifications. Proper clauses mandating age, qualifications, education, experience training, clean criminal record, good health, etc. are required to be covered in the contract.

Stakeholder discussions have indicated that operators face difficulty in finding drivers meeting stringent selection criteria, especially in smaller cities.

8.1.5 Contracts should include on-going performance monitoring of driver performance

Operators are faced with the dilemma that they are responsible for meeting performance benchmarks, but the means of achieving this lies with the front-line staff, especially bus drivers. It can be left up to the bus operators (employers) to work out how to transfer the responsibility to their staff, or the contract can include a methodology for constant and regular driver performance reviews as well as a record of disciplinary action for each driver/conductor. This not only specifies to the operator ‘what to do’ but also allows the authority to monitor the way the operator manages employee performance.

A sound employment policy that employs good staff and maintains a contented workforce is the best way to ensure good staff performance, but a methodology to motivate good behaviour and discourage bad behaviour is also essential. Later in this report, the Santiago experience demonstrates that contract conditions motivated bad behaviour resulting in disastrous outcomes for the city.

Building on incentives for good performance is what Ahmedabad and Delhi did, as described below:

**Ahmedabad City bus service (AMTS) has come up with a unique way to motivate drivers.**
Public authority is incentivizing the drivers for a benchmark performance by paying a little bonus apart from operators’ salaries to drivers. Though it is not included in the contract, it is implemented by public authority officials to motivate the drivers. The criterion for bonus is the revenue collected per trip driven by each driver. Here drivers have an incentive to behave well with public and attract more ridership as their bonus is linked to the revenue collected. Such systems may be included in the contract also.

Delhi cluster contract has included a detailed Annexure about roles and responsibilities of drivers and conductors. It also mentions detailed criteria for their eligibility to operate the vehicles. This contract also includes an annexure with a detailed pro-forma where public authority employs a third party agency to assess driving quality.

8.1.6 Safety assurance terms

The current contracts have included safety assurance terms in the performance monitoring frameworks. The coverage of various indicators is shown in the below exhibit:

**Exhibit 8-5 Safety and Operational Conditions**

<table>
<thead>
<tr>
<th>Safety and Operational conditions</th>
<th>Jalandhar</th>
<th>Ludhiana</th>
<th>Ahmedabad City</th>
<th>Ahmedabad BRTS</th>
<th>Indore BRTS</th>
<th>Indore City</th>
<th>Bhopal</th>
<th>Surat BRTS</th>
<th>Surat City</th>
<th>Delhi</th>
<th>Jaipur</th>
<th>Bhubaneswar</th>
<th>Pune</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal of Buses during Operating Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cause Damage to Fixed Infra like Bus stops, Street lights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unauthorized Driver</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exceeding Speed limit</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accidents</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fix bus breakdown in two hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus breakdown outside the BRT lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus breakdown in the BRT lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Parking at Depot</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incomplete trips</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Technically Deficient Buses</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While the indicators cover penalties for compromising on safety, a methodology for motivating safe behaviour or preventing unsafe behaviour can be built into the contracts. For example, motivations sessions for staff on safety can be provided. While none of the contracts reviewed so far reflect on such sessions in detail, they may be considered supplementing the existing indicators in the monitoring frameworks.

8.2 Methodology for performance monitoring

Though most of the contracts have a detailed list of indicators, the mechanism for measurement of these indicators is not well covered in the contracts. Better transparency and trust in the system is created when there is an agreement on method of measurement, and subsequent calculation of performance. Study findings are presented as follows:

8.2.1 Mechanism for measurement is not found in many contracts

The methodology for measurement of each indicator is not found in many contracts, lacking a detailed reporting pro-forma for various kinds of indicators, which could bring greater transparency to the decision to levy a penalty on an operator.

The Delhi cluster contract has covered this, outlining a detailed driver quality monitoring procedure in which the pro-forma on which a driver would be rated and how anonymous monitoring would be carried out is specified.
8.2.2 Calculation of penalty and reward is found in very few contracts

The formulae for calculation of penalty and rewards are not detailed in many contracts. A quantitative score allocation to each indicator and calculation of overall performance is not found in most of the contracts. Contracts tend towards penalty mechanisms, and rewards for meeting or exceeding benchmark performance are not included.

8.2.3 Penalty mechanism does not lead to proper resolution, since it does not allow for operator’s explanation to defaults

Penalty mechanisms in existing contracts do not provide for operators to explain or challenge defaults. First, the operators are envisaged to pay the penalty, and then raise their objection to penalties. If public authority finds that the penalty is not justifiable, they can reimburse the penalty after thorough enquiry, which rarely happens in reality. However, any reimbursement of penalty may be fraught with reputation risk of the authority levying and/or pardoning penalty. A time frame for final decision about charging penalty may be fixed in any contract giving due opportunity to operator for his defence against such penalty. For the convenience of operators still not satisfied with the decision of the authority, a separate clause facilitating recourse to grievance redressal mechanism may be included in the contract.

Due to lack of ITS based monitoring, operators in some cities complained that they do not have a way to check the penalties imposed on them. Many operators held the view that a time frame for providing investigation of public authority into private operator’s explanations could be included in the contracts.

8.2.4 Exemption clauses are rarely found in the contracts

Operators complain of scenario where defaults can occur for reasons beyond their control, such as a bus may run late due to an accident on the route. So, in the context of such unforeseen incidents, a mechanism or exemption clause can be included in the contract. Delhi uses a ‘non-deductible kilometres’ clause under its Annexure for the causes beyond the scope of operators. More contracts need to include such exemptions.

8.3 Key parameters to be monitored to gauge operator performance

In order to monitor performance of operators, quantifiable and qualitative parameters need to be identified and defined for the following category:

- Service quality – accessibility, adequacy, affordability, efficiency, reliability, regularly, safety, etc.
- Physical – productivity of rolling stock, capacity utilisation, fuel efficiency, MTBF of aggregates, etc.
- Financial – costs and revenue per passenger km, per passenger, per bus km, per bus daily;
- Benchmarking – performance parameters based on past performance and or with respect to peer PT agencies;
- Monitoring – delivery of performance w.r.t. bench marked levels, assessment of deviations if any
- Defaults, and their treatment – setting out punitive actions for quantifiable defaults – discretionary defaults cause disputes and need to be avoided.
- Data acquisition compilation, analysis evaluation, report generation, monitoring and control

LEARNINGS:

There needs to be an improved methodology for performance monitoring in contract management with better mechanism for measurement, better technology applied (IT) and a penalty system that operates in a fair and just manner, remembering the objective is to improve performance and quality. There should be no case where operators are penalised for events that are beyond their control. Performance penalties in contracts must be weighted according to severity. Obviously infractions that pose a greater risk to the system must be more heavily penalised. A risk weightage framework will support the justification of penalties.

Operators must have the opportunity to defend against penalties, with the overarching aim to improve performance and not just penalise operators. The period for rectification (as well as compulsory action where needed) must be specified in the contract.
Drivers are the key frontline personnel, and the contract should specify driver’s selection criteria as well as a mechanism to monitor the way the company reviews on-going driver performance – such as incident/accident follow-up. A methodology to transfer the contract performance-benchmarks to driver procedures and training would be very useful.

In addition to existing penalty mechanisms, innovative mechanisms can be put to use, which incentivize operators to adhere to performance standards and minimize attracting penalties. For example, a multi-operator system can have a mechanism to monitor the performance of the operators and periodically distribute a reward to the best operators (the reward can be a portion of the penalties charged during the period by all operators). This would force the operators to compete among themselves in a healthy way to be the best operator.
9. CONTRACT TERMINATION AND ARBITRATION

In this chapter, contract termination and arbitration clauses have been reviewed. It is found that these clauses potentially impact both the parties and can bring the entire bus system to a halt. Transition procedures from various contracts are analysed so that services are not interrupted and there isn’t unjustified losses during termination.

9.1 Transition mechanism

9.1.1 Transition mechanism is not found in many of the existing contracts

At the termination of a contract, it is important to have transition arrangements in place, and these need to be outlined in the contract from the outset. This is of particular importance if private operators own the fleet. However, only few cities such as Bhopal, Bhubaneswar and Surat have provided a transition clause for city bus operations.

Clause 16.4 (i) (a) of Bhopal Contract:

In the event of termination of the Bus Operators Agreement, in the event that BCLL so desires, in the interest of keeping the Bus Services provided by Operator running during their transition to BCLL, the Operator and BCLL will meet no later than once every fortnight to evolve and activate a transition plan to run the Bus Services. This arrangement will continue for a period of no longer than 180 days after the termination by BCLL.

9.1.2 Transfer of fleet ownership during termination is not defined in many contracts

Whenever the fleet is owned by a private player, particular attention is needed for the protocols in contract closure. The contracts in which private players own the fleet are Ahmedabad City (AMTS), Ahmedabad BRTS, Indore City, Jalandhar, Pune, Surat BRTS, and Surat City. While some of the contracts do not have clauses defined for the fleet transfer in extreme cases, other contracts have well defined provisions for transfer of movable assets to public authority. However, the cost at which public authority would procure the fleet is not found in the contract.

In case the fleet is procured by the authority, then on termination or after completion of contract period, the fleet is handed back to the authority. However if the fleet is procured by the operator, there should be a formula for buy-back which would be decided at the outset of the contract leaving no scope for ambiguity at a later point. The buy-back could be contingent on age of bus i.e., authority would have right but no obligation if buses are over a certain age and an obligation only if buses are below a certain age. The cut-off age would also be decided at outset of the contract.

Ahmedabad Janmarg Clause 12.3:

Upon termination, Janmarg would take over the entire infrastructure developed by Service Provider for the BRTS project or any part thereof and / or Negotiate with Service provider to transfer the said infrastructure or part thereof to a replacement Service Provider selected by Janmarg, at Janmarg’s sole discretion

9.1.3 Transition of soft assets is not defined in most contracts

Soft assets include tangible assets such as human resources as well as intangible assets like knowledge, skills and expertise. Transition also impacts personnel who are a part of the system, including supervisors, drivers, conductors, maintenance workers, administrative staff etc. These people who have worked to provide the public transport service for the entire contract period may find themselves without a job. They may have little choice but to accept lower pay and conditions set by the incoming operator, if the contract was won primarily on low price. It is therefore advisable to include conditions for transition of personnel in the event of contract termination. It must be specified that at no time during the contract, employees will be paid less than government mandated wage rates and the actual compensation of these employees shall be fixed based on the prevailing market conditions and trends.

If the staff are released at the end of the contract period and do not migrate to the incoming operator, a large amount of experience and know-how is lost which could take some years to rebuild. Data and
knowledge are also assets that must be considered at transition, but currently lack coverage in the contracts reviewed. If expertise resides primarily with the operator and not with the city (either because the contract did not require it, or the city did not enforce its rights under the contract), then it is highly likely that little or no useful data will be transferred upon contract termination.

9.2 Mitigation of termination losses

9.2.1 Mitigation of losses due to Authority’s default / Force Majeure is not found in many contracts

If an operator is envisaged to invest to procure fleet and if the contract gets terminated on account of Authority’s default or force majeure, the operators incur heavy losses. In the case of BRTS, the buses that are procured for a particular design of a city can be operated only in the respective city. It is therefore imperative to safeguard investments of an operator.

To illustrate, Ahmedabad Janmarg limited has given the following provisions in such events as shown below:

Ahmedabad Janmarg Clause 12.4 c:

Transfer of the Bus Services of the Service Provider to a similar system of Bus Service operating under the jurisdiction of Ahmedabad Municipal Corporation.

In an event such a transfer is NOT possible or cannot be carried out for some reason, Janmarg may, at its own discretion, consider buyout of the rolling stock of Buses of the Bus provider.

There can be a provision of buy-back commitment on the behalf of the Authority in case the operator assumes substantial risk. For example, when Copenhagen wished to implement double-deck buses under 5-year contracts, operators were understandably worried that if they failed to win the contract renewal – or if the city decided not to continue with such buses – they would be stuck with buses that had at least 7 years of remaining life but no possibility for use anywhere else in Denmark or even in neighbouring countries. The city authority undertook to buy back the buses at a fair residual price in any such event.

In Melbourne, an exit value calculated in accordance with a formula that takes into account break costs or other reasonable and verifiable costs. In Bogota, in case of early termination, the authority may have to assume the liabilities of the operator.

9.3 Dispute resolution mechanisms

Most of the contracts reviewed do not detail out the exact procedure to be followed in case a dispute arises. The contracts simple state that both parties will appoint a representative, who will meet to resolve the dispute amicably through negotiation.

Jalandhar Contract Clause 12.3.1:

“In the event that any dispute, controversy or claim arises among the Parties in connection with or under this Agreement or the interpretation of any of its provisions or upon the occurrence of an Event of Default, the Company and the Operator shall appoint one representative each, who is not involved in the day-to-day operations relating to the Project to meet promptly in an effort to resolve such dispute, controversy or claim. All such disputes shall be amicably settled through mutual consultation and negotiation between the representatives. Each Party shall bear all the expenses of its representative. The Parties hereto agree to use their respective best efforts to resolve all disputes arising hereunder through the consultative process.”


9.4 Arbitration provisions

9.4.1 Arbitration Mechanism is mostly one sided in many contracts

In the event of dispute, many contracts are found to be one–sided in terms of resolution procedure. Instead of arbitrators being appointed by both the parties, most of the contracts leave the discretion of final decision with public officials. A summary of provisions in various contracts is tabulated as follows:

Exhibit 9-1 Provisions for balance arbitration under various contracts

<table>
<thead>
<tr>
<th>Cities</th>
<th>Balanced Arbitration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>At the discretion of Dy. Municipal Corporation and Transport Manager, AMTS</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>Yes</td>
</tr>
<tr>
<td>Bhopal</td>
<td>At the discretion of Commissioner, Directorate, UD &amp; A, GoMP</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>At the discretion of HUDD, GoO</td>
</tr>
<tr>
<td>Delhi</td>
<td>Yes</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>Yes</td>
</tr>
<tr>
<td>Indore City</td>
<td>Not Mentioned</td>
</tr>
<tr>
<td>Jaipur</td>
<td>At the discretion of Commissioner, Directorate, UD &amp; A, GoMP</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>At the discretion of Admin Secy, ULB, GoP</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>Yes</td>
</tr>
<tr>
<td>Pune</td>
<td>At the discretion of Sole Arbitrator appointed by CMD PMPML</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>At the discretion of Commissioner, Directorate, UD &amp; A, GoG</td>
</tr>
<tr>
<td>Surat City</td>
<td>At the discretion of Commissioner/ Standing Committee or Court</td>
</tr>
</tbody>
</table>

LEARNINGS:

Proper arrangements and protocols for the transfer or sale of the fleet must be stipulated in the contract from the outset.

Resolving conflicts throughout the contract period needs to be done in such a way that mutually satisfying resolutions can be found, with due respect by each party that the authority needs to safeguard the public interest, and respecting the operators right to conduct a commercial business.

An attitude of partnership rather than an adversarial relationship will serve both parties well. The contract terms and conditions will define the contract relationship, its performance and the outcomes.
10. REVENUE AND COSTS

In this chapter, the financial aspects of a city bus system from the contract perspective are analysed. The findings on revenue models and the factors that increase the costs for various stakeholders under each model are presented, and a review of various clauses regarding the payment mechanisms is presented.

As mentioned earlier, either GCC or NCC are currently being used for city bus private operations in India, and each model offers its own set of problems. The two models are presented separately and problems segregated accordingly.

10.1 Gross Cost Model

It is found that GCC models attract large private player participation and are effective in obtaining quality service from the private operators. In the words of a senior transport official at Ahmedabad, "Gross cost models itself give the authority the ability to demand quality service from the private operator"; making the valid point that when the authority takes risk, it also takes a greater level of control. This revenue model is promoted as removing private operators from revenue risk, but can the authority itself manage this risk?

10.1.1 Public Authorities consider Gross cost models to be high cost models

Most of the public authorities consider GCC to be more costly than NCC. This is evident as the authority incurs the full cost of operation and the cost of planning the services and managing the contract, which may only be partly reimbursed by fare revenue. It is also easy for them to confuse ‘costs’ and ‘losses’; where costs are the per km costs (and these must be paid by someone in any event) and the accumulated losses are where a subsidy support may be required.

Unit costs may vary across different city contracts. If it were the case that unit cost are indeed higher, then it means that competitive tendering process has not delivered an efficient price of operation for the authority. The ‘operational losses’ burden may be due to a fleet’s low operational efficiencies (say, caused by traffic congestion), which leads to high cost of operation. Under a NCC (without subsidy), the authority would not be aware of this rise in cost as it is insulated from this risk.

During the review, some officials representing the authority considered that retendering could produce more competitive pricing. This view assumes the price they have is not seen as competitive, which leads to the earlier question as to why the earlier tendering process did not deliver an efficient price in the first place. Hensher & Wallis (2005) argue that the cost savings are dependent on the design and management of tendering process and whether or not a strong market of potential bidders existed. This can be seen from Adelaide’s competitive tendering experience, where the initial tendering offered 19-38% saving in unit cost per bus kilometre of providing services. However later retendering hasn’t produced significant cost efficiency and quality enhancement.

India’s Delhi Blue Line experience also shows that managing too many small players is difficult for the authority, and changing operators often under short contract terms may be counterproductive.

10.1.2 Lack of financial capacity of Public Authority to run Gross Cost model may lead to its failure

The capacity of public authority to bear the financial fluctuations in gross cost model and making timely payment to operator is an important factor. In Ludhiana, bus services came to a halt due to non-payment by authority to private operator.

---


The review found that many of the contracts do not have clauses safeguarding operators if payments are delayed, which may appear to favour the authority, but could potentially interrupt services. Though rare, but some cities like Surat have created an escrow account to meet funding requirements. Surat arranges funding for public transport from sources such as imposition of premiums on property tax and private vehicle registrations etc. JnNURM funds, while mainly used to procure fleet, may also be utilized in part, to meet operational deficits.

10.2 Net Cost Model

The Net Cost model is favoured by Authorities as it is seen as requiring little funding support. Indore City bus service set up NCC operation in 2006 with a paid up capital of just Rs. 50 lakhs. Though NCC models do not need much capital infusion, it is found that public authorities continuously need to facilitate viable environment and safeguard operator’s interests so that quality services are made available to public at large. The findings in our various stakeholder interactions are presented in the following sections:

10.2.1 Service planning is done by Public Authority without consultation with NCC operators in most contracts

The bus service plan (routes and the frequency) is a major factor in the viability of the bus operator. As private operators under NCC carry business risk, and are profit motivated, they tend to neglect unviable routes. Cities can resolve this by bundling into contract packages both profitable and less profitable routes. Jalandhar is presently planning a ring route plan covering the whole city using contract clusters, aimed to ensure that the aggregate contract is viable.

Further, the authority can set minimum service frequencies to be maintained even during off-peak periods. This would entail constant monitoring as the operator may try to minimize risk and reduce services to avoid losses on this account. In Surat, the previous city bus operator allegedly manipulated operating data, making monitoring difficult, with severe and adverse impacts on quality of service.

Stakeholder consultations found that operators were in favour of the contract being more flexible and wished to be consulted by public authority during service planning. They also consider it necessary to have clauses in the contract that safeguard the promised routes. These clauses would protect the operator from any potential adverse effects because of decisions made by the public authority.

Another issue pertains to the unanticipated competition from other bus operators. In order to attract operators into the business, authorities often grant exclusive areas where an operator takes business risk but in return is ensured sufficient ridership that is not eroded by competing bus operators. It can be seen as a fair trade-off to assure the operator ridership (revenue) and in return oblige the operator to provide and maintain overall levels of services, especially in the off-peak times.

The study found exclusivity to be a contentious issue, for a number of reasons:

1. Some argue that it creates a monopoly, where an operator with a captive market can exploit their advantage with poor quality of service. They argue that healthy competition improves efficiency. On the other hand, travel demand and service requirements change with time, and the authority may find itself restricted from opening new services even where these are not extractive from the contracted operator

2. Competition from IPTs is also an issue. Operators in Jalandhar, Surat and Bhopal have complained over competition from unauthorized auto rickshaws. Surat caps permits per year for auto-rickshaws, Bhopal promises exclusivity of route in the contract; Jalandhar bans auto rickshaws; but these measures are not implemented in practice. Some of their competitors (such as auto rickshaws in Surat) become prolific due to failure of public transport in past.

3. Exclusivity is also not necessarily easy to implement, as a bus network often has parallel routes on main corridors. The authorities need to manage this complexity to ensure workable outcomes.
LEARNINGS:  
Net cost contracts should not be a device simply for authorities to simply unload the responsibility for public transport on the operator. Doing so, and causing the operator bear undue business risk and losses, will simply cause poor transport outcomes which in the end, reflects badly in the authority and the city. Net cost contracts can however be used as a mechanism to stimulate improved operator performance, as operators taking revenue risk are motivated to win passengers, and operate efficient services. This can only happen when the operating conditions are favourable, meaning that the operator has a good chance to build a profitable business, be able to manage the risks they carry, and in turn provide a substantial level of service. This illustrates that contract models should not just be categorized into just GCC or NCC, but that within each models numerous mechanisms need to be devised to secure good behaviour, risk mitigation and control, so that the expected transport outcomes are delivered.

NCC under exclusive area contracts protect ridership and revenue, which in turn can compensate for providing some non-commercial services. Exclusivity also carries with it some obligation to maintain good service levels in return for this monopoly provision.

10.2.2 Lack of infrastructure like bus shelters is leading to loss in ridership for Net cost operators

One of the most notable failures of NCC is that as the city carries little risk in bus operation, they have little incentive to provide the necessary bus infrastructure for operator efficiency (bus lanes) and passenger facilities to make bus travel more convenient (bus stops/ signage/ information etc.). This neglect can have large impacts on ridership and consequently operator revenue.

Many contracts contain the obligation on the public authority to provide these facilities, but there lacks incentive for authorities to fulfil their responsibility.

LEARNINGS:
Contracts should be designed so that the obligations on the authority carry the same weight as the obligations of the operator. This can be difficult, but can be achieved by, for example a gross cost contract where monetary risk is carried by the authority, so they have incentive to engage in mitigating those risks. Alternatively operators could sue the authority for not upholding their obligations, although in practice this would most likely not occur; given the unequal relationship, operators would find this counterproductive. This highlights a very important fact: For contracts to work effectively in producing good transport outcomes, they need to establish a partnership between authority and operator toward mutually satisfying objectives. The contract is in fact, and should be regarded as a ‘partnership document’ that outlines clear objectives (see Adelaide experience later in this report) and defines roles, responsibilities and risks of each party in achieving these goals.

10.2.3 Finding Operators in Net Cost Model is becoming a challenge

The above discussion on the unequal sharing of risk under NCC (where the majority of unmanageable risk is carried by the operator) leads directly to the problem cities currently face, the lack of operators willing to work under a NCC model. In Surat, the tender for bus operations under NCC was floated six times. In pre-bid meetings, the major concern was authorities become devoid of any responsibilities after they contract services under a NCC so operators were not willing to take all the risks. In Indore, the bankruptcy of an operator was attributed to unmanaged risk under NCC.

10.3 Advertising revenue is not divided in proportion with the revenue risk taken in some contracts

Advertisement revenue is an important alternate source of revenue for the city bus systems. Generally, the party bearing revenue risk keeps the major share of advertising revenue. However, a uniform and logical ratio for sharing of advertising revenue has not been found in the contracts reviewed. Exhibit 10-1 and 10-2 show the division, noting that the GCC contracts are where the authority (SPV) takes the revenue risk.
Exhibit 10-1 Division of advertising revenue under various GCC contracts

<table>
<thead>
<tr>
<th>Models with GCC</th>
<th>% Private operator’s share</th>
<th>Advertisement Rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>0%</td>
<td>SPV</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>20%</td>
<td>SPV</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>20% for inside buses only</td>
<td>SPV</td>
</tr>
<tr>
<td>Jaipur</td>
<td>Not mentioned</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>100%</td>
<td>Operator</td>
</tr>
<tr>
<td>Pune</td>
<td>0%</td>
<td>SPV</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>10%</td>
<td>SPV</td>
</tr>
</tbody>
</table>

Exhibit 10-2 Division of advertising revenue under various NCC contracts

<table>
<thead>
<tr>
<th>Model under NCC</th>
<th>Advertising Revenue</th>
<th>Advertising Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhopal</td>
<td>50%</td>
<td>SPV</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>80%</td>
<td>Operator</td>
</tr>
<tr>
<td>Indore City</td>
<td>60%</td>
<td>SPV</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>Not mentioned</td>
<td>SPV</td>
</tr>
<tr>
<td>Surat City</td>
<td>100%</td>
<td>Operator</td>
</tr>
</tbody>
</table>

As it can be seen above, 100% of revenue rights on advertisements are with private operator in Ludhiana even though revenue risk is with public authority. Alternatively, only 50% of revenue is shared in Bhopal while there is no mention in the contract of Jalandhar for operators even though they operate under net cost model.

10.4 Payment Procedures in both GCC and NCC models

Payment mechanisms in each contract are reviewed. In GCC models each contract is found to have its own time frames and formulae for payments made to the operator. In NCC models each contract has its own time frames and fare revision formulae.

10.4.1 Payment Mechanisms found in GCC Models

Each contract has different windows of “payment period” and “time for payment after submission to public authority”. There are different formulae for revising the premium paid to operator. While minimum assured kilometres of 72,000 km per bus per year applies in all the cases, the formula for payment in case of undershooting / overshooting the operating kilometres is different in each contract.

PAYMENT PERIOD

The payment period and realization period act in tandem to impact the working capital cycle for the operators under GCC. Payment period is the minimum number of days for which payment is made. Realisation period is the number of days within which payment is processed after an invoice is raised. Ahmedabad city bus and Ludhiana contracts require operators to maintain a working capital of one month while other systems do not have such a clause. The ground level impacts and the reason for various timeframes are not clear.

Exhibit 10-3 Payment terms from public authority to private operator in various GCC contracts

<table>
<thead>
<tr>
<th>Cities</th>
<th>Payment period (in days)</th>
<th>Realization Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Jaipur</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Pune</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

REVISION OF PREMIUM

The revision of premium (price index for payments to the operator) is found to be linked to fuel prices on monthly basis and WPI on yearly basis. However, in some contracts the linkage to WPI or inflation is absent. The rationale for weights given to each component is not clear. Summary of the findings under study is as follows.
Exhibit 10-4 Revision terms for premium paid to operators in various GCC contracts

<table>
<thead>
<tr>
<th>Cities</th>
<th>Inflation linked formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>30% of the percentage fuel price change (on occurrence) + 45% of 5% increase per year + remaining fixed</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>35% quarterly fuel + WPI annually (1.2 times of 65%)</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>35% monthly fuel +65% yearly WPI</td>
</tr>
<tr>
<td>Jaipur</td>
<td>fixed revised by 5% every year + variable revision not clear</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>50% fuel monthly + 50% WPI</td>
</tr>
<tr>
<td>Pune</td>
<td>4.5% for five years and 6% for next five years</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>35% quarterly fuel + WPI annually (1.2 times of 40%)</td>
</tr>
</tbody>
</table>

Payments in case of Undershooting / Overshooting Minimum Assured Kilometres

There is a difference in the percentage of amount paid in different contracts. The reason for these formulae was not very clearly found during our review. A summary of the values can be shown as follows.

Exhibit 10-5 Payment terms for overshot / undershot operating kilometres

<table>
<thead>
<tr>
<th>Cities</th>
<th>Undershoot</th>
<th>Overshoot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad City</td>
<td>0.3(Tm - Ta)</td>
<td>0.45(Rex)</td>
</tr>
<tr>
<td>Ahmedabad BRTS</td>
<td>0.65(Tm - Ta)</td>
<td>0.85(Rex)</td>
</tr>
<tr>
<td>Indore BRTS</td>
<td>0.65(Tm - Ta)</td>
<td>0.75(Rex)</td>
</tr>
<tr>
<td>Jaipur</td>
<td>0.65(Tm - Ta)</td>
<td>0.80(Rex)</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>0.15(Tm - Ta)</td>
<td>0.85(Rex)</td>
</tr>
<tr>
<td>Pune</td>
<td>Not clear</td>
<td>0.85 Rex</td>
</tr>
<tr>
<td>Surat BRTS</td>
<td>0.65(Tm - Ta)</td>
<td>0.85(Rex)</td>
</tr>
</tbody>
</table>

Tm – Annual Assured Bus Kilometres * Size of fleet
Ta – Actual Annual bus kilometres of the entire fleet
Rex – R * KM Extra i.e. Applicable per Km rate * Number of extra kilometres travelled by entire fleet

10.4.2 Payment mechanisms found in NCC Models

Under NCC models, the only payment mechanism is a route authorization fee or a route premium paid to the public authority by the private operator. Here some contracts provide for the revision of premium on yearly basis and some do not. In these models, the fare price is important as private operators bear the revenue responsibility. Though some contracts mentioned a fare revision formula, it does not get implemented due to various reasons. A summary of study findings are shown in Exhibit 10-6.

Many private operators also point out that while the authority sets fare levels, they do not provide any Viability Gap Funding (VGF) to compensate operators for financial losses.

Exhibit 10-6 Payment mechanisms found in NCC contracts

<table>
<thead>
<tr>
<th>Cities</th>
<th>Time frame for payment</th>
<th>Fare revision formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhopal</td>
<td>7th day in a month</td>
<td>Linked to inflation; but not followed on ground</td>
</tr>
<tr>
<td>Bhubaneswar</td>
<td>15th day in a month</td>
<td>Semi-annual fare revision based on formula</td>
</tr>
<tr>
<td>Indore City</td>
<td>not mentioned</td>
<td>notified by Govt</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>5th day in a month</td>
<td>notified by Govt</td>
</tr>
<tr>
<td>Surat City</td>
<td>yearly payment (5% increase)</td>
<td>notified by Govt</td>
</tr>
</tbody>
</table>

LEARNINGS:
The “bottom-line” is that for bus contracts to be viable and sustainable, operators must be able to operate on a proper business model. Expecting an operator to operate ‘commercially’ under a NCC is not feasible if the authority sets the fares (prices of goods), while not allowing the operator to manage the cost of production (as the authority sets routes and frequencies). As the market sets most of the other input costs (fuel spare parts, cost of finance, wage rates etc.) it eventuates that the operator control has very little of the risk that he is obligated to carry.
11. CONCLUSIONS ON REVIEW OF INDIAN BUS CONTRACTS

The review has indicated that the Indian city bus contracts are still in an infancy stage, with many problems appearing due to contracts being incomplete. A larger issue however seems to be that they do not appear to address important elements that will define a workable relationship between the public and private sector.

While it is easy to compile a ‘shopping list’ of suggested improvements, the three main areas for improvement are Roles, Responsibilities and Risk (the 3 ‘R’s).

What has failed the industry is the simple classification of Gross cost vs. Net cost contracts which simply assign revenue risk to one party or the other, without thought of what impacts this may have on the workings of the contract and the behaviour of each party. A more detailed thinking process is required which looks at each mechanism within a contract to work out where roles, responsibilities and risks lie, and in assigning these, how it creates the necessary incentives for performance (on both sides). It is possible that a hybrid form of contract will be the result.

The difficulties of managing risk within city bus operations in India have caused it to be passed between parties as each party tries to avoid it, or lessen its adverse impacts on itself. Quite simply, it is possible to share risk; it does not necessarily need to be an ‘all or nothing’ affair.

A constant theme throughout the review is the sustainability of operations, being either the ability of cities to fund GCC or operators to survive under NCC. This highlights a very important and critical aspect, being the fundamental necessity to develop a sustainable business model for city bus transport. This involves many aspects, such as ensuring sufficient ridership/revenue (and revenue protection) and ensuring operations are efficient and costs are managed. A system heavily dependent on subsidy is not sustainable as subsidy may not always be available or acceptable to the city, or subsidy may be subsidising inefficiency. In a ‘nutshell’ it can be stated that cities need to approach city bus transport on a commercial basis i.e. approach it as a ‘business’.

The review has indicated that cities which relied just on monitoring and regulation had less control. Taking a more managerial approach and sharing responsibilities and risk gave them more control. A ‘commercial approach’, requires the city to take a more assertive and managerial role, relying less on regulation and more on ‘managing the business’ of public transport (separate from the role of operating buses). This commercial approach orientates the city towards what they can view as ‘a commercially operated system partnering with the private sector to meet public objectives’ while the private sector would see its role as: ‘operating a commercial business delivering on public objectives’. Stated in this context, the city and the bus operators appear somewhat aligned in a partnership objective, with what could be mutually satisfying outcomes.

Another important aspect is the role of the contract in developing a workable relationship between the parties. As stated above, a ‘partnership’ type of contract towards common good is the best approach, but in fact every contract defines the relationship between parties (for better or worse). The reason for a partnership contract, where risk is shared, and each party is assigned the role and responsibility best suited to their capacity, is that every contract to some (or even a large) extent is incomplete, as unforeseen events or behaviours may arise, which have not been addressed in the contract. Establishing within the contract the right assignment of roles and authorities, and a shared risk, where both parties are motivated to perform, will create a basis for success.

Such an approach may seem to be in conflict with a previously stated principle in the learnings (Chapter 5) “every risk aspect of the business to be under contractual terms” which highlighted the need for bus manufacturers to be held contractually liable for after sales service obligations. This remains true, and the partnership aspect is one that describes the relationship between the SPV/City and the bus operator.

In conclusion, it must once again be emphasized that bus operating contracts cannot be approached broadly, by simply adopting either GCC or NCC. Every situation will have unique features, based on culture, history, trust, capacity, attitudes, and political imperatives etc. Every action has a reaction, and every contract clause will motivate a behavioural response. In many cases there are directly opposing pros and cons to any option so it is virtually impossible to decide between them.
The solution is to identify clear objectives for every aspect of a contract, understand motivational behaviours, and work out how to manage the downsides. A good example is the option of who procures the bus fleets. Both options have large downsides, so this is a case where the above mentioned processes can be applied.

The on-going study will further this approach taking into account overseas experience, where decades of experience have developed more mature models. The following section provides a very illustrative account of how cities have approached bus contracting and shows what worked and what did not. They provide some instructive lessons on how Indian cities can approach their own situations.

The exhibit below gives a brief snapshot of review of the Indian cities. The main contract features, contract procurement/extensions, ownership, performance monitoring have also been highlighted in the exhibit below.
### Table 11-1 Snapshot of Indian cities

<table>
<thead>
<tr>
<th>Cities</th>
<th>Population</th>
<th>Entity Responsible for Contracts</th>
<th>Ownership/Procurement</th>
<th>Contract type / performance control</th>
<th>Main Contract Feature</th>
<th>Contract Procurement Contract termination/ extensions</th>
<th>Performance Monitoring Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad</td>
<td>6.3 million</td>
<td>Ahmedabad Janmarg Limited (AJL) and Ahmedabad Municipal Transport Services (AMTS)</td>
<td>Fleet procured and owned by private operator</td>
<td>• Competitive tendering &lt;br&gt; • Gross cost &lt;br&gt; • Penalties imposed for failing to meet service standards</td>
<td>• Infrastructure facilities to be provided by authority &lt;br&gt; • Both the contracts have the fee revision of premiums linked to inflation. There are clear mechanisms defined for the payments and formulae given down for payment calculation &lt;br&gt; • BRTS - In the event of termination due default of authority, contract mitigates losses to private operator by providing business elsewhere</td>
<td>The contract is for six years for AMTS and seven years for AJL</td>
<td>• The ITS based monitoring is implemented in both the systems &lt;br&gt; • But the monitoring mechanism is not clearly defined in the contract though the indicators are laid down.</td>
</tr>
<tr>
<td>Bhopal</td>
<td>1.8 million</td>
<td>Bhopal City Link Limited (BCLL)</td>
<td>Fleet procured cost shared by Authority and Private operator and owned by authority</td>
<td>• Competitive tendering &lt;br&gt; • Net cost &lt;br&gt; • Penalties imposed for failing to meet service standards</td>
<td>• Infrastructure facilities to be provided by authority &lt;br&gt; • Operators responsible for insuring fleet &lt;br&gt; • 50% of advertisement revenue is shared with the operator. Pass revenue (80%) is divided based on the size of fleet operated by each operator. The time period for payment to operators not mentioned. Passes are issued by authority &lt;br&gt; • Operators responsible for revenue leakage, but they do not have enforcement power on the defaulting passengers. &lt;br&gt; • If change in routes or schedule of operation warrants additional buses, then operators bear the procurement cost</td>
<td>The length of contract is for eight years.</td>
<td>The ITS based monitoring is implemented &lt;br&gt; The monitoring mechanism is not clearly defined in the contract though the indicators are laid down.</td>
</tr>
<tr>
<td>Delhi</td>
<td>16 million</td>
<td>Department of Transport, Government of Delhi and Delhi Integrated Multi-Modal Transit System Ltd.</td>
<td>Fleet procured and owned by private operator</td>
<td>• Competitive tendering &lt;br&gt; • Gross cost &lt;br&gt; • Variable performance-linked bonus payments &lt;br&gt; Penalties</td>
<td>• Infrastructure facilities to be provided by authority &lt;br&gt; • Authority assists private operator in obtaining permit approvals from STA &lt;br&gt; • Revision of payments is linked to inflation and calculation of each component detailed &lt;br&gt; • Substitution agreement included in the contract. It brings down the operator’s financing costs as it assures the lenders</td>
<td>The length of contract is for ten years. It can be extended by 2 more years at the discretion of Department</td>
<td>• The ITS based monitoring is implemented with a full-fledged computer centre at DIMTS &lt;br&gt; • The penalty and rewards are automatically calculated using</td>
</tr>
<tr>
<td>Cities</td>
<td>Population</td>
<td>Entity Responsible for Contracts</td>
<td>Ownership/Procurement</td>
<td>Contract type/Performance control</td>
<td>Main Contract Feature</td>
<td>Contract Procurement Contract termination/ extensions</td>
<td>Performance Monitoring Method</td>
</tr>
<tr>
<td>-------------</td>
<td>------------</td>
<td>----------------------------------</td>
<td>-----------------------</td>
<td>-----------------------------------</td>
<td>-----------------------</td>
<td>-------------------------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Indore</td>
<td>2.1 million</td>
<td>Atal Indore City Transport Services Limited (AICTSL)</td>
<td>City bus - Fleet procured and owned by private operator, BRTS - Fleet procured and owned by authority, and cost shared by authority and private operator.</td>
<td>Competitve tendering, City bus - Net cost, BRTS - Gross cost, Variable performance-linked bonus payments, Penalties imposed for failing to meet service standards</td>
<td>Investing in the project</td>
<td>Quantitative formulae</td>
<td>The monitoring framework has classified the defaults/infractions into six categories. Each class of infraction has a penalty level and time to resolve that infraction.</td>
</tr>
<tr>
<td>Jaipur</td>
<td>3 million</td>
<td>Jaipur City Transport Services Limited</td>
<td>Fleet procured and owned by authority</td>
<td>Competitive tendering, Gross cost, Penalties imposed for</td>
<td>Infrastructure facilities to be provided by authority</td>
<td>Contract duration is 7 years</td>
<td>City bus - There is no monitoring mechanism defined in the contract, BRTS - the monitoring mechanism has been defined</td>
</tr>
</tbody>
</table>

The contracts are for five years. The contract is extendible for three years (city bus) and two years (BRTS) more if the performance of operator is found "satisfactory".

Vendor monopoly is clearly established due to mentioning of specific model from a specific manufacturer.

The minimum assured kilometre is measured per month instead of annually.

Incentive for operators to perform in long run as renewal of contract is linked to performance.

Operator establishes control centre for monitoring the data copy in real time.

Insurance premium to be paid by operators.

The warranty of bus fleet is from date of purchase rather than date of delivery.

Operator establishes control centre for monitoring the data copy in real time.

Infrastructure facilities to be provided by authority.

The minimum assured kilometre is measured per month instead of annually.

Incentive for operators to perform in long run as renewal of contract is linked to performance.

Vendor monopoly is clearly established due to mentioning of specific model from a specific manufacturer.

The warranty of bus fleet is from date of purchase rather than date of delivery.

Operator establishes control centre for monitoring the data copy in real time.

Insurance premium to be paid by operators.

Operator establishes control centre for monitoring the data copy in real time.

Infrastructure facilities to be provided by authority.

The minimum assured kilometre is measured per month instead of annually.

Incentive for operators to perform in long run as renewal of contract is linked to performance.

Vendor monopoly is clearly established due to mentioning of specific model from a specific manufacturer.

The warranty of bus fleet is from date of purchase rather than date of delivery.

Operator establishes control centre for monitoring the data copy in real time.

Insurance premium to be paid by operators.

Operator establishes control centre for monitoring the data copy in real time.

Infrastructure facilities to be provided by authority.
<table>
<thead>
<tr>
<th>Cities</th>
<th>Population</th>
<th>Entity Responsible for Contracts</th>
<th>Ownership/Procurement</th>
<th>Contract type / performance control</th>
<th>Main Contract Feature</th>
<th>Contract Procurement/Contract termination/ extensions</th>
<th>Performance Monitoring Method</th>
</tr>
</thead>
</table>
| Jalandhar         | 0.8 million| Jalandhar City Transport Services Limited (JCTSL) | Fleet procured and owned by private operator | failing to meet service standards   | • Operator has to return the fleet with an pre-defined fuel efficiency towards the end of the contract  
• Fuel is provided by the authority  
• Cost of damages for vandalism to be borne by the operator  
• Operator should provide additional buses in case of increase in demand  
• Responsibility of arranging for security is with operator | Contract duration is 5 years | The monitoring mechanism is not clearly defined in the contract though the indicators are laid down |
| Ludhiana          | 1.6 million| Ludhiana City Bus Services Limited (LCBSL) | Fleet procured and owned by authority | • Competitive tendering  
• Net cost  
• Penalties imposed for failing to meet service standards | • Infrastructure facilities to be provided by authority  
• Route license to be obtained by authority  
• 60% of the advertisement revenue and 80% of pass revenue shared with operator and remaining with authority. Advertisement right with authority  
• Private operator has exclusive right on routes  
• Private operator may nominate a director on JCTSL’s board  
• Operator is partially compensated for the capital invested, in an event of termination due to authority’s default | Contract duration is 9 years | • Performance parameter type, appraisal period and mode defined  
• But the monitoring mechanism is not defined |
<table>
<thead>
<tr>
<th>Cities</th>
<th>Population</th>
<th>Entity Responsible for Contracts</th>
<th>Ownership/Procurement</th>
<th>Contract type / performance control</th>
<th>Main Contract Feature</th>
<th>Contract Procurement Contract termination/ extensions</th>
<th>Performance Monitoring Method</th>
</tr>
</thead>
</table>
| Pune        | 5 million  | Pune Mahanagar Pariwahan Mahamandal Limited | Fleet procured and owned by private operator | • Competitive tendering  
• Gross cost  
• Penalties imposed for failing to meet service standards | • Infrastructure facilities to be developed by private operator  
• Authority procures the stage carrier permit  
• Minimum assured fleet kilometre specified  
• Operating kilometre are measured from starting bus stop to ending bus stop  
• Sale of fleet by operator is prohibited  
• Escrow account for payment to the operator | Contract duration is 7 years, with a provision to extend duration by 3 years | • Performance indicators mentioned, but monitoring not done through ITS. Hence, penalties are more subjective  
• There is no performance incentive |
| Surat       | 4.5 million | Surat Municipal Corporation (SMC) | Fleet procured and owned by private operator | • Competitive tendering  
• City bus under NCC and BRTS under GCC  
• Variable performance-linked bonus payments (BRTS)  
• Penalties imposed for failing to meet service standards | • Infrastructure facilities to be provided by authority  
• 2% tax on private vehicle registrations, and premium on property tax alongside BRTS corridors imposed to raise funds  
• Minimum frequency defined, but operator free to increase frequency  
• The fare revision is decided by Roads and Transport Department. While the fare revision is not committed, the premium paid to authority is revised at a fixed rate as per the contract  
• Fare revision is delinked with premium paid to private operators under this contract. Also a clear formula is given out linking payment of premium to inflation and fuel prices | The contract is for seven years in BRTS and six years in City bus services | The monitoring mechanism is not clearly defined in the contract though the indicators are laid down |

**Offering Public Transport within the City**
SECTION II - REVIEW OF INTERNATIONAL CITIES
The next five chapters examine the experiences of five international cities in their procurement of bus services from the private sector through the mechanism of concession contracts.

The five cities are Curitiba (Brazil), Quito (Ecuador), London (UK), Santiago (Chile) and Adelaide (Australia). Some of these contracts were implemented to operate BRT systems (Curitiba and Quito) and some were aimed at improving quality and service delivery across the whole bus network (London, Santiago and Adelaide).

These five cities have been selected as they offer a rich and varied source of instructive lessons which may be useful to designing contracts for Indian cities. Cities also differed in their starting points, some starting with a loosely regulated system (Santiago and Quito); some had already formalized operations (operator franchises Curitiba); and some were designed to engage private operators in public transport, replacing public bus systems (London and Adelaide). The review starts with a general overview of concession contracts so the reader can better understand the later discussion of why contracts worked or failed. From the review lessons would be understood from the various city experiences.

The five studies will be instructive on the design of concession contracts in Indian cities and also identify key elements of contract design and context to ensure successful outcomes. Some of these case studies have a number of parallels to India, and some give examples of ‘world’s best practice’.

In this review, all references to the ‘Authority’ refer to the city/state and public sector/government parties. “Operator’ refers to the contracted party, usually the private sector businesses, but can also include a government–owned company providing services under contract.

The exhibit below gives a brief snapshot of case studies of five international cities. All the cities reviewed have million plus population, and bus operations are undertaken by private operators. Except in Curitiba and Quito (both use BRT system), in all other cities demand risk is with the authority. The main contract features, and contract procurement/extensions have also been highlighted in the exhibit below.
## Exhibit 11-2 Summary of international cities

<table>
<thead>
<tr>
<th>Parameters</th>
<th>London</th>
<th>Santiago</th>
<th>Curitiba</th>
<th>Quito</th>
<th>Adelaide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>8.6 mil.</td>
<td>6.3 mil.</td>
<td>1.75 mil.</td>
<td>1.6 mil.</td>
<td>1.2 mil.</td>
</tr>
<tr>
<td>Entity Responsible for Contracts</td>
<td>London Bus Services Ltd. (part of Transport for London)</td>
<td>Transantiago</td>
<td>URBS (Urbanización de Curitiba)</td>
<td>UPGT (Unidad de Planificacion y Gestion de Transporte) and Municipality</td>
<td>PTB (Passenger Transport Board)</td>
</tr>
<tr>
<td>Total Fleet and number of operators/Ownership/Procurement</td>
<td>9000 and 14 operators/Procured and owned by operators</td>
<td>1700 and 10 operators/Procured and owned by operators</td>
<td>2200 and 10 operators/Procured and owned by operators</td>
<td>406 and one operator/Procured and owned by authority on line 1 and 2; and by operator on line 3</td>
<td>782 and 3 operators/Procured and owned by authority</td>
</tr>
</tbody>
</table>
| Contract type / performance control | • Gross Cost (fixed monthly payments on pre km basis)  
• Variable performance-linked bonus payments (paid annually)  
• Penalties for failing to meet quality standards | • Gross Cost (fixed monthly payments on per km basis)  
• Penalties imposed for failing to meet service standards | • Revenue collected by URBS and divided among operators in proportion to the bus km  
plied;  
• No performance incentives or penalty mechanism defined in contract | • Net Cost;  
• No performance incentives or penalty mechanism | • Gross Cost;  
Paid on fixed monthly sum (on as-is situation), ridership growth amount (fixed and per km amount per passenger) and change in service levels  
• Penalties for failing to meet quality standards |
| Main Contract Feature | • Infrastructure facilities by authority  
• Expected quality parameters clearly defined by the authority (example – service reliability, regularity, punctuality) | • Infrastructure facilities by Transantiago  
• Performance monitoring through frequency (ICF) and regularity (ICR) of buses\(^{18}\) | • Infrastructure facilities provided by URBS  
• Lack of performance control mechanisms  
• Contracts deemed to be in perpetuity  
• Fleet cost is reimbursed by URBS | • Infrastructure facilities provided by authority  
• Lack of performance control mechanisms  
• Payment towards cost of procurement of fleet on achieving certain level of profitability | • Infrastructure facilities provided by PTB  
• Strict monitoring of performance, as variable payment is major component (e.g. Reliability, punctuality, vehicle condition etc.) |

---

\(^{18}\) Frequency Compliance Index (ICF) measures the proportion of buses at the head of a route service compared to the buses required on that route by the operational plan and Regularity Compliance Index (ICR) measures the regularity (variance in headway) between buses at the head of a route service.
<table>
<thead>
<tr>
<th>Parameters</th>
<th>London</th>
<th>Santiago</th>
<th>Curitiba</th>
<th>Quito</th>
<th>Adelaide</th>
</tr>
</thead>
<tbody>
<tr>
<td>etc.)</td>
<td>• Quality-incentive contracts, with annual bonus payments linked to performance on quality standards</td>
<td>• Less than 100% compliance with the performance parameters gave rise to discounts in payments to operator.</td>
<td>at the rate of 1% per month</td>
<td>• Residual value of fleet is fixed at 10% of purchase price, and ownership transferred to URBS on payment of 90% of residual value by operators</td>
<td>• Operators allowed to innovate to exceed performance standards</td>
</tr>
<tr>
<td></td>
<td>• Penalties (up to 10 percent of contract price) imposed for not meeting the desired performance parameters</td>
<td>• Exclusivity of services for each operator</td>
<td>• No competitive tendering</td>
<td></td>
<td>• Payment to operator is linked with ridership</td>
</tr>
<tr>
<td>Contract</td>
<td>• Competitive tendering based on bus routes</td>
<td>• Competitive tendering</td>
<td>• No competitive tendering</td>
<td>• No competitive tendering</td>
<td>• Competitive tendering</td>
</tr>
<tr>
<td>Procurement</td>
<td>• 5 year contracts, with a possible 2 year performance related extension</td>
<td>• Contract term 5 years. Some contract are for 15 years.</td>
<td>• Private operator monopoly</td>
<td>• Private operator monopoly</td>
<td>• Contracts were for 5 years, with a possibility of extension by another 5 years based on previous performance</td>
</tr>
<tr>
<td>Contract</td>
<td>• Contract extension possible by 3 years</td>
<td>• Contract extension possible by 3 years</td>
<td>• No fresh bids invited and existing operators' in-effect hold the contracts (license) in perpetuity.</td>
<td>• Consolidation of number of operators and bring informal operators into formal arrangements</td>
<td>• Bring land transport under one authority</td>
</tr>
<tr>
<td>termination/</td>
<td>• Improve quality/ reduce subsidy</td>
<td>• Quality improvement with later addition BRT</td>
<td>• Commence BRT</td>
<td>• Commence BRT</td>
<td>• Separate role of operations from policy</td>
</tr>
<tr>
<td>extensions</td>
<td>• Transition of role of government from operator to just regulator</td>
<td></td>
<td></td>
<td></td>
<td>• Improve quality/ reduce subsidy</td>
</tr>
<tr>
<td>Reason</td>
<td>• Reform is an ongoing process. Going for sweeping reforms in one go may be too risky.</td>
<td>• Consolidation of number of operators and bring informal operators into formal arrangements</td>
<td>• Reforms have brought in the informal operators into formal arrangements</td>
<td>• PTB engaged with operators before initiating the bid process, to seek their opinion on process, contracts, and risk sharing. This partnership approach</td>
<td></td>
</tr>
<tr>
<td>for</td>
<td>• A central authority responsible for coordination of transport planning with land use planning helps as seen in</td>
<td>• Coordination of transport planning with land use planning helps as seen in</td>
<td>• Coordination of multiple agencies involved in planning, regulation, and co-ordination of all matters, led to better</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reform</td>
<td>• Since net cost contracts led to deterioration of service quality, quality incentive contracts were introduced. These contracts rewarded operators for</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Parameters

<table>
<thead>
<tr>
<th>London</th>
<th>Santiago</th>
<th>Curitiba</th>
<th>Quito</th>
<th>Adelaide</th>
</tr>
</thead>
<tbody>
<tr>
<td>achieving minimum or exceeding service standards</td>
<td>• Amongst other factors, improved service quality led to increase in ridership by two times between 1999 and 2007.</td>
<td>• Periodic revision in the operations plan based on changing travel demand needed</td>
<td>• A strong institutional structure helps</td>
<td>• Delivered high social value.</td>
</tr>
<tr>
<td>• A high degree of monitoring is involved, which ensured better performance</td>
<td>• Integrated fare system enhances passenger convenience</td>
<td>• Performance payments were made on an annual basis</td>
<td>• Financial structure of the system has to be well defined, the lack of which led to authority taking back operations from concessionaire</td>
<td>• High incentive for operators to perform better</td>
</tr>
<tr>
<td>• Performance payments were made on an annual basis</td>
<td>• Penalty regimes need to be credible</td>
<td>• Fare to be adjusted over time according to a cost index reflecting cost increases for production factors (fuel, tyres, etc.).</td>
<td>• Tariff has to be sufficient to cover operational costs and if not subsidy should be provided otherwise quality of service is impacted</td>
<td>• The outflow on account of incentive payment to operators due to higher ridership, led to some budgetary constraints. But this was indicative of wider success of the project.</td>
</tr>
<tr>
<td>• Integrated fare system enhanced passenger convenience</td>
<td>• Fare to be adjusted over time according to a cost index reflecting cost increases for production factors (fuel, tyres, etc.).</td>
<td>• Coordination between URBS and IPPUC</td>
<td>• Infrastructure upgrades need to keep up or performance of operators is impacted</td>
<td>• Integrated fare system enhanced passenger convenience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A strong institutional structure helps</td>
<td>• Consolidation of private players can eliminate &quot;competition in the market&quot;</td>
<td></td>
</tr>
</tbody>
</table>
12. THE CASE STUDY OF SANTIAGO BUS NETWORK REFORM

Acknowledgement

This section has not individually referenced material to specific sources, but the large contribution of the following is acknowledged and in some cases direct quotes are used from their work:

Antonio Gschwender of the University of Wuppertal in “Improving The Urban Public Transport In Developing Countries: The Design of a New Integrated System In Santiago De Chile (9th Thredbo Conference Series paper 2005) outlining the development of the Santiago bus reform, and data provided from the Transport Planning Office of the Chilean Government (Sectra), and Andre Gomez–Lobo E. and Julio Briones (2013) “Incentive Structure in Transit Concession Contracts: the Case of Santiago, Chile and London England – Clean Air Institute; has provided an extensive contribution to the discussion of contract mechanisms and the experiences of Santiago and London.

12.1 Background

Metropolitan Santiago has a population of nearly six million and comprises 37 districts (comunas) or municipalities. In the last few decades metropolitan Santiago has seen significant changes in terms of demographic growth and of the territorial distribution of activities. Most commercial and leisure activities were concentrated in a small downtown area, has given place to a pattern of increasing dispersion of activities throughout the whole metropolitan area and beyond. People have changed their pattern of movements around the city accordingly.

There are two levels of government, the national government and the regional governments, and one level of local administration, the municipalities. The national government has the overall constitutional mandate over transport matters. The Ministry of Transport is the only ministry involved in planning, regulating and monitoring public transport.

The metropolitan public transport management system consists basically of one body, which carries out the daily tasks of monitoring and regulating all aspects of public transport. There is no regulatory body dedicated to transport sector, unlike in the case of electricity, telecommunications, banks and financial institutions.

The Chilean economy is highly liberalized with strong private sector presence in all kinds of productive and service activities. The process of privatizing state companies started in the 1980s; electricity, telecommunications, gas, pension funds, health services, water, sewage, shipping, railways, ports and other companies have now been privatized.

Like most of the Indian cities, the bus system in Santiago before 2007 was characterized by informal operators, absence of fare integration, low quality buses and competition for passengers on the streets. Transantiago, the new public transport system for Santiago implemented the whole network reform in 2007; referred to as the ‘Big Bang’. It completely changed the route structure, the fare payment method, the contractual relationship with operators as well as many other dimensions of the city’s public transport system. The key milestones of Santiago bus transport reform are presented in the exhibit below.

Exhibit 12-1 Milestones of Santiago Bus Transport Reform

<table>
<thead>
<tr>
<th>MILESTONES OF SANTIAGO BUS TRANSPORT REFORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930-1960 Bus services predominantly by private operators. State acted as regulator.</td>
</tr>
<tr>
<td>1980-1982 De-regulation of bus transport services. Private operators were free to choose routes &amp; fares on their own resulted into excessive fares, poorly maintained buses, safety issues etc.</td>
</tr>
<tr>
<td>1990-1994 Beginning of regulation. A new law to franchise public transport services through tender process. Increase in number of passengers and increase in profitability.</td>
</tr>
<tr>
<td>2007 onwards Improvement is overall bus operations. Increase in customer satisfaction. Integration of public transport system, network structuring, infrastructure facilities etc.</td>
</tr>
</tbody>
</table>

© 2015 Deloitte Touche Tohmatsu India Pvt. Ltd.
The sections below highlights the key challenges and impact of reform on bus transport system. Summary of key takeaways for Indian cities are highlighted at the end of this chapter.

12.2 Bus Transport Services: Pre-Reform

12.2.1 Bus Transport service were dominated by private operators including infrastructure facilities

As mentioned above, bus services were entirely operated by the private sector in Metropolitan Santiago (as also across Chile). The last presence of the public sector in bus services disappeared some 40 years ago, together with the closure of the Empresa de Transportes Colectivos del Estado, ETCE, carried out by the dictatorship.

Garage and maintenance facilities were provided mostly by bus owners themselves. The bigger operators usually have their own garages and maintenance workshops but most keep their vehicles at night in their homes or at their drivers’ homes due to lack of parking facilities.

Each bus line has its own terminal, usually owned by the company or, in a few cases, rented. Most of these terminals, however, did not have municipal permits, because of the environmental problems they pose and the negative impact on the value of real estate near them. It is an historical contradiction between the desire to have a bus service as close as possible and the desire not to be inconvenienced by the presence of the bus terminals.

12.2.2 Highly un-regulated market

One of the most important changes in public transport occurred under the military dictatorship, between 1973 and 1989. First, the State-owned public transport company, ETCE, was dissolved, its buses and trolleybuses sold or dismantled. Second, in accordance with the extremely liberalized economic model that came into place in the country as a whole from 1982 on, public transport was completely de-regulated. So much so, that the only requisite that an operator had to comply with to get into business was to have the periodical technical revision of the vehicle done on time. During the dictatorship the private operators were free to choose a route and charge tariff.

12.2.3 Un-healthy competition

The competition on the streets had been a result of two mutually strengthened factors. One was the way in which drivers were remunerated. The fixed part of their salary was but a small fraction, 15%, of what they earn, the biggest portion coming from the tickets they sold on board; and since each driver was tied up to one specific bus, hired by the owner of that specific vehicle, he earned only what that specific bus made during the day). The other, the bus property structure and the way in which operators organized themselves, and still do, to deliver the service, as we shall see later on.

12.2.4 Poor and unreliable bus transport services

The result was that by the end of the 80’s there was an oversized and overaged bus fleet (14,000 buses of an average age of over 12 years), an excessive tariff in relation to actual costs, badly maintained buses, and high levels of emission of pollutants, users’ and citizens’ high degree of dissatisfaction with public transport. Actually, public transport operators were frankly hated by the people at large, users and non-users alike, because of the bad treatment the first ones received on board and the aggressive and dangerous way in which bus drivers usually drove their vehicles. They raced at high speed in very congested streets to “grab” a passenger before the bus coming behind “grabs” it, producing a high rate of traffic accidents, with a high cost in terms of lives lost and people injured. The main cause of death of the people in Santiago was not heart strokes or cancer, but traffic accidents. And 85% of traffic accidents involved public transport buses.

12.3 Bus Transport Reform

12.3.1 Reform Initiated

From 2003 to 2006, the Chilean Transport Planning Office (Sectra) undertook a major reform of the entire bus network in Santiago including new routes, fare integration and a new fleet under concession contracts.
In 2003, Santiago operated without subsidy, 3 metro lines, 8,000 buses, and shared-taxis that ran in specific routes with regular intervals. No fare integration existed and users had to pay a fare every time they boarded a bus, a shared-taxi, or when they entered the metro network. A large bus network existed with some 15 corridors having bus patronage of 5,000 or more passengers’ PHPD (Passenger per hour in peak direction) in the highest bus demand sectors. Over 4,000 so called companies operated these buses but there were in fact 2,500 bus owners that had just one bus, and 1,000 owning 2 or 3 vehicles. There were only 3 companies with more than 50 buses. The buses operated on a low cost base and competition for passengers was fierce as the revenue was tied directly to the driver’s wage.

As a result, the features of the service included:

- Unpredictable waiting times, long intervals, and refusal to stop at low demand stops
- Aggressive on-street competition, illegal and unsafe behaviour and with high accident risk
- Increased noise and pollutant emissions
- Lack of cleaning and preventive maintenance
- Inefficiencies in the route and frequency design impacting on the fares.
- Low productivity (empty running) during off-peak in the quest for market share which was a product of intense competition and revenue tied directly to driver's income.

On the other hand, some positive aspects for the users were:

- Frequencies were high also in the off-peak and weekend.
- Many lines overlapped, increasing options and reducing waiting times
- There was a high density of routes, reducing access time (walking)
- Many direct route options (without a transfer).

To improve safety and quality of bus services, the city decided to introduce a level of formalization, and a bus reform plan was devised for a major improvement of the complete bus system.

### 12.3.2 Strategies for bus reform

Santiago’s strategic approach appears sound, and was based on the following objectives:

1. Increasing the participation of the Authority in the planning and regulation of the system, keeping the operation in the private sector.
2. The improvements had to encompass the bus system as a whole, and not just a part of it.
3. Implementing a new route and frequency design, coordinating the bus lines not only between them, but also with metro.
4. Implementing an integrated fare system encompassing buses and metro.
5. Changing the property structure of the industry, from thousands of bus owners with a few vehicles to several bigger bus companies.
6. Giving adequate incentives to the operators, in order to eliminate the on-the-street competition and reach a higher quality in the service.
7. Avoiding the loss of the positive characteristics that the system had: high frequencies, high route density and low level of transfers.
8. Maintaining the fares in similar levels, and the absence of any operational subsidy was an active political restriction.
9. Avoiding any legal change, in order to reduce the risk of delays because of political discussions, by using existing laws that allowed greater regulation of the transport system when high congestion, pollution or accident levels existed, and the concession of infrastructure investment to the private sector.
10. Avoiding intensive requirements of new infrastructure, to reduce the risk of financial deficit.
12.3.3 Institutional reform

The main aspects of the proposed reform included creating a transport authority\textsuperscript{19} that externalized the operation to the private sector through three separate concessions, being:

1. the operation of the buses, tendered to different private companies to allow co-ordination and competition, classified as “authority and multiple operators” (also used in London and Copenhagen);
2. to create a finance administrator (AFT), tasked with:
   a. the selling and charging of a contactless smartcard which will become the main payment form in buses and metro,
   b. the administration of the revenues and payment to the bus operators, metro and other agents, according to the payment conditions established in the different contracts and the instructions of the Authority regarding penalties and rewards and
   c. Providing, installing and maintaining ticket-reading machines for the buses. The payment to the AFT will be a fixed amount plus a percentage of the user’s fares;
3. to create an information manager and users’ information provider (being Servicios de Información de Atención al Usuario de Transantiago (SIAUT) on a fixed payment) which was tasked to:
   a. Collect store and distribute operational information from the buses (GPS position, etc.),
   b. processing the operational information and producing reports for the Authority, in order to supervise the fulfilment of the contracts and determine penalties and rewards and
   c. Provide users’ information.

12.3.4 Bus route design

One of the most important characteristics of the new system was the transformation of the route network from the point to point, non-integrated and overlapping route scheme of the old system to an integrated trunk and feeder system.

A new service design and bus operators’ payment system was proposed, where the Authority developed the routes and frequencies, optimized according to demand/costs and eliminated the on-the-street competition between bus and metro lines.

The city opted for separate main and feeder routes, operating larger vehicles on the main routes where the Authority would plan the main routes (where the city development and the patronage are more consolidated), and smaller buses on feeder lines organized by the operators themselves under specific and adequate incentives for performance. Some route overlapping was allowed where high demand transfer points would cause unacceptable level of transfers. However, the contracts guaranteed exclusivity of service for each operator. The local feeder services of one area could not cross into other zones, nor could they penetrate more than 800 meters (or up to two contiguous stops) into roads where trunk services operated.\textsuperscript{20} The trunk operators were also authorized to operate only in the network assigned. This made route overlap minimal avoiding competition in the streets which was a major problem before the reform.

Bus operators tendering for a 10 year contract were required to have a fleet of some hundred buses or more, and finally 5 tendering units were created, with some 500 buses each, trying to avoid the coexistence of different operators on the same streets. 10 feeder areas were defined, following the existent inner frontiers of the city (rivers, hills, roadways, etc.) with area needing some 200 buses or less, and this required 15 tenders. A single operator could not win more than two main routes concessions or more than four concessions in total.

\textsuperscript{19} The initial authority was a special unit within the Ministry of Transport and Telecommunications.

\textsuperscript{20} Section 4.1.4.1 of the original tendering document for feeder services
12.3.5 Payment system

In order to integrate fares among different services and modes an electronic payment card was introduced. Users need to pre-charge the card before boarding a bus or metro. This system allowed different fares to be charged on different segments of a trip.

The payment system on main routes was initially planned to be according to vehicle-km basis (to avoid on-the-street competition), with feeder line operators paid according to number of passengers carried (as an incentive to the adjustment of the services).

However, finally it was decided that all bus operators should be paid according to the passengers carried, but was also semi-guaranteed, in order to reduce the operators’ risk and make contracts more attractive. If the actual demand differed from a reference figure, the operators only received a drop (or increase) in their income representing 10% of the demand change. For example: a 10% drop in service revenue would only impact operator’s revenue by 1%.

A new fare structure and integrated ticketing system was implemented to eliminate the cost-penalty of transfers and ensure fares did not increase. The contactless smartcard had already been in use in the metro. Specifically, the new revenue collection and ticketing arrangements separated the bus operators from managing revenue, with operator’s payments made at a predetermined rate according to passengers carried.

Any short-term deficits due to unexpected changes in the demand would be managed by a compensation fund (administrated by the AFT).

The payment per passenger received by the bus operators would be adjusted over time according to a cost index reflecting cost increases for production factors (fuel, tyres, etc.). In this case fares would be adjusted accordingly to maintain the financial equilibrium.

Other operator risks were also controlled by (1) guaranteeing minimum income between 85% and 60% of the predetermined income figure (2) the total concession period would be extended by up to 24 months, until an expected present value of the incomes was reached, (3) adjusting revenue on account of changes in patronage because of changes in the commercial speeds and (4) accessing the compensation fund in case of unforeseen drops in demand.

12.3.6 Penalties for poor performance

In order to control quality of service and give incentives to the operators for good performance a system of penalties and awards were defined in the contracts, with any income generated added as a performance bonus to good performers. A similar penalties/awards scheme is applied in the bus operation in TransMilenio (Bogotá).

12.4 The Implementation Experience in Santiago

Transantiago, the new public transport system for Santiago implemented the whole network reform in a single day in February 2007; referred to as the ‘Big Bang’. It completely changed the route structure, the fare payment method, the contractual relationship with operators as well as many other dimensions of the city’s public transport system. The results were immediate and disastrous.

It was immediately evident that the new system was insufficient to meet demand, waiting times and total travel times increased substantially, congestion increased at bus stops, inside buses and in the metro system, and users were forced to make costly and unpopular transfers between transport modes and vehicles in order to complete their trips. The consequence was a social and political upheaval not seen in the country since the return to democracy almost 20 years earlier.

The overall failure of the initial implementation comes from not having key elements of the system being in place which was further aggravated by the decisions made by the government. The elements of the system which were not complete were:

i. The smart card system was operational in only few buses and there wasn’t a comprehensive smart card charging network outside Metro stations.

ii. The monitoring system was grossly inadequate. The installation of GPS was delayed so monitoring of operating commitments wasn’t possible.
iii. The construction of segregated bus only streets and lanes were not fully complete.

This scenario was aggravated by a key decision made by the government that of payment to operators for the first three months would not be on per passenger basis but on the reference demand and the fare would be flat and equal to the bus fare just before inauguration (US$ 0.7).

The consequence of this decision was that operators no longer had an incentive to provide services as their revenue was guaranteed so they considerably reduced the fleet size and the lack of monitoring system helped them.

In summary, the overall failure of this initial implementation can be attributed to 3 interdependent elements, giving an instructive lesson on ‘what not to do’.

- Firstly, the contract shielded the operators from demand risk (to reduce on-street competition) but it gave them no incentive to perform; in fact some did not even operate the buses.
- Secondly, the monitoring system was grossly inadequate, meaning that the Authority could not check performance, but paid operators on a ‘reference’ demand level (so operators got paid even if they did not operate services) and,
- Thirdly, the Big-Bang’ approach carried the danger of massive disruption to passenger routine, combined with newly appointed operators, but the Authority appears not to have considered the implementation risk. Transantiago has subsequently improved monitoring and renegotiated contracts to increase demand risk taken bus operators. It is worthwhile to understand the detail of what went wrong, and this is discussed in the box below.

### Transantiago Problems

The key problems were that in the beginning each operator had its own fare collection system, resulting in a lot of confusion for the passenger and that although operators were paid according to passengers transported which was the main bidding variable in the competitive tendering process, in actuality a complex mechanism was introduced to reduce the demand risk faced by operators. It involved paying operators on a fixed pre-established demand estimation (called the “reference demand”) so that operators only lost 10% of the actual demand decrease. There were also other mechanisms in the contract to protect the cash flow of operators, particularly those that would be making investments in new buses.

While this aimed to reduce the risk borne by operators, operators did not have incentives to comply with the operational plans, but earned a fixed income irrespective of the number of passengers transported or the number of buses they supplied. The lack of sufficient electronic payment card validation equipment and the inability of the clearing system to confirm passenger data meant that the Authority paid operators only based on reference demand. Unsurprisingly, operators found it profitable to reduce costs by lowering supply since income was unaffected. Non-compliance with the operational plan was the norm during the first period of the reform.

Further problems related to the impotence of the penalty system, because if operators accumulated excessive penalties to a set level in a 12 month period, the authorities were forced to terminate the concession contract. This proved useless in practice as an incentive mechanism as it was unclear who would operate the services during transition to a new operator. Thus it restrained the Authority’s capacity to pass fines and enforce the operational plan. It was a non-credible threat that eventually worked to the operator’s benefit.

Contracts contained provisions which disallowed drivers being paid according to passengers transported in order to reduce competition for passengers.

Planning had also assumed a strong institutional capacity to monitor and enforce these contracts; however the institutional structure was quite weak at the time of implementation, with Ministry of Transport and Telecommunications lacking the financial and human resources to properly undertake the task. Clearly the payment system needed to be renegotiated.

12.4.1 The nature of the renegotiated contracts

2007 – The first renegotiation was aimed at creating greater incentive for operators to cater for demand, increasing to 35% demand risk borne by operators instead of 10%; but fixed payment compensation was allowed for the drop in revenues, which nullified the incentive as operators continue with the same behaviour. Operators had a near monopoly and a captive market and the extra revenue incentive did not outweigh the savings they could make by cutting services.
A more powerful incentive, implemented in 2007 was to make payment according to compliance with the operational plan, using GPS signals to track buses in operation. Initially this worked, but as the tracking system was rudimentary operators soon found loopholes that allowed them to cheat the system, as the system could not discern which routes the buses were applying on or whether they completed the trip.

2008 - Two events conspired to improve the incentive structure. The first was a vastly improved vehicle tracking system that showed number of the buses on the route and headways that could be monitored in real time. The second was a constitutional funding rule that meant no operator could be paid for services not performed. Using the improved tracking capability, the Authority could now discount payments for services not performed.

2009 – Contracts were changed to a capacity-kilometres basis, but as any non-compliance would threaten payments, companies instructed drivers to meet schedules at all costs, irrespective of service quality provided. Drivers would often just not stop for passengers. Furthermore, drivers had no incentive to deter fare evasion and this became a serious problem. Catching fare evaders was difficult and problematic due to limits in technology (how to prove someone had not swiped the fare card) and enforcement needed police officers but such staffing was limited.

2010 – Greater demand risk was placed on operators by splitting payments into a fixed part and a variable part, with operators keeping a portion of the variable part if demand decreases but returning it to the Authority if demand increases. However this scheme still contained mechanisms to limit the risk.

2011 - While the original contracts prohibited operators from paying drivers as a function of the number of passengers transported, (to reduce competition for passengers in the streets), this was eliminated in 2011 so that a driver’s payment structure could be accommodated to make them more attentive to serve passengers and reduce fare evasion. It was expected that any negative behaviours could be managed by the penalty system.

The plan presumed that the system would be self-financing overall. In reality, it incurred a significant financial deficit which rose to about $300 million per annum. This was exacerbated by a very high level of fare evasion as public reaction to the poor services.

Further, there was no legal provision for providing subsidy for allocating budget specifically for that purpose. This created a major crisis in which the highest level authorities had to find means of obtaining funds ad hoc and channelling them to meet the subsidy requirements. It took several years to put formal mechanisms in place.

12.4.2 Changed penalty structure

From mid-2007, greater emphasis was placed on improving operational performance through the payment mechanism, but fines were still effective in certain cases and specific routes and services. So while payment mechanism guaranteed an overall level of services, fines became a useful tool to enforce performance in specific cases.

The fines limit (that could initiate termination) was eliminated and the associated payment discounts were formally introduced in the contract to be applied for specific services while overall service performance was enforced through the various compliance indices used in the monitoring process. Once again there is now a condition that total discounts cannot surpass 2% of the total payments due to an operator in a given payment period, which effectively limits the power of this incentive if performance deteriorates significantly. Also underperformance of certain indices up to some threshold does not generate fines.

Contract elements relating to fleet renewal and other environmental performance issues
The contract renegotiations also included fleet renewal clauses, although the focus is not greatly on these in this report. More information is provided in (Gomez–Lobo and Briones 2013).21

Suffice to say operators were rewarded with longer contract terms when they undertook fleet renewal, and further extensions applied when operators introduced buses that met the latest emissions standard.

The 2009 tender stipulated a new bus fleet, using a ‘Renovation Payment’ allowance (in USD to guarantee loan payments), which was independent of passenger related payments. By 2010, almost the complete fleet of 6,100 buses was Transantiago standard.

12.5 Lessons from the Transantiago Experience

In the above sections, experience in TS has been reviewed, identifying the main mistakes that were made in the general design, contractual framework and implementation of this policy, and the painful consequences these mistakes generated among the population. It is argued that many of the design problems were caused by insufficient attention to the impacts of the reform on the generalized cost of travel in public transport. These design problems were compounded by operational problems due to faulty concession contracts and an inadequate regulatory and institutional framework for such a reform.

The institutional structure initially formulated for the scheme was a special unit within the ministry of transport and telecommunications which didn’t even have the legal mandate to enforce fare payment as only police could enforce that. At the same time, as Santiago didn’t have a city wide system of local government (it is divided into 36 boroughs), most trivial modification to the system required consensus of up to 5 central government ministries, 36 local authorities, etc. In 2013, a Directory for Metropolitan Transit was created replacing the previous authority which had greater responsibilities and a more prominent regulatory role. From this we can conclude that having a central authority responsible for coordination of public transport services is a priority. The scope of the authority however should depend on the specific situation in the city.

Another important general lesson of the Transantiago experience is that a sweeping reform of such a critical public service at one stroke (the “big bang” approach) is too risky and a more piecemeal and gradual approach is recommended.

The integration of fare allowed transfers from buses to metros, which ultimately led to increased utilization of metro which is another lesson from Santiago. City bus operations should not be seen in isolation but as a part of the overall urban public transport system.

However we also need to understand that there was scarce evaluation of risk by persons familiar with commercial bus operations. This is understandable, as the planners are often from a regulatory background and view the world in a different perspective to a profit-driven commercial bus operator.

The incentive mechanism in the contract were either non-existent or at best, ineffective. This was quickly exploited by operators but the lack of monitoring capacity rendered the Authority impotent to address it in a prompt way. The lesson is that the contract and its mechanism is the prime requisite for success. Also later changes were difficult to make as the Authority was then in a weak negotiating position (having to compensate to alter the contract terms).

Lack of preparedness to manage the system monitoring was a contributing factor and it took 18 months to get this under control with better technology.

Of course, the ‘Big-Bang’ approach is the most often criticized aspect of this implementation. This is not entirely fair, as it is seen many other causal factors which contributed significantly to events. A well-constructed plan with good risk management and appropriate contingency measures in place could have had some prospect better success. Even passenger disruption may have been

forgiven if passengers perceived a large eventual benefit. However, notwithstanding what could have been, a more prudent approach would be to test the new concepts in a limited way, and then replicate the successes (let success build on success). Lessons learned could be applied in subsequent stages.
13. THE CASE STUDY OF LONDON QUALITY INCENTIVE CONTRACTS

Acknowledgement

In this section, once again it is drawn heavily on the work of Andre Gomez–Lobo E. and Julio Briones (2013) “Incentive Structure in Transit Concession Contracts: the Case of Santiago, Chile and London England – Clean Air Institute. Also the information provided by Transport for London in ‘London’s Bus Contracting and Tendering Process’ 22 is acknowledged.

13.1 Background

The London bus network covers 700 routes and over 19000 stops and stations, covering all areas of Greater London. In 2014, the system carried more than six million people per weekday, operating a fleet of 9000 buses. More than 90% of Londoners live within 400 meters of a bus stop. London Bus Services Limited (London Buses) is part of Transport for London (TfL) which is one of the organizations responsible for delivering the Mayor of London’s Transport Strategies. London Buses manages the bus services in London and plans routes, specifies service levels and ensures service quality. It is also responsible for bus stations, bus stops and other support services. Transport for London (TfL) was created in 2000 as the integrated body responsible for the Capital’s transport system and is a functional body of the Greater London Authority.

London provides an illustrative history of concession contract development over the past 30 years, showing the process that has led to the Quality Incentive Contracts in use today. Quality Incentive Contracts have contributed in a major way to the service and quality improvements over the past decade particularly in reliability and punctuality. It achieves this through a system of economic rewards and penalties, incentivizing bus companies to act in such a way as to produce the level of quality expected by the Greater London Authority and its transport agency, Transport for London.

13.2 The Bus Transport System: Pre-Reform

During the period 1970 to 1985, one public bus company provided bus services under the control of the Greater London Council, which internalized both the costs and demand risks of bus services, providing poor quality of service. This inefficient monopoly absorbed huge amounts of public funds every year.

In 1985, full privatization was introduced, radically introducing competition through a tendering process and deregulation where the Greater London Authority was to be abolished. London Transport was to be controlled by central government, with the aim of privatizing the public bus company. The aim was to reduce public subsidies, transfer risk and opportunity to the private sector, with the expected by-product being improved operational efficiency and service quality. A few years later, new contracts were introduced where thirteen subsidiaries of London Transport competed against private firms in a route tendering process, on a least-cost basis. These contracts were a gross-cost contract which transferred only the operational risk to the contractor with the demand risk remaining with London Transport. Under these contracts, the payment mechanism was exclusively based on operational variables, with no demand risk transferred to operators.

In December 1992, the government announced the sale of the thirteen subsidiaries to the private sector and this was completed in 1994. London Transport however still retained the function of planning routes and setting the fare structures.

Between 1996 and 1998, the reform process took the pivotal step of introducing net-cost contracts where the operating and demand risks were assigned to the bus operator, where the bus operator would keep the fare revenue. The idea was that shifting the demand risk to operators would create the incentive to build revenue through increasing the quality of the service provided. But the net cost

contracts scheme did not produce the expected results as operators, perceiving a greater risk, focused on cost-cutting rather than improving quality to attract new users.

This provided the impetus for the introduction of gross cost contracts labelled ‘Quality Incentive Contracts’ which were implemented in 1998 to 2000.

The London experience demonstrates a variety of contracts adopted at different points in times. The main characteristics of the London bus contract over different time periods, along with the assignment of risks, are represented in the diagram below.

**Exhibit 13-1 Main characteristics of the London bus contract (E, Briones, Sanchez, Vargas, & Green, 2013)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of contract</strong></td>
<td>Contract with one subsidiary public firm</td>
<td>Gross cost contract</td>
<td>Net cost contract</td>
<td>Gross cost contract</td>
<td>Quality incentive contracts</td>
</tr>
<tr>
<td><strong>Ownership of bus companies</strong></td>
<td>Public (1 firm)</td>
<td>Public (13 firms) and private</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td><strong>Transport authority under control of</strong></td>
<td>Metropolitan government</td>
<td>Central government</td>
<td>Central government</td>
<td>Central government</td>
<td>Metropolitan government</td>
</tr>
<tr>
<td><strong>Production risk allocation</strong></td>
<td>Government</td>
<td>Operator</td>
<td>Operator</td>
<td>Operator</td>
<td>Operator</td>
</tr>
<tr>
<td><strong>Demand risk allocation</strong></td>
<td>Government</td>
<td>Government</td>
<td>Operator</td>
<td>Government</td>
<td>Government</td>
</tr>
</tbody>
</table>

The key milestones of London Bus Transport reforms are represented in the diagram below.

**Exhibit 13-2 Milestones of London Bus Transport**

**MILESTONES OF LONDON BUS TRANSPORT REFORM**

- **1970-1985**: Bus services predominantly provided by a single public bus company, creating a monopoly and absorbing huge amounts of public funds.
- **1985-1996**: Introduction of competition, with public and private operators competing in a route tendering process, gross cost contract adopted.
- **1996-1998**: Introduction of net cost contracts, with the aim of increasing quality of service by passing demand risk to operators, the idea backfired as operators focused on cost cutting to attract new customers.
- **1998-2000**: Variation of gross cost contracts brought in, termed as ‘Quality Incentive Contracts’. Incentives were linked to quality measurements, good performance rewarded and poor performance penalized.
- **2000-Present**: Drastic improvement in service quality levels, though increased pressure on government budget.

**13.3 The Radical Transformation: Introduction of Quality Incentive Contracts**

Burdened by the pressure on government budgets and driven by the desire to improve service quality over cost saving, Transport for London was established and Quality Incentive Contracts (QICs) were introduced in London in 2001. These replaced the conventional Gross Cost and Net Cost contracts, both of which had their inherent challenges. These QICs are a development over previous contracts, but with direct financial incentives for operators linked to the quality of service. The contracts are an extension of the gross cost model wherein TfL retains the revenue. The operators are paid monthly...
with annual bonus payments for meeting quality parameters. Previously, while each route had a reliability benchmark called the Minimum Performance Standard (MPS), the older Net Cost and Gross Cost contracts had no financial incentive to achieve those targets. This gap is fixed in the QIC model, which incentivizes operators to meet quality parameters.

The key features of London Buses tendering and contracts system can be summarized as follows (London, 2008):

- Contracts are designed to provide incentives to operators to improve quality
- Routes are generally tendered individually, but often at the same time as other routes in the same area to facilitate service changes.
- Contracts are normally for 5 years, with a potential 2 year performance related extension available to the operator
- It is a continuing programme of tendering, with between 15% and 20% of the network typically tendered each year.
- Tender evaluation is based on best value for money, taking into account quality and safety as essential features
- Contract payments are related to the mileage operated and overall reliability of the service
- Comprehensive quality measurements are used across all aspects of delivery.

The division of responsibilities between the public authority and the private operators is represented in the exhibit below.

### Exhibit 13-3 Division of responsibilities under London QIC (London, 2008)

<table>
<thead>
<tr>
<th>London Buses, or its third party contractors</th>
<th>The Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Determines and runs the tendering programme</td>
<td>• Develop and submit bids</td>
</tr>
<tr>
<td>• Determines the route</td>
<td>• Develop timetables, schedules which must be agreed with London Buses</td>
</tr>
<tr>
<td>• Specifies the frequency</td>
<td>• Provide and maintain premises and vehicles</td>
</tr>
<tr>
<td>• Sets and monitors quality and safety standards</td>
<td></td>
</tr>
<tr>
<td>• Sets vehicle capacities and minimum standards</td>
<td></td>
</tr>
<tr>
<td>• Agrees the schedule prepared by the operator</td>
<td></td>
</tr>
<tr>
<td>• Sets fares and retains the revenue</td>
<td>• Recruit, train and manage sufficient staff of a suitable calibre</td>
</tr>
<tr>
<td>• Supplies and maintains ticket machines</td>
<td></td>
</tr>
<tr>
<td>• Provides revenue protection (on-bus revenue protection inspectors)</td>
<td></td>
</tr>
<tr>
<td>• Supplies and maintains radio and vehicle tracking equipment</td>
<td></td>
</tr>
<tr>
<td>• Provides and maintains bus network infrastructure (bus stops, stands and bus stations)</td>
<td></td>
</tr>
<tr>
<td>• Provides roadside staff to deal with diversions and major incidents 24 hours a day</td>
<td></td>
</tr>
<tr>
<td>• Markets the bus services to the public</td>
<td></td>
</tr>
<tr>
<td>• Invests in major network and infrastructure projects.</td>
<td></td>
</tr>
</tbody>
</table>

13.4 Measuring Performance Through monitoring

Under QIC, the service performance of operators is closely monitored, made easier with more advanced ITS control systems. The performance measures under QIC are provided below:
13.4.1 Mileage Operated

Contract payments are deducted for any lost mileage that is within the operator’s control (staff absences or breakdowns).

13.4.2 Service Reliability

Spot checks are made to assess reliability and reflect the operator’s ability to schedule, control and adjust services, and impacts on the deductions and financial bonuses in the contract. Vehicle tracking technology is being introduced to automate this checking.

13.4.3 Regularity on High Frequency services

This check compares the interval between services and the advertised frequency aiming to ensure passengers on average do not have longer than half of the advertised frequency. The measure is expressed as “Excess Wait Time” (EWT), which is defined as the extra time that passengers have had to wait above the expected waiting period. The objective is to reduce EWT to zero. Additionally, ‘long gaps’ in service are measured, will indicate larger problems such as cancelled buses, curtailments and poor service control leading to ‘bunching’.

13.4.4 Punctuality on Low Frequency Services

On low frequency routes - four buses per hour or less throughout most of the week – services are measured on how close the departure time from the stop is to the advertised timetable. The measure is expressed as a percentage of departures that are “On Time” which is the window from 2½ minutes earlier than expected to five minutes later than expected. The objective is to increase “On Time” departures to 100%. Early running is penalized, as passengers may not have arrived at the stop.

13.4.5 Driver and Vehicle Quality Monitoring

The monitoring function for driver behaviour and vehicle quality employs external survey companies to conduct:

- Static audit of buses in service assessed at bus stops to evaluate fixed aspects of service delivery (e.g. graffiti, structural damage and in-grained dirt). Around 17,000 surveys are carried out per annum.
- Mystery shopping surveys whilst the vehicle is in service to assess vehicle handling, customer interaction and aspects of the vehicle affected by buses being in service. Around 33,000 surveys per annum are carried out.

The data is collated and following a quality assurance process is shared with the operators so that they can take action to address any areas of weakness that are identified. The results are used by London Buses to generate the payments (or deductions) under the driving and vehicle quality incentive regime.

13.4.6 Driver Quality Monitoring

While most employers would monitor drivers on the basis of complaints, claims or accidents London buses employs a specialist contractor to covertly undertake a survey over 6,500 assessments each year across the London Bus network to assess driving skills. It focuses as much on the technical ability of the driver – such as use of mirrors and lane discipline - as it does on passenger consideration. For each assessment, a driver receives a graded score for a series of measures such as speed, road position and braking and there are over twenty categories per assessment.

13.4.7 Engineering Quality Monitoring

London Buses also employs an independent contractor to make regular checks on the maintenance procedures and mechanical condition of the vehicles used on its contracts, and applied to approximately 25% of each operator’s fleet throughout the year. Any defects are noted and given a score, with higher scores for more serious defects. The key measure is the average number of points per vehicles, with a target of zero. The monitoring also includes the maintenance procedures, and the operators’ vehicle pass rate at annual test.
13.4.8 Customer Satisfaction

There are three London Buses Customer Satisfaction Surveys (CSS), focusing on Bus Services, Night Buses and Bus Stations which have been undertaken since 1997. These enable London Buses and bus operators to monitor customers’ satisfaction with the quality of services provided and identify areas for improvement. Face-to-face interviews are conducted with passengers alighting from buses. Questions relate to the journey that has just been made including overall satisfaction with journey just made, information, safety and security, cleanliness, reliability and staff behaviour.

13.4.9 Public Correspondence Data

London Buses collates all public communications made by phone, email or letter. This data is analysed at route level on themes including driving standards, and helps to understand and address specific concerns.

13.4.10 Contract Compliance Audits

To ensure that operators comply with the specifications in the contract, London Buses’ Contract Compliance team make regular visits to all operating garages. These audits help to ensure that: there are sufficiently rigorous administration systems in place to handle and account for on-bus revenue and London Buses owned or managed equipment. They also ensure that lost mileage is reported correctly so that the correct contract payments are claimed; and that drivers comply with working time and driving time legislation.

13.4.11 Other Sanctions and Remedies

Operators’ performance is regularly reviewed by senior London Buses staff, based on the abovementioned monitoring. Unsatisfactory performance is discussed with individual operators, and if necessary operators may be required to produce and implement action plans to resolve performance issues. Current and past performance is taken into account in the evaluation of tenders and recommendation for award of new contracts. London Buses usually resolves any performance issues through normal contract management. However if performance continues to be poor and it is considered that it cannot be resolved by other means, as an ultimate sanction London Buses retains the right to terminate any contract.

13.4.12 Safety

Safety is not an issue that can be traded off against costs so has no bearing on the payment incentive system. London Buses uses a range of data to assess an operator’s ability to provide a safe service and failure can result in the loss of a contract. Unsatisfactory performance can also lead to the failure to win new contracts. Also safety is not generally measured against ‘front line’ passenger experience, but from an insight into an operator’s standards. Much of the work is based on visits to operating premises and interviews with operational staff. These include checks on policies, procedures and risk assessments. These visits are followed by a report highlighting areas of concern and an action plan. This plan is then reviewed and forms the basis of the next inspection. In addition to Driver and Engineering Quality Monitoring, as described above, operators provide data regarding all accidents and incidents which occur whilst a bus is in service. This information is collated and analysed by London Buses.

13.4.13 Passenger & Staff security

The entire London Bus fleet is fitted with CCTV and recording equipment. This is used to identify individuals who commit offences, against both other passengers and the vehicle. It can also be used to assist in the investigation of injury and insurance claims.

London Buses operates a 24/7 central communications facility, CentreComm, and each bus is fitted with a two-way radio system which allows drivers to issue an emergency call if they require assistance. The radio system is otherwise used to communicate information about disruptions to service. TfL funds the Transport Operational Command Unit, a dedicated team including staff from the Metropolitan Police which is in place to deal with surface transport related policing issues, which includes enforcement of bus lanes, supporting revenue.
**13.5 Results and the cost of improving quality**

The QICs have significantly improved the level of service in London as shown by the Exhibits 1, 2 and 3 below. It not only shows service quality improvements, but also reflects the outcomes of the varying conditions applying during each period. For example, in 2001 when QIC became effective, Excess Waiting Time halved, indicating that prior contracts were focusing on cost and revenue incentives instead of service quality. Under net cost contracts, applied between 1995 and 1998, bus operators had incentive to transport people at the lowest cost possible, with low priority for on-time departures. With QIC the percentage of On Time Departures has increased since 68% in 2001 to 84% in 2014.

---

**Exhibit 13-4 Kilometres Operated**

---

**Exhibit 13-5 Low Frequency Bus Services Percentage ‘On Time’**

---

**Exhibit 13-6 Excess waiting time for high frequency bus services**

Source: (London, 2015)
At the same time, we should understand that this improvement in quality of service has seen a significant investment coming in as subsidies. Subsidies have increased significantly from GBP 41 million in 1999-2000 to GBP 367.5 million in 2012-13. However subsidy per passenger journey has fallen from 28 pence in 2008-09 to 16 pence in 2012-13.

13.6 Lessons from the London Experience

In the above sections, the London experience has been reviewed, identifying the main mistakes that were made in the contract design. The review has shown the cons of adopting a gross cost contract with a single public authority delivering services, as also the demerits of complete privatization. The limited incentive for operators to cater to demand (as is common in a gross cost contract) was addressed by London through reliability performance payments which provided financial bonus where operators met or exceeded the minimum standards. The QIC model has worked well for London, wherein operators are paid based on operational variables at a price established in the tender process. The London experience demonstrates that quality is contractible in urban public transport. The provision of extension to the contract duration based on quality indicators is another aspect which Indian cities can consider.

London experience also demonstrates that contract design is far more than a choice between gross and net cost contract. Both the contract designs have their own inherent challenges, and each city needs to understand the contract type or variant that would best suit it. The London experience is a lesson that assigning the complete revenue risk to operators can weaken the regulatory hand of the authority over quality. Controlling the money (payment system) inherently strengthens the hand of control.

Another lesson from London is how the auction system works. Bidder can submit bids on any number of routes and route packages. This system allows small bus operators to participate in specific routes fostering competition and at the same time bigger bus operators can bid in route packages and bring in coordination synergies and economies of scale and scope. (Amaral, Saussier, & Yvrande-Billon, 2009)

References


14. THE CASE STUDY OF CURITIBA - BUS REFORM THROUGH BRT

Acknowledgement

This section has drawn on the work of **Institute for Transportation and Development Policy (ITDP)** and Dr. Walter Hook and various expert contributors to the Sustainable Urban Transport Project (SUTP) supported by GIZ amongst others. Specific reference and sources are shown where possible.

14.1 Introduction

Curitiba is well known as the city that first implemented a Bus Rapid Transit (BRT) system in 1974 with its highly recognizable tube stations. BRT worldwide uses Curitiba and its later cohort Bogota as replicable models for the design of BRT.

Curitiba’s bus system includes 72 km of busway corridors, 123 stations and carries 581,000 passengers per day (www.brtdata.org, August 2015).

The success of BRT as a low cost, flexible public transport mode, capable of carrying large passenger volumes on well-monitored and technology equipped exclusive busways, is often credited to the level and design of this bus-dedicated infrastructure. However, a closer analysis of performance indicates it is in fact the institutional and regulatory reform that is introduced around a BRT that denotes its success.

Two BRT systems noted for success (TransMilenio Bogota and RIT Curitiba) have robust business models that are commercially sound and incentivise BRT management to provide a good level of service to control costs and build revenue, upon which they depend for survival. Compare this to the poorly performing BRT systems Beijing and Jakarta that rely heavily on subsidy to survive, where management appears disinterested in providing a reliable or quality service.

Furthermore, one of BRT’s success factors is its’ ability to formalise the informal, competitive and loosely regulated private sector into formal bus service arrangements. “It was a mechanism for allowing municipal governments to establish effective regulatory control over largely privatised systems” (Hook, 2005).

Curitiba is therefore an example of a ‘BRT type’ of concession contract which operates as a ‘closed’ system, where all operations are contained within the parameters of the busway. This means that the monitoring of service quality is relatively easy and the contracts can therefore operate on a ‘net-cost basis’ even though the fare box revenue is collected centrally by Urbanização de Curitiba (URBS). The operators are paid per bus km plied, in proportion to the total revenue collected, and not based on ridership.

14.1.1 Background

The Mass Transit System (MTS) covers Curitiba and eight neighbouring cities, using 1,900 buses on 340 routes to carry some 1.9 million passengers daily. About 70% of Curitiba’s commuters use transit daily to travel to work. The entire network covers 1,100 km of roads with 60 km dedicated for bus use. There are 25 transfer terminals within the system and 221 tube stations that all allow for pre-paid boarding. Special buses on 28 routes are dedicated to transporting special education and disabled patrons.

14.1.2 The bus reform process

The first city intervention into bus regulations in Curitiba was in 1962 where 321 private, informal sector bus companies were forced to consolidate into ten formal companies or collectives. This step was necessitated to reduce the excessive competition in the market and lower the number of new entities so that authority could regulate them. These new private entities were given bus operation licenses to operate a particular section of the city, with operations regulated through concession. 

---

23 Sustainable Planning: A sourcebook for Policymakers in Developing Cities Source: www.sutp.org
agreements for a set term. However, these license/contracts were never tendered and continued in perpetuity, creating private monopolies, except in cases where routes pass through adjoining areas, operations were split between the two companies.

In 1963, a special purpose organisation was established for the city government to manage and direct the MTS transport system. It was in the form of a publicly administrated, privately-funded company Urbanização de Curitiba (URBS). URBS enjoys administrative autonomy; access to important development powers typically prohibited to municipalities; some tax advantages, yet has a degree of political accountability. The company’s responsibilities were:

- awards concessions to the ten private bus operators to run the 256 routes;
- sets fares and minimum frequencies;
- runs the computerized bus scheduling system;
- inspects vehicles for safety;
- conducts surveys to evaluate the performance of the system;
- builds and maintains terminals and bus stops;

In later years it would manage the public transport fund into which bus revenue is deposited.

This indicates that the starting point for the 1974 bus reforms, which was spearheaded by the implementation of BRT were the monopoly bus operators with URBS as the regulator. The BRT introduced a system of exclusive busways on trunk lines with adjoining feeders instead of a maze of point to point bus routes. It also necessitated special, larger capacity buses that operated only on the BRT trunk corridors, and operators were finally persuaded to invest in these larger buses under threat of opening up the routes to competitive tender. The change to trunk and feeder systems did not cause problems as the trunk route passed through the sections controlled by the two operators.

With no modern ticketing system, the operation of the trunk-feeder had many problems and the transfer ticket system was regularly cheated, resulting in a reversal to non-integrated ticketing being used (one ticket per trip). This adversely affected the poor living in peripheral areas that had to pay twice when they incurred a transfer. Many options were tried but failed, and only when the closed stations allowed free transfers was the problem solved.

As the operator monopoly had been allowed to continue, and operators collected fares (and took revenue risk). There is no evidence of any quality issues as operators relied on passengers to maintain their revenues and profitability. Financial viability was also assisted to a great degree by the heavy public investment into bus infrastructure. Private operators continued to fund bus investments (and still presently do so). The lack of demand data meant the city had to rely on the operator’s revenue and cost data, meaning that initially Curitiba’s bus fares were significantly higher that similar systems in South America\(^24\). When further lines were added and ticketing was integrated, it led to a conflict over revenue share amongst operators, and the URBS was assigned the responsibility to centrally collect fare revenue, and pay operators on a variable kilometre basis. However, negotiations over the fare level have remained controversial.

The revenue pooling system distributes revenue based on the number of kilometres travelled by vehicle type for any given company. The private operators contracted by URBS own, operate, and maintain the buses running on the system. Passengers pay a single fare equivalent to about 40 cents (US)\(^25\) on entry to the system which allows unlimited transfers, using the services of the ten different, private zonal bus companies. The system operates without any direct subsidy from the city government. All ten bus companies earn an operating profit. Some of the key milestones of the Curitiba bus system is presented in the exhibit below.

---

\(^{24}\) This is presently uncertain as other researchers indicate fare price similarities to Bogota.

\(^{25}\) According to research material (Hook W. 2005) fares were 0.55 US cents whereas in Bogota it was only 0.40 US cents.
14.1.3 Supporting policies

It should be noted that Curitiba’s bus system does not operate in isolation from the design of the city or other supporting transport policy.

The transport system in Curitiba is founded on an integral land use and transport policy along the major radial corridors of the city. The motivation for development of BRT scheme itself comes from this thinking as described in Nikitas & Karlsson (2015) by Jaime Lerner, the Mayor of Curitiba who introduced BRT. The three parameters he mentions are

i. Restrictions of the local economy to cater to financial needs of building and sustaining a metro system

ii. The need to have an interactive urban environment that integrates mobility, in a very visible way, with overall sustainability focus of the city

iii. Maximising the potential of existing bus system by transforming it in a cost effective way to fit the vision of an integrated city

These parameters follows from the Master Plan approved in 1966, changing the city’s radial configuration into five linear ‘structural avenues’ along which high-density residential and commercial development would be concentrated by zoning laws. This provided the main transport corridors to support high capacity mass transit systems.

The parking policies have further assisted in shaping travel demand, particularly to/from the central area. In the central area, roadside parking is limited and expensive. In addition, the city’s central area is partially closed to vehicular traffic. At the same time, the city has 90 miles of bike paths. This has
helped the city maintain a high modal split for public transport of 46% with 28% coming from non-motorised mode.

These policies thus help support the demand side of bus services and the high investment by the government into bus infrastructure help reduces the cost of operation.

14.2 Lessons Learned From the Curitiba Experience

The first lesson from Curitiba is the need for committed participation of city leaders in either conceiving or leading planning and implementation of the bus system. Curitiba, Bogota, Ahmedabad benefited from committed approach while Santiago, Cali, Delhi didn’t have that and had difficulties in implementation (Lindau et al, 2014).

On the contractual side, Curitiba’s experience highlights how the dynamics of the contract change. In 1974, when the first contracts were signed the bus route licenses were up for renewal and leverage was with the city. However, the subsequent renegotiations have allowed the operators to hold the contracts in perpetuity and avoid a tender process. This, as URBS may suspect has implications on the costs of the system. However, the flipside of having continuity is that URBS has made no investments in procurement of buses and private bus operators have always financed the bus and the system is self-sufficient and hasn’t required subsidy from the city.

A competitive tender would have to identify clear objectives, and also offer generous accommodation to existing operators (being an additional score for incumbency and the competitive edge of knowledge, depot availability and fleet). Some level of protection is then offered, but the cost of operation is tested in the marketplace. Experience in Perth and Adelaide showed that initial tendering rounds delivered 25-38% savings, but later tender rounds yielded only 4-5% and the disruption may not have been worth it.

The lesson here for the process of designing concession contracts is a key one. The balance of power in a contractual relationship shifts to the party with the most to lose i.e. the party carrying most risk is the one who has the power to dictate the outcomes. URBS collects and distributes revenue, but its control over costs is limited to assigning kilometres of service to operators, not the unit cost of those kilometres (which seems to be dictated by operators). So in this sense it is in fact the manager of the network; it only needs to make a business decision whether lower costs can and should be pursued.

Another lesson from Curitiba is to have a strong institutional structure. The operational planning and public transport law enforcement was the specific responsibility of URBS and it had a close relationship with land use planning unit, IPPUC. This clear demarcation of responsibility helped Curitiba. (Pienaar, Krynauw, & Perold, 2005)

References


Transportation Research Board. 2003. Curitiba, Brazil - BRT Case Study.
15. THE CASE STUDY OF QUITO – STRENGTH TO IMPLEMENT BUT WEAKNESS IN MANAGEMENT

15.1 Introduction

Quito, Ecuador is an example of an infrastructure-led bus reform that formalized the informal operators. This was not without resistance and significant opposition had to be overcome. The establishment of a single authority in transport planning and management was critical to building a successful integrated system.

Quito’s bus system includes 69 km of busway corridors, 101 stations, 11 transfer stations and carries 833,000 passengers per day with a fleet size of 575 buses (www.brtdata.org, August 2015). The system is divided into five corridors: TroleBus, Ecovia, Central Norte, Sur Oriental and Sur Occidental. The Trole project opened in 1995 and BRT network was expanded with Ecovia (2002), the Central North corridor (2004), the Southeast Corridor (2010), and the Southwest corridor (2012).

Quito started its bus reform process from a mostly unregulated (at best loosely-regulated) free enterprise system with bus license/franchise conditions barely enforced and bus services in decline, particularly in terms of service quality. This situation was aggravated by lack of planning, regulation and control (Hidalgo & Graftieaux, 2007).

Post reform however Quito's system is considered an example of cost effectiveness and applicability of BRT even under stressed economic conditions (Wright & Fjellstrom, 2005).

15.2 Background

Prior to 1996, different types of buses with varying passenger capacity supplied all bus services. These buses were predominantly privately operated through cooperatives and private companies as well as unlicensed private operators. In 1992, the average bus was 17 years old and some buses were 35 years old. The buses were 30% louder than international norms, and emissions were well in excess of international guidelines for particulates (Arias & Wright, 1999). Bus owners hired their vehicles to drivers on a daily basis which led to intense competition at stops leading to low quality of service.

15.3 The reform process

The development of bus–dedicated infrastructure spearheaded the reform process in the form of the Trolebus System (electric trolleybus), first implemented in 1996 with later extensions and designed as a trunk-feeder system, necessitating major route rationalization and reorganization of affected operators. Quito has now developed five BRT lines as a ‘closed’ trunk and feeder systems. First to be implemented was the “Quito Trolebus” (the green line - a trolleybus system). The next implementations were the “Ecovia” (red line), “Central-Norte” (blue line), “Sur Oriental” (orange line) and the “Sur Occidental”, all of which are served by diesel buses. The average operating speeds of the system is at 17.8 kph

An important and key factor in the successful introduction of Trolebus was a fundamental change in the transport law making the Municipality responsible for “the planning, regulation, and co-ordination of all matters related to public and private transport”. This law consolidated a number of agencies, under a single agency and resulted in the creation of the UPGT (Unidad de Planificacion y Gestion de Transporte - UPGT) a single entity with powers to plan, design, implement and regulate the new bus system and overcome the administrative gridlock in the development and integration the transport sector. The proposed scheme was met by severe resistance from existing private bus operators. It culminated in a week-long strike. However, the public supported the Trolebus proposals and a state of emergency was called by the government, which enabled strong measures to be taken to re-establish the transport system and the new Trolebus System.

As UPGT’s remit did not extend to bus operation, the Municipality created a special trolleybus operating Municipal Department (Unidad Operadora del Sistema Trolebus - UOST) with the aim of establishing the system and transferring operations to the private sector after a two-year period; this has not yet happened as it was difficult to raise investor private interest. The city continues to operate
the Trolebus. It has been an outstanding success in developing passenger numbers, but struggles due to high electricity costs.

The key reform of a concession contract therefore started in Quito’s Ecovia line in 2002, and the financial problems with the first electric trolley bus line convinced them to go with diesel technology. Once again the municipality procured the buses. The contract was ‘given’ to a new consortium (TRANASOC SA) formed by affected operators (displaced from Ecovia routes). UPGT (the City) signed an agreement with this monopoly consortium which obligated the operator to begin making payments for the buses only once a certain profit level was reached. Because the bus consortium collects the fare revenues directly, the Municipality does not have full control over the information about how profitable the company is. As a result, the company to date has argued that they have yet to turn a profit, and thus the Municipality has assumed the entire cost of the bus procurement (Hook, 2005). Thus far (reported in 2006) operators have refused to pay anything for leasing the buses (Hook & Fjellstrom, 2006).

15.4 Results

The Quito bus reform process has directly transitioned the informal bus operators into the formal and contracted operator concessions of the BRT system. Actually achieving this was a remarkable feat, made possible by the creation of UPGT as the central agency to plan, design, implement and regulate the system.

However at the operational stage, UPGT’s role is somewhat weaker, as bus operators control revenue and take demand and operational risk. Furthermore, the State sets the fare levels – which appear to be set at a social fare benchmark, affecting operator profitability. In this case the municipality bearing the cost of the buses could be judged to be an indirect subsidy.

The lack of fiscal transparency over the bus operator’s contracts should be a concern for UPGT if they wish to better control the service delivery and outcomes. This can only occur if they step in and control a share of the risk, increasing their ability to dictate terms and influence outcomes.

15.5 Lessons from Quito experience

The first and important lesson from Quito is again the need for a single agency with powers to plan, design, implement and regulate. In the case of Quito this was UPGT.

In terms of contractual lesson, there are two lessons. The first one is the limited control of system quality and effectiveness from municipality. For an effective system, the performance monitoring should be more robust and well laid out in the contract. The second is the need for trust between traditional paratransit bus operators and authorities as the lack of this has resulted in the operation of buses moving back to authority.

The feeder routes have license given to individual bus owners and thus are multiple licenses issued for each routes. This arrangement provides a role for traditional operators who would otherwise have been excluded from the system which could be replicated in Indian cities.

In summary, the current contract model fails the test of sustainability and network control, and perhaps eventually quality service delivery. Our analysis therefore indicates that the Quito net-cost contract acts more as a licence in that the UPGT has no further role than just being a regulator, with little operational responsibility. The lesson is that a sound business model helps to underpin contract compliance.

References


16. THE CASE STUDY OF ADELAIDE – AN OBJECTIVES-BASED APPROACH

Acknowledgements

The work of Ian Wallis and David Bray in their paper ‘Competitive Tendering for Bus Services is acknowledged: The Improved Adelaide Model’ (2001) 7th International Conference on Competition and Ownership in Land Passenger Transport Molde, Norway 2001

To outline specifics, it is directly quoted and summarized sections from the Report of the Passenger Transport Board (PTB) to the Minister for Transport and Urban Planning on Service Contracts under The Passenger Transport Act 1994: Section 39.26.

16.1 Introduction

The city of Adelaide is a low density city with a high per capita percentage of car use, posing a considerable challenge for operating public transport efficiently, and in turn encouraging greater public transport use.

To develop its bus services the city has opted to operate a highly integrated community service model, where it proactively plans and manages the network, with operations awarded under competitive bidding to private sector operators for limited term contracts. Cost savings compared to the public operated services has been in the order of 38%.27

Prior to 1974, public transport in Adelaide was operated by the South Australian Railways, the Municipal Tramways Trust and 16 private bus companies. In the mid-1970s all of these systems were integrated under the State Transport Authority (STA), which operated almost all services until 1994.

The new Passenger Transport Act of 1994 created the Passenger Transport Board (PTB) to fund, plan, commission and regulate passenger transport in South Australia; converted the former STA into a new statutory operating body, TransAdelaide (TA) - relieved of policy functions but not corporatized (which has happened since); required all regular land passenger services to operate on a fixed route or timetable, to be operated under service contracts with the PTB; and required continuation of a common, multi-modal fare structure across the Adelaide metropolitan area.

The Government’s policy was to progressively introduce competitive tendering for the provision of public transport services, starting with bus services. Other features of significance in the Act were:

- maximum term of five years for any service contract;
- maximum limit of 100 vehicles for any single contract; and
- Phase-in provision to guarantee the publically-owned TA the opportunity to control at least 50% of services in the period up to March 1997.

These latter two provisions resulted from political compromises designed to provide some short-term protection for TA; to minimize the danger of any one operator gaining a monopoly position; and to give smaller operators the chance to compete for the provision of services.

Subsequently, the new PTB created fourteen new Contract areas across the metropolitan bus network, including ten area contracts and four route contracts. This high number of contracts was necessary to conform to the 100 bus limit (this was relaxed in Stage 2 amendments). One unintended consequence of this requirement was that it split the ‘through-city’ services operating to suburbs on opposite sides of the city, creating inefficiencies and additional buses in the city area.

26 Source: http://www.legislation.sa.gov.au
27 Bray DJ and Wallis I (2001) in their paper ‘Competitive Tendering for Bus Services: The Improved Adelaide Model’ 7th International Conference on Competition and Ownership in Land Passenger Transport Molde, Norway 2001
Adelaide’s public transport services was heavily subsidized with fare box revenue in 1997/98 at 28% of public transport operating costs, and 18% of the total cost of providing public transport, including the opportunity cost of capital.\(^\text{28}\)

### 16.2 Design objectives

The PTB took an ‘outcomes-based’ approach; listing its objectives for the benefit the public through the creation of a passenger transport network that:

- is focused on serving the customer
- provides accessibility to needed services, especially for the transport disadvantaged
- is safe
- encourages transport choices that minimizes harm to the environment
- is efficient in its use of physical and financial resources
- promotes social justice

The Act also provides that “service contracts should not be awarded so as to allow a single operator to obtain a monopoly, or a market share that is close to a monopoly”. In addition, it provides (in general terms) that the PTB must develop and maintain sustainable levels of competition within the transport system; that the integration of transport services must be encouraged and enhanced; and that Contracts must support innovation and that services must be operated efficiently so as to meet the needs of customers.

To this end, the RFP for contract bids expressed the PTB’s expectations that Contractors:

- establish best practice operations
- apply best practice asset management
- foster and facilitate co-operative and mutually beneficial working relationships with the government and other service providers to develop a viable and productive partnering relationship
- provide services complying with standards set by the PTB, with encouragement to be innovative in designing services to better meet the needs of passengers and increase patronage
- work with the PTB to improve public transport and the support for public transport in South Australia by:
  - Enhancing the integration of the public transport system through service design and promotion of a positive and identifiable image for the Metro ticket system.
  - Active marketing programs which have been mutually developed supported and implemented by PTB and Contractors.
  - Improved development and provision of excellent customer information.

The defining feature of this approach is the PTB’s aim to establish a strategic partnership relationship with Contractors, towards achieving more adaptive and innovative solutions to cater for demand.

### 16.3 Roles, responsibilities and the payment/incentive mechanisms

The contracts were area-based, giving operators exclusive rights within their service area, and were awarded in a competitive bidding process. Conditions were also established to provide for bus services that crossed contract boundaries. No commercial deregulated services were allowed.

The term of the contract was an initial 5 years, and would allow for contract renewal by negotiation for a further five years in cases of satisfactory performance. The extension of contract was based on performance of operator on KPI (Key Performance Indicators). 12 KPI were defined and their target values fixed in the contract. These KPIs included customer satisfaction, on-time performance, etc.

---

customer & public safety, fare compliance, management of infrastructure, quality assurance etc. The operator had the right to renew the contract, subject to performance. The operator must have achieved a high rating in 10 of the 12 KPIs for the performance to be considered as 'satisfactory performance'.

If the operator requests for an extension, the PTB will then enter into negotiations on price. If the operator seeks an increase in price, the PTB can refuse this (indexation is already provided for in the contract). If the renewal is on the same basis, PTB cannot look for a decrease in price. However, if there have been innovations PTB can seek a reduction in price. If agreement is not reached, then it can be sent for binding arbitration.

In light of the Government's primary objectives for the passenger transport reforms to encourage innovation and achieve service improvements, particularly improved frequencies, etc. it was concluded that operators should be in the best position to determine service requirements (having regard to costs) at the local, tactical level; and that they therefore should be given the primary role in detailed service planning within minimum service guidelines, stating that: "operators should be given the maximum opportunity and incentives to be innovative and responsive in the provision of services, in accordance with the community's needs while at least meeting minimum service standards" 29

Thus the system adopted for service specification and development was, in summary:

- a set of prescribed minimum service standards, both metropolitan-wide and specific to each contract area (generally based on previous levels of service);
- tender bids were required to be based on at least these minimum service standards, with additional points being awarded in tender evaluation for bids offering service enhancements;
- the contracted operator had primary responsibility for developing proposals for service enhancements and variations;
- proposals for service changes were subject to approval by PTB; and it was expected that contractors would finance service innovation from savings in the cost of service provision and revenue from additional patronage.

In practice, some operators proactively applied their expertise in catering to passenger demand; however, despite the incentive to exploit this provision for additional income, others simply managed costs to ensure they were profitable.

16.3.1 Payment mechanism

There was extensive debate on the structure and level of the payment formula prior to selection of the above basis. Issues included:

- whether all variable payments should be patronage-related or whether part should be service related (e.g. per bus kilometre);
- whether variable payments should differ by time period (peak v off-peak), by type of service and/or by passenger type (adult v child);
- how variable payments should vary with trip length (i.e. 'flag fall' and 'distance' relativities); and
- the absolute rates of payment.

The payment mechanism was to provide financial (and other) incentives to encourage operators to be innovative and to develop the market to better meet community needs and other government's transport objectives. However, there were also concerns about the budgetary risks associated with a system of operator payments relating to passengers carried.

It was finally decided that operator payments would comprise two components:

- a fixed (monthly) sum, which was the basis of the tender price bid; and

---

a patronage-related amount, calculated according to the change in patronage from the base year, at a rate of $0.50 per passenger boarding plus $0.10 per passenger kilometre (total of $1.50 for a typical 10 km trip). This ‘incentive’ component was typically around 50% of contract payments.

Given the integrated multi-modal ticketing system, and the large proportion of fare revenue collected from off-bus sales, all fare revenue was returned to PTB and was not a component of operator funding.

Therefore the payment mechanism was kept relatively simple. In line with the philosophy of giving the operator prime responsibility to develop the services in order to increase patronage, it was decided that the variable payments should be entirely patronage-related; i.e. the operator would be rewarded only for attracting extra passengers, not for providing extra services. PTB would not be concerned with how these passengers were attracted30. An example of this flexibility and innovation was that with the approval of the PTB, and subject to maintaining minimum service levels, operators could reassign services within their total kilometre allowance to adjust to demand, or special needs.

16.3.2 Other conditions

To reduce barriers to entry and to increase the level of competition, it was decided that the contractors would lease the buses and depots from the government for the period of the contract. This also allowed government greater flexibility in case a contract was terminated, and the relative short term duration of the contracts was also a factor. The bus lease arrangement had a possible downside in that it reduced the scope for bidders to offer more innovative styles of service, for example using minibuses or ‘taxi-buses’.

To meet the government’s objective to provide service integration and coordination, integrated ticketing and centralized service information, the set minimum service standards included specific criteria for route and timetable coordination between modes, routes and operators, to preserve the integrated nature of the system, including shared corridors.

The previous integrated (multi-modal) fares and ticketing system was retained with no flexibility allowed, and off-bus ticket sales continued to be the responsibility of PTB. Operators were required to lease on-bus electronic ticketing equipment from PTB, to minimize fare evasion, and to reconcile and pay to PTB all revenue collected.

Passenger information remained primarily a PTB responsibility, where it managed all centralised information sources (telephone service and information kiosks); while operators were made responsible for preparation of timetable leaflets, within a PTB approved format.

An important part of Adelaide’s methodology was the Tender evaluation process, which are not explored in the other case studies. This is because Adelaide’s efforts were highly focused on selecting the right operators, which was seen as being inherent to the success of the reform process.

16.4 The tendering and evaluation process31

The Adelaide competitive tendering and contracting (CTC) process was carried out over 2 stages:

- Stage 1 tendering (1995-97) – involving tendering out about half the bus services in two rounds of tendering; and
- Stage 2 tendering (1999-2000) – involved tendering out all the services, including re-tendering of those previously tendered in Stage 1.
- Stage 3 tendering (2005) – involved retendering of some contracts

---

30 This means that PTB did not define every action or strategy that operators employed to attract passengers, allowing them to innovate as they wished. Contract terms and conditions however outlined quality and safety requirements.

31 This section quotes extensively from the work of: Bray DJ and Wallis I (2001) in their paper ‘Competitive Tendering for Bus Services: The Improved Adelaide Model’ 7th International Conference on Competition and Ownership in Land Passenger Transport Molde, Norway 2001
The tender process was open to all interested parties, without an initial 'expression of interest' stage. Tenderers were required to submit conforming tenders, which complied with all requirements of the Request for Tender (RFT) specification, including the lease of the government buses and depots. Tenderers could also submit non-conforming (alternative) tenders, which did not need to comply with certain requirements.

Approximately 9 months was allowed between the call for tenders and the start of services: 2 months for submission of tenders; 4 months for tender evaluation and negotiation; and a further 3 months for the successful tenderer to prepare to operate the services.

The overall objective of the tender evaluation process was to select the tender offering 'best value for money' to government, not necessarily the lowest contracted cost. The tender evaluation process was undertaken through a Tender Evaluation Committee, with an independent chairperson and including some experts external to PTB.

The tender evaluation process included:

- check of tenders for compliance with stated requirements;
- detailed evaluation of complying tenders;
- normal commercial checks on financial status of tenderers;
- assessment of tenderers' previous performance in terms of service delivery;
- calculation of total budget costs to government associated with each tender (including any resultant 'whole of government' costs);
- comparison of tender bid prices against 'best practice' cost benchmarks;
- scoring of tenders against all evaluation criteria, and making trade-offs between 'quality' and 'price' criteria;
- assessment of broader Government implications of any tender bids (e.g. economic development proposals, environmental impacts); and
- preparation of a detailed tender evaluation report.

Four broad categories of criteria were used in the main tender evaluation:

- service quality (e.g. proposed service frequency, vehicle standards, etc.);
- competency (e.g. previous performance record);
- demonstrated financial capacity of tenderer; and
- base tender price quoted.

Evaluation eliminated all bids not meeting the minimum requirements. To include quality in the evaluation the following methodology was used:

- For qualifying tenders, 'quality' points were given for scores above the minimum requirement. These were then weighted, according to pre-determined weightings for each criterion, and a weighted total derived.
- This weighted quality total was then translated into an equivalent price adjustment, according to a predetermined scale, and a 'quality-adjusted price' was derived.

Subject to consideration of any broader implications of the tenders, the tender with the lowest 'quality-adjusted' price would be selected. The treatment of the incumbent government operator TransAdelaide (TA), proved to be a pivotal issue as it later prompted a pause in the contracting process. It was however allowed to bid for contracts, but was required to meet a set of Tender rules designed to ensure that competition was on a fair basis. These included:

- Tender prices were to fully reflect the costs incurred by TA in fulfilling individual service contracts;
- only those costs which were agreed between the PTB, TA and Treasury could be omitted from the tender price; and
- all bids were to be treated on an equal basis by the PTB during the tender evaluation.
The transition to the new contracts was relatively smooth. Government had however retained control of fares and ticketing; had not allowed competition on the road; had retained control over routes and timetables where these affected integration of the network; and contracting had been achieved at little political cost. Some improvements in service levels and in service quality were achieved, although not all of these can be directly attributable to the CTC reforms. (Ibid)

The Minister for Transport and Urban Planning reported that competitive tendering had resulted in a net annual saving of $14.9 million (Parliament of South Australia 1998a). This saving essentially reflects the lower operating costs due to the competitive tendering process, resulting in fewer staff, greater productivity and lower pay rates of the private sector operators relative to the previous monopoly government operation.

However after the first two rounds, the process was paused in order to negotiate terms on a non-competitive basis for the remaining eight bus contracts to continue to be provided by TA. This was due to a number of political factors, reflecting difficulties caused by public sector employment being overly impacted through the competitive bid process. This pause was traded off against voluntary savings/agreements that partly achieved objectives but reduced controversy and political backlash.

At the second stage (1999-2000) the bus operators were able to give their suggestions on what could be improved. They requested a simplified tendering process and tender documentation; reduced requirements regarding bonds and guarantees; that the PTB adopt a better ‘partnership’ approach; longer contract duration (with clear expectation of rollover); the ability to introduce own buses (or upgrading of the government fleet); and improved scope for, and less constraint on, innovation and service development.

The review took these suggestions into account and determined the following strategic issues relating to the competitive tendering process:

- the importance of a competitive supplier market;
- the style of contract relationships and obligations reducing risks faced by tenderers in bid pricing;
- contractor incentives and payment structures;
- Government budgetary issues and uncertainties;
- ensuring competitive neutrality in the tendering/evaluation process between TA and private operators.

The review subsequently concluded that:

- the limit of 100 buses in any individual contract was of questionable value, did not necessarily improve competition or efficiency, and compromised service provision, for example splitting of services previously linked through the CBD;
- the contracts were excessively prescriptive and too short, and thus did not allow contractors sufficient flexibility and time to introduce innovative services;
- the link between contract payments and patronage (with an average of about half of contract payments linked to patronage) did not encourage innovation and service integration; and
- views that the complexity, prescriptive nature and sheer volume of tender/contract documentation were an inhibition to potential bidders and a deterrent to innovation.

Others views expressed concerns such as:

- the limited number of bids for contracts, may have reduced competition in pricing and innovation etc. as contracts and tendering process was too prescriptive and contract terms were too short
- the scoring and weighting system of the evaluation process (designed to prevent judgment excessively influencing the evaluation) was in fact a too-rigid mathematical process that did not adequately allow desirable trade-offs between the various criteria;
- the need for improvements in contract management processes and the adoption of a ‘partnering’ (rather than adversarial) approach between PTB and the operators; and
- the adverse impacts of loss of contracts on TA and its staff.
Following these reviews and outcomes the government amended the Passenger Transport Act and resumed competitive tendering of bus services.

16.5 Key features of the stage 2 tender

The revised model took into account the changes in legislation and other issues that had been identified in the reviews of contract. Following were the key features:

Contract Timetable, Duration and Phasing

- All metropolitan Adelaide bus services were to be subject to a single tender round (the 'big bang' approach), with new contracts to commence operations in April 2000.
- Existing contracts were varied by negotiation to expire in April 2000, the time of commencement of the new contracts.
- Contracts were to be for an initial period of 5 years, with the possibility of renewal for a further 5 years subject to satisfactory performance and agreement on price.

Contract Numbers and Design

- The number of contracts reduced from 14 to 7, including two 'butterfly' contact areas to permit through-linking of services through the CBD.

Tendering Process

- Adoption of a two-stage selection process, with an initial Registration of Interest (then current contractors were automatically registered), followed by a Request for Proposals from qualified bidders.
- ‘Proposals’ were invited rather than ‘Tenders’. The distinction was intended to allow greater flexibility for participants; to avoid the implication that cost was the primary selection criterion; reinforce an expectation of innovation in service provision over the duration of the contracts; allow respondents to present their capabilities and proposals for service improvements and infrastructure provision; and to allow a broader range of factors to be more effectively taken into account in evaluation of submissions.
- TA was permitted to bid, subject to adherence to defined tender rules.
- All qualified bidders were required to submit a conforming proposal for any one or all of the seven contract areas, and had the option of submitting proposals for combinations of contract areas (being advised of the competition principles indicated in the revised Passenger Transport Act) and alternative proposals as they may have identified. For simplicity, 'combined' and 'alternate' proposals only had to contain documentation for those aspects that differed from the relevant single conforming proposal.
- Conforming proposals were to be based on operation of then-current services for the first year of the contract. This was to allow contractors to become familiar with their areas prior to making changes (and by association, to reduce the advantage of incumbent operators who could be expected to already be familiar with their services), and to facilitate comparison of proposals.
- Tenderers were required to also bid variable unit cost rates (per revenue kilometre and peak bus – in the event, the latter did not make an appreciable difference, and was not used in contracts) to apply in case of service adjustments.

Service Specification and Service Development

- Service planning and development was to involve a 'partnership' approach between operators and PTB. Operators were to take prime responsibility for initiating service changes, including annual service reviews, with proposed changes still subject to PTB approval as in Stage 1. However, PTB was to provide more information on passenger demand (e.g. derived from the ticketing system database) to contractors, in part to encourage operators to reallocate resources from under-performing services. PTB had the right to direct changes in services (with contract payments varied according to the variable unit costs). Relative to Stage 1, the Stage 2 contracts have greater PTB involvement in service planning, with consequently less need for detailed service standards.
• Compared with Stage 1, PTB now has a larger role in marketing the public transport system as a whole (including publication of all bus timetables), with operators focusing on local marketing.

**Contract Payment Basis**

• The variable payment rate that is linked to changes (+/-) in patronage was reduced, from an average of around half the average gross cost/passenger to around one quarter of average costs/passenger. This change was made because appraisal had indicated that the previous patronage rate was high relative to the degree of influence that operators had over patronage, with the high rate making operators risk averse to redeploying resources given uncertain patronage effects.
• An input-related variable payment rate (per revenue bus km) was introduced for agreed service changes.
• Penalties for early and late running and for missed services were increased substantially.
• Operators were insulated from patronage decline during the first year of the contract (but paid an incentive for patronage rises). Patronage in the first year will be the base for assessing future incentive payments.
• The new combined input/output-related payments for service changes reduced the risks in service enhancement and innovation for operators (while still retaining patronage-related incentives). It better reflected that service changes are a combined decision between the operator and PTB, and that the operator's efforts are only one of many factors influencing patronage outcomes.

**Contract Administration**

• As for service planning, the revised model places a stronger emphasis on ‘partnering’ between PTB and the operators to achieve desired outcomes. PTB now provides more information to operators on patronage demand on services (including exception reporting for low demand services), is establishing a centralized database on bus runs, and is considering demonstrating an automatic bus location and scheduling system. In general, there has been a culture change in contract management compared with the former model.

16.6 The results

Expressions of Interest were submitted by 24 operators, with the three incumbent operators routinely registered. All were invited to submit Proposals, which were due in September 1999. 87 separate Proposals (including alternative and combined Proposals) were received for the 7 contracts from 16 companies and consortia from Australia and overseas. Excluding alternative and combined Proposals, there were generally between about 6 and 8 proposals for each of the contracts. This much increased level of interest compared with the Stage 1 tender rounds (Round 2 in particular) was one initial indicator of success of the revised system.

The successful tenderers, announced in January 2000, were:

• Serco (North-South, Outer North, and Outer North-East contract areas), accounting for 395 buses and 53% of bus patronage;
• Torrens Transit (East-West contract area and City Free service), accounting for 255 buses and 36% of patronage;
• Australian Transit Enterprises – ATE (Outer South contract area), accounting for 82 buses and 8% of patronage; and
• Transitplus (Hills contract area), accounting for 33 buses and 3% of patronage.

It is worth noting that:

• despite proposals being received from a number of international bus operators, all contracts were awarded to companies either already operating in Adelaide (Serco) or Australian-owned companies with interstate bus operations (Torrens Transit and Transitplus, which was a joint venture of ATE and TA); and
• TA was unsuccessful in winning any contracts in its own right. Its bus business was wound up shortly thereafter, other than its shareholding in Transitplus.
The Stage 2 price bids were, in general, much more 'competitive' than those received in the Stage 1 tenders, with a number of price bids close to efficient cost benchmarks established prior to opening the proposals. A number of the proposals that were price competitive also ranked highly in terms of quality aspects. This was a further key indicator of the greater success of the revised system in attracting interest from capable and motivated operators.

Serco ended its contract in 2004, at the contracted half-term break-point, after failing to renegotiate its contract on better terms. Serco had previously informed the Minister for Transport that it was not willing to continue to operate the bus services for a further five years on the terms contained in the then existing contract. Serco had made a submission to the Department of Transport & Urban Planning proposing to operate the bus services in the contract areas on new terms and conditions. The submission was rejected and the contracts were retendered.

16.7 Lessons learned from Adelaide competitive tendering and contracting

The major lessons from Adelaide is that substantial savings can be achieved by competitive tendering compared with provision of services by a public entity with largest savings gained through lower overhead and management costs.

The second lesson is that there should be an appropriate balance between risks and rewards for operators in the payment structure. The four component structure of contract payments in particular service and patronage has provided operators with incentives to redeploy services (bus kilometres) and to expand service levels overall so that increased patronage related payments offset incremental cost of additional services.

Finally, the partnership approach between the operator and the Public Transport Division particularly in service planning arrangements allows bus services that can progressively adjust to market needs. This partnership approach’s applicability was seen from operators’ suggestions for the second round of tendering which aligned well with the government’s objectives; indicating that mutually satisfying outcomes could be developed.

At the same time, it should be noted that the payment system based on passenger growth did cause some budgetary problems for government when an operator exceeded passenger growth expectations, but while being an immediate problem was seen as indicative of the wider success of the contract scheme.

Another pragmatic aspect was the pause in the tendering process to reduce conflict and allow breathing space to reduce negative impacts. This should not be interpreted as weak or compromising as it reflects hard headed decision-making, taking into account the political realities and wider objectives (such as reducing conflict). This is an instructive lesson: that bold reforms also need to be sensitive and adaptive to realities. Strength of character inherent in the personalities attempting bold reforms can easily become confrontational when faced with opposition. Wider objectives must always be kept in mind.

---

32 This was the case of Torrens Transit as raised in the Thredbo 13 Conference in 2011 Oxford UK.
17. CONCLUSIONS AND RECOMMENDATIONS

Some guidelines for developing concession contracts can be drawn from the case study experiences, and these are summarized below. This list contains numerous aspects of contract reform and each reader may indeed draw different conclusions on what is instructive and can be learned from, based on opinion or emphasis.

Creating a successful concession contract is a difficult task, and getting performance incentives right is the key

Performance incentives need to have the correct balance to motivate behaviour and secure the anticipated outcomes. Payment mechanisms provide a more continuous and self-motivating incentive. Sanctions, penalties and rewards only work where adequate monitoring capacity is in place. Cause and effect need to be carefully studied.

Contracts should be underpinned by a sound business model based on commercial principles to create the conditions where compliance is made easier.

Contracts should also make responsibility accountability clear, with a principal/client relationship established to follow through on obligations and performance.

Risk should be shared and assigned to the party best able to manage it.

Reducing demand risk for the operators eliminates an important economic incentive, but excessive risk will cause negative competitive behaviour. If the operator is protected from demand risk, can the agency then manage it? How can risk be shared? If penalties for poor performance are in place, does the Authority have the capacity to monitor sufficiently? Risk placed with the Authority can also motivate behaviour – such as improving the operating conditions (traffic) when it also carries cost risks.

Getting it right takes time and the process needs careful planning

Sudden and massive change carries a high implementation risk. It is better to opt for a process that is more gradual, leaving space for some trial and error so that problems can be corrected as they arise. This would also apply to leaving some flexibility in contracts in the event of changed circumstances or unanticipated outcomes, and any changes can be made without incurring expensive legal compensation obligations.

If the reform process is disaggregated into smaller parts, the reform can be tested and then replicated across the wider network, for example: tackling an easier portion before embarking on wider reform or to experiment with pilot cases. Also functions such as ticketing and ITS can be implemented prior to the major reform commencing, so that these components can support the reform adequately, having been tested previously.

Ensure the contract delivers the means to control and manage outcomes

The case studies indicate that where operator represented strong incumbents and contracts were negotiated, the Authority had a weaker hand, often having to settle on poor compromises to reduce confrontation (Curitiba). The use of competitive bidding (London and Adelaide) placed the Authority in the driving seat of the reform process.

Regulatory control also improves when the Authority takes a share of the risk. Regulation is often ineffective against the bus operator’s ‘survival instinct’ or the profit motive. To be able to assert control, the Authority needs to accept risks that it can best control and manage. Controlling revenue is a key power lever and furthermore it helps to capture and protect system revenue; which is essential to ensure financial viability.

Reform requires clear objectives, a sound plan and strong planning agency

London and Adelaide successfully implemented reform based on clear and defined objectives. Quito faced powerful opposition to reform, but UPGT was able to overcome the administrative gridlock and faced off the opposition, with public support. Santiago paid a heavy price for the weak management of the reform process.
Reform should also set ideology aside. Santiago’s decision to adopt a ‘Bogota inspired’ contract model was not well thought out and did not appear to account for obvious risks. Each city must take stock of the local situation, its strengths and weaknesses, threats and opportunities to assess its course of action and methodology. Risk assessment must be undertaken by qualified people (use commercial practitioners for commercial systems) to ensure that incentive and control mechanisms are effective.

Ideological dogma (such as ‘privatisation improves efficiency’) needs to be critically analysed. The assumption that demand risk on the operator will make them more market sensitive, prompting them to improve quality of services to win customers did not hold up in London’s ‘Net Cost’ contract experience. Responding to what they saw as additional risks, operators cut costs and quality of service declined.

There are no perfect solutions

There is always some trade-off between conflicting objectives. For example, how much demand risk one wishes to transfer to operators will depend on the trade-off between the incentive-driven behaviour and the ability of the agency to control outcomes, risk assignments and budgets?

Some conclusions can be drawn as follows:

i. It seems that shielding operators from demand risk to some extent is unavoidable especially on a wider bus network. Even in BRT systems some payment incentive for improving aggregate passenger satisfaction can be considered instead of relying on penalties alone. Santiago is progressively moving to assigning more risk to the operator to make them mindful of catering to passengers and protecting revenue. Adelaide uses a payment system that rewards passenger growth.

ii. It is recommended to pay for services based on performance with respect to some key operational variables. The experience with the first Transantiago contracts, or the London experience with net cost contracts during the 1996-98 period, indicates that operators must be incentivized directly (through economic, penalty or reward for performance). Relying on indirect incentives (such as expecting demand risk to incentivise quality) has proved unreliable at least in the case of London’s net cost contract and the later permutations of the Transantiago contracts. It seems optimal that operators face some demand risk but the contract would not make payments completely dependent on ridership. They also need to include important performance-based bonuses or discounts in order to incentivize quality of service provision directly.

iii. Contract levers in some cases need to be able to be transferred to the bus drivers. While a linkage between driver’s salary and passenger revenue can have very negative influences especially in driving on-street competition, there are some cases where the drivers can be incentivised under the performance-related measures of the contract. This allows the company the tools to manage driver behaviour and performance, for example companies may wish to reward good performance instead of just relying on disciplinary action for misdeeds and failures.

iv. Balance contract flexibility with stability and security. Keep in mind uncertainties and future changed circumstances that need to be accounted for and may require renegotiation. This applies both ways, as the operator may also be in such a position. However the flexibility to change contracts explicitly is problematic as operators will expect and demand stability and financial security in order to invest and commit to the reform. There is the risk of opportunistic behaviour by one of the parties if contracts are not clear or complete. Including clauses that allow for change is one option (with appropriate compensatory trade-offs where necessary) or the possibility of modifying the contracts in a future tender round. Mid-term reviews in the contract or mutually acceptable changes (defined beforehand) with appropriate assurances may also assist this process. At least during initial contract development, realize that probability of contract renegotiation is probably very high, and include elements that retain some options for the future.
## ANNEXURE - I: LIST OF PEOPLE MET

<table>
<thead>
<tr>
<th>NAME</th>
<th>DESIGNATION</th>
<th>ORGANISATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. R.S. Pandey</td>
<td>General Manager</td>
<td>AMTS</td>
</tr>
<tr>
<td>Mr. Rakesh Patel</td>
<td>Manager</td>
<td>AMTS</td>
</tr>
<tr>
<td>Prof. H.M. Shivanand Swamy</td>
<td>Director</td>
<td>CEPT</td>
</tr>
<tr>
<td>Mr. Gautam Patel</td>
<td>Director &amp; Principal Consultant</td>
<td>Coordinate Infrastructure Consulting</td>
</tr>
<tr>
<td>Mr. Harshadray J. Solanki</td>
<td>General Manager</td>
<td>Janmarg, Ahmedabad</td>
</tr>
<tr>
<td>Mr. Pankaj Gandhi</td>
<td>CMD</td>
<td>Chartered Bus</td>
</tr>
<tr>
<td>Mr. Prayag K. Langalia</td>
<td>Manager</td>
<td>Ahmedabad Janmarg Limited</td>
</tr>
<tr>
<td>Mr. Chandramauli Shukla</td>
<td>CEO</td>
<td>Bhopal City Link Limited</td>
</tr>
<tr>
<td>Mr. Pramod Kapse</td>
<td>Assistant RTO</td>
<td>Transport Department, Bhopal</td>
</tr>
<tr>
<td>Mr. R.K. Jain</td>
<td>City General Manager, Bhopal</td>
<td>Prasanna Purple Mobility Solutions Private Limited</td>
</tr>
<tr>
<td>Mr. Subhash Bachkaiya</td>
<td>Assistant Manager (Public &amp; Government Relations), Bhopal</td>
<td>Prasanna Purple Mobility Solutions Private Limited</td>
</tr>
<tr>
<td>Mr. Prasanna Patwardhan</td>
<td>CMD</td>
<td>Prasanna Purple Mobility Solutions Private Limited</td>
</tr>
<tr>
<td>Mr. Abhijit Sarkar</td>
<td>Chief - Bus Concession</td>
<td>DIMTS</td>
</tr>
<tr>
<td>Mr. H.S. Kalra</td>
<td>Managing Director</td>
<td>Indraprastha Logistics Limited</td>
</tr>
<tr>
<td>Ms. Ranjana Deswal</td>
<td>Secretary</td>
<td>STA, Delhi</td>
</tr>
<tr>
<td>Mr. R. K. Jain</td>
<td>Pollution Control Officer</td>
<td>STA, Delhi</td>
</tr>
<tr>
<td>Mr. Sandeep Soni</td>
<td>CEO</td>
<td>AICTSL, Indore</td>
</tr>
<tr>
<td>Mr. Sandeep Trivedi</td>
<td>Manager Operations, Indore</td>
<td>AICTSL, Indore</td>
</tr>
<tr>
<td>Mr. Manish NAVghare</td>
<td>Manager, Finance, Indore</td>
<td>Serco Global Services Pvt Ltd</td>
</tr>
<tr>
<td>Mr. Roshan Agarwal</td>
<td>Manager, Indore</td>
<td>Chartered Bus Services Pvt Ltd</td>
</tr>
<tr>
<td>Mr. Manoj Jhiriwal</td>
<td>Manager</td>
<td>Chartered Cab Pvt. Ltd., Indore</td>
</tr>
<tr>
<td>Mr. Jagroop Singh</td>
<td>Managing Director</td>
<td>JCTSL, Jaipur</td>
</tr>
<tr>
<td>Mr. R.S. Naval</td>
<td>Consultant</td>
<td>JCTSL, Jaipur</td>
</tr>
<tr>
<td>Mr. Rishi Tak</td>
<td>Managing Director</td>
<td>Mateshwari Bus Operation Pvt. Ltd.</td>
</tr>
<tr>
<td>Mr. Damodar Tak</td>
<td>General Manager</td>
<td>Mateshwari Bus Operation Pvt. Ltd.</td>
</tr>
<tr>
<td>Mr. Vishal Tak</td>
<td>Manager Operation</td>
<td>Mateshwari Bus Operation Pvt. Ltd.</td>
</tr>
<tr>
<td>Mr. Sushil Rana</td>
<td>Project Manager</td>
<td>Jalandhar City Transport Services Limited</td>
</tr>
<tr>
<td>Mr. Baljeet Singh</td>
<td>General Manager</td>
<td>Ludhiana City Bus Services Limited</td>
</tr>
<tr>
<td>Mr. Ranjit Singh Dalpatia</td>
<td>City General Manager</td>
<td>Prasanna Purple, Ludhiana</td>
</tr>
<tr>
<td>Mr. Praveen Ashtikar</td>
<td>Joint MD</td>
<td>PMPML, Pune</td>
</tr>
<tr>
<td>Mr. Hinga Yashwant</td>
<td>Manager, Hire Buses</td>
<td>PMPML, Pune</td>
</tr>
<tr>
<td>Mr. Anant Waghmare</td>
<td>BRT Manager</td>
<td>PMPML, Pune</td>
</tr>
<tr>
<td>Mr. Sunil Burse</td>
<td>Chief Engineer</td>
<td>PMPML, Pune</td>
</tr>
<tr>
<td>Maj. Gen. S.C.N Jatar</td>
<td>Member</td>
<td>Nagrik Chetna Munch, Pune</td>
</tr>
<tr>
<td>Mr. Milind Torwane</td>
<td>Municipal Commissioner</td>
<td>Surat Municipal Corporation</td>
</tr>
<tr>
<td>Mr. Bharat S. Shah</td>
<td>Additional City Engineer</td>
<td>Surat Municipal Corporation</td>
</tr>
<tr>
<td>Mr. M.R. Brahmbhatt</td>
<td>City General Manager, Surat</td>
<td>Prasanna Purple Mobility Solutions Private Limited</td>
</tr>
<tr>
<td>Mr. Brajnandan Kumar</td>
<td>Chief Engineer, ITS</td>
<td>UMTC</td>
</tr>
<tr>
<td>Ms. Reema Prajapati</td>
<td>Architect/Urban Planner</td>
<td>CEPT</td>
</tr>
<tr>
<td>Mr. A.G. Khatiwala</td>
<td>City Bus Operation</td>
<td>Surat Municipal Corporation</td>
</tr>
<tr>
<td>Mr. B.R. Syed</td>
<td>Deputy Engineer, Traffic</td>
<td>Surat Municipal Corporation</td>
</tr>
<tr>
<td>Mr. Ketan Patel</td>
<td>Assistant Engineer, Traffic</td>
<td>Surat Municipal Corporation</td>
</tr>
<tr>
<td>Mr. Bakul Patel</td>
<td>Deputy Engineer, BRTS</td>
<td>Surat Municipal Corporation</td>
</tr>
<tr>
<td>Mr. Chetan</td>
<td>ITS Manager, BRTS Surat</td>
<td>Encode Solutions</td>
</tr>
<tr>
<td>Mr. Mahesh</td>
<td>Manager Operation</td>
<td>Rainbow Bus Services Pvt. Ltd.</td>
</tr>
</tbody>
</table>
ANNEXURE - II: CITY-BASED REVIEW

Review of Ahmedabad city

Context

Ahmedabad city is the seventh largest metropolis in India and is also the commercial capital of Gujarat. Since 1980s the city has grown from walled city area to far west end and has been continuously facing the challenge to develop infrastructure for convenient transportation solutions. Population growth in and around the city areas has been rapid due to the saturation of population within the city areas and emergence of industrial units, offices & peripheral large-scale housing development in the surrounding regions. As a result, the traffic flow is has increased leading to serious traffic congestion on the city roads.

The public transport in the city is provided by Ahmedabad Municipal Transport Services (AMTS) since many decades. The organization has its own fleet of buses, well-built infrastructure and staff like any State Road Transport organization. With the advent of JNNURM and the Government initiatives towards public transport, a BRTS system was envisaged for the city. The first successful BRTS in India was implemented in Ahmedabad. It was designed by CEPT and it got operational in October 2009. BRTS system is managed by another subsidiary Ahmedabad Janmarg Limited (AJL) created under Ahmedabad Municipal Corporation (AMC). The AMTS and AJL coordinate with each other such that their synergies would provide efficient bus transportation system in the city.

Contracting Model

All the contracting models in Ahmedabad are based on gross cost i.e. the revenue responsibility is taken by public authority. The rationale provided for this was the gross cost model empowers the public authority to demand efficient services from the service provider. The contracting model requires the private operator to bring in his own fleet while the facilities would be provided by public authority.

Key Findings

The findings are segregated under the following headings which is found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

17.7.1 Operations

Contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. Since this is a gross cost model, the clauses need to be more through in monitoring the services offered by the operator

Revenue collection

The revenue collection is the responsibility of public authority in both the cases. AMTS is efficient in this area with its institutional capacity while AJL has the technological strength in collecting revenues.

Drivers

The BRTS contract has strong clauses for selection of driver. Under 4.1 (z) the drivers should periodically undergo appropriate tests conducted by AJL and should obtain Acceptance certificate to undertake operations. This was found to be a good clause in ensuring acceptable standard for staff by public authority.

Skill development program, compliance with Motor Vehicle Act, and trainings are mandated under clauses 24.1.6, 24.1.15 and 24.1.16 respectively.

Revenue leakage prevention

These clauses are not applicable in this context.

ITS monitoring
The ITS based monitoring is implemented in both the systems. However, clauses could have been there outlining the procedures of usage by control centre.

**Customer grievance**

Clause 15.2 of AMTS contract clearly outlines the mechanism for customer grievance while BRTS contract doesn’t have any such clauses.

**Pass Issuance**

These clauses are not applicable in this model.

**Branding**

The clauses about how branding of AMTS and AJL should be safeguarded are missing in both the contracts.

**17.7.2 Maintenance**

Maintenance becomes a key aspect that facilitates effect provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

**Depot maintenance**

The maintenance of depot is with service provider including utilities, and security under clause 4.2 e of Ahmedabad BRTS. The depot maintenance responsibility is not solely delegated to operator in the AMTS contract. The clauses are structured such that authority facilitates operator by its provisions.

**Fleet Maintenance**

The maintenance of fleet is with operator. The mandatory documents for fleet maintenance under both the contracts are defined. A monthly report is mandated by AMTS while the AJL’s contract mandates road worthiness certificate every quarter.

**Security**

The security at Bus Depot, Bus stops and Bus terminals is the responsibility of private player. Public authority has the support of traffic and police Department. It is in a better position to arrange for security and this would help multiple operators to provide uninterrupted services.

**17.7.3 Asset Creation**

Asset creation is the responsibility of the public authority in both the cases. The detailed clauses are detailed out as follows.

**Bus Depot**

Bus depot is important for provision of efficient maintenance of the fleet and provision of services by the operator in compliance with the expected benchmarks. Bus depot design and location also affects the maintenance cost and other operating costs of the private player. It has direct influence on the costs incurred in operations. The AMTS contract includes provision of depot in conditions precedent. The AJL doesn’t promise depot under the contract. It is given that it would be provided on “as is where is basis”. Given the importance of the depot, the commitment as well as design parameters may have been specified.

**17.7.4 Procurement of Fleet**

The procurement of fleet is the responsibility of private operator. The fleet choice and procurement has direct effects on the quality of service available for public authority.

**Choice of design, manufacturer, terms and conditions for manufacturer**

The technical specifications are outlined in the contract. The conditions precedent and fleet deployment plans are also included in both the contracts.

**Permit approvals**
While AJL delegates the entire responsibility to operator, AMTS clearly outlines the sharing of responsibility amongst the operator and public authority. Such support would streamline the process of deployment of fleet.

**Fleet size planning**

The fleet planning is clearly mentioned in both the contracts. The way the deployment of fleet should be done is mentioned under clause 7 of AMTS contract and AJL contract has it under schedule 2.

### 17.7.5 Length of contract

The contract is for six years for AMTS and seven years for AJL. There is no provision for extension of contract which is based on mechanism of performance measurement. There is also no clause that gives weightage to existing operators in case of retendering / tendering of new routes based on their performance.

### 17.7.6 Performance Monitoring Mechanism

The performance monitoring framework is defined in both the contracts. While the schedules give out the cases of default, this is not a robust framework that facilitates effective provision of services.

**Existing Indicators**

The current indicators cover the various operating parameters and service parameters. The two important parameters - timeliness and cleanliness is taken care. However detailed mechanism or procedures for measurement were not found. There was also no classification of monitoring indicators on the basis of impact and there was no time given to rectify under the contract.

**Correlated conditions**

When a default occurs, it can be due to factors which are not within the scope of the operator. For example, if a bus is not clean due to unavailability of water at the Bus Depot, operator cannot be penalized as water supply is from Municipal Corporation. So, either a mechanism to address these kinds of issues should exist or certain clauses should be included in the contract considering the factors for default which are outside the scope of operators.

**Monitoring Mechanism**

The monitoring mechanism is not clearly defined in the contract though the indicators are laid down. As ITS is implemented, the procedures of monitoring each indicator using ITS should have been laid down as a schedule in the contract document.

### 17.7.7 Contract Termination

The termination mechanism defines default for both the parties. The BRTS contract has a process for deficiency removal under clause 13.2. So, a process is envisaged for smooth transition both in the event of termination as well as expiry of the contracts. In the event of termination due default of public authority, the contract also mitigates losses to private operator by providing business to him elsewhere as per clause 12.4. Failing which the public authority would buy the rolling stocks for which CAPEX is invested.

The termination clauses do not envisage such smooth transition of assets in the case of AMTS. However AMTS has huge in-house capacity to provide services even on termination of one operator.

**Balanced Arbitration**

While AJL has balanced arbitration defined in the contract, the arbitration mechanism laid down in AMTS contract is one sided favouring public authority.

### 17.7.8 Payment revision

Both the contracts have the revision of premiums linked to inflation. There are clear mechanisms defined for the payments and formulae given down for payment calculation.

**Overall Structuring of contract**
The AJL BRTS contract and AMTS contract were reviewed. The AMTS contract is one of the few contracts which have conditions precedent. However, more number of provisions could have been included. The contracts have well defined mechanisms for issues generally related to city bus transportation systems. The obligations of service provider and authority are defined in both the contracts. Also, there is performance monitoring frameworks for ensuring quality of service. However, more detailed monitoring frameworks and procedures could have been laid down for the operators to ensure good quality service. While the indicators cover the general services, there may be detailed monitoring indicators for health of the fleet, incident management, driver behaviour etc. Incentives for long term performance were also not found as part of this contract. Except for these few inclusions, both the contracts are comprehensively well structured.

---

**Review of City Bus Private Operations in Bhopal**

**Context**

Bhopal is the capital and second largest city in the state of Madhya Pradesh. The city, with time, has been transforming to a multifunctional regional growth centre. Being one of the nerve centres of socio-political and economic activities the primacy of city in the state shall remain forever. The main public transport system in the city is Semi-Low floor buses run by the Bhopal City Link Limited (BCLL). In 2009 around 40% of motorized trips were being performed by Public Transport (PT) system and it is expected that share of PT will increase in the future. Currently, the quantum of PT trips is more than 7 lakhs. To cater to such a high demand, an organized public transport system is to be expanded up to each area of the Bhopal city. The Present Operational Bus services, through a special purpose vehicle (SPV) created. There are currently 150 no. of buses operating under BCLL through the private Operator on 8 routes (Trunk and Standard routes) in the city catering to the needs of more than one lakh passengers every day by maintaining the required frequencies.

**Contracting Model**

BCLL has adopted a net-cost based Public-Private Partnership (PPP) operational model with the BCLL providing the basic infrastructure and the fleet. The private player is responsible for operation and maintenance. Some of the key responsibilities are shared as follows:

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus shelters)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Fleet</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Staff (Drivers and Operational)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Conductors / Fare collection</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

**Key Findings**

The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

**17.7.9 Operations**

The contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. Since this is a net cost model, the clauses need to be more supportive to the operator as he bears greater risk. However, our observations found some areas of improvement, which would be detailed out subsequently.

**Revenue collection**

In Bhopal, the revenue is collected through i. Fare box ii. Advertisements iii. Passes
Fare-box revenue is collected by Operators using ETVMs. ETVMs are used to enforce charging the exact fare from the passengers. The contract defines the specifications of ETVMs thoroughly with a schedule. The collection methodology is reasonably robust.

Only 50% of Advertisement revenue is shared with the operator. The rationale behind this percentage share is not clear. In Bhopal, the area used on the fleet for advertising is also found to be not utilized completely. Since, advertisements are also a major source of revenue for the operators, and this being a net cost model, this responsibility could have been left to operators.

Pass revenue is currently being divided based on the size of fleet operated by each operator. Pro-rata division of revenue based on a static parameter like size of fleet is not justifiable. A more dynamic parameter like passenger trips can be used as technology now facilitates such data collection. Such method would lead to equitable distribution of pass revenue amongst the operators and it would also encourage them to support issue of passes.

Under this contract, the time frame for payments from BCLL to operator is not defined in the contract. With reference to Clause 2.1 to 2.7, there is a time limit given to every payment made by operator but not for public authority. Clause 2.6 states “BCLL would share 50% of the receipts from advertisement on buses and 80% of the revenue received from pass with the operator.” At operational level, this would have effect the cash flow cycle of the operator.

Drivers

The drivers are provided by the operator but there are no specific trainings defined for them from BCLL under the contract.

Revenue leakage prevention

The team responsible for inspecting revenue leakage is provided by the operator. But they do not have enforcement power on the defaulting passengers. Schedule -10 refers to passenger defaults under Point 5. This does not impose penalties in case of default. It just states “A passenger shall be charged the prescribed fare from point of origin to the where he/she is found ticketless”. This clause doesn’t safeguard the operator from possible revenue leakages. For the revenue leakage prevention team to be effective, it should be formed by personnel from public authority who have enforcement rights.

ITS monitoring

Though the contract clearly did not lay the procedures to be implemented using ITS for monitoring, it did mention that there would be ITS based procedures developed in future and the private operator is required to comply with the same. During our interactions at Bhopal, it was found that ITS is effectively being used for monitoring. However, complete dependence of public authority on IT for imposition of every penalty is not fair. A standard procedure should be laid to penalize only in justifiable cases.

Customer grievance

The contract states clearly that customer grievance mechanism should be devised out by the operator. A service standard is also given in Schedule 9 where the expected number of complaints per 1000 trips is less than 2.

Pass Issuance

The pass issuing responsibility is handled by BCLL currently. However, the current contract doesn’t incentivize operator to encourage passes. So, the distribution of pass revenue can be based on dynamic data like actual usage of user or through introduction of route passes.

Branding

The responsibility of branding is with private operator as per the contract. However, when there are multiple private players, at least the design and copywriting should have been taken up by BCLL. This is required to maintain the uniformity of brand.
17.7.10 Maintenance

Maintenance becomes a key aspect that facilitates efficient provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

Depot maintenance

While Clause 9.2 states that Operator needs to share depot with other occupants, the maintenance of depot is with operator only as per Clause 9.7. While this is contradictory, depot maintenance can be taken up by BCLL for other reasons. Utilities like water and electricity are provided by the local Municipal Corporation which is the parent organization of BCLL. So, arrangement of these provisions can be done by BCLL more effectively and such maintenance can also empower BCLL to monitor the shared facility and ensure coordination amongst various operators sharing the asset. This will also help operators focus on maintenance on other important components like fleet, store etc.

Fleet Maintenance

The maintenance of fleet is with operator. The contract didn’t lay down clear maintenance parameters for the fleet. Since the fleet is owned by BCLL, clear parameters for fleet maintenance could have been included as a schedule in the contract.

Mechanics

Mechanics for regular minor repairs are brought by operators. However, for major repairs, the repairs from manufacturers are required. The contract doesn’t define the case of non-availability of such mechanics. As fleet is procured by BCLL and fleet utilization is a monitoring parameter, there could have been a clause stating the scope of repairs under operators.

Store Maintenance

There are no clauses regarding the maintenance of stock cover for operators. The stock cover is important as the spares will affect the longevity of the fleet. Required stock cover could be included as a schedule in the contract.

Bus shelter

The responsibility of bus shelter maintenance is not defined anywhere in the contract.

Bus corridor

The responsibility of bus corridor maintenance is not defined anywhere in the contract.

Security

The security at Bus Depot, Bus stops and Bus terminals is the responsibility of private player as per Clause 9.6. Public authority has the support of traffic and police Department. It is in a better position to arrange for security and this would help multiple operators to provide uninterrupted services. There are reports of theft of accessories of bus fleet at bus stations in Bhopal from private operators. To mitigate these kinds of unwanted damage to the system, BCLL could have brought security under its scope.

17.7.11 Asset Creation

Clause 7.2, point (v) refers to responsibility of BCLL in asset creation. BCLL is required to provide Bus depot, Bus terminals and bus shelters for the operators to provide services.

Bus Depot

Bus depot is important for provision of efficient maintenance of the fleet and provision of services by the operator in compliance with the expected benchmarks. Bus depot design and location also affects the maintenance cost and other operating costs of the private player. It has direct influence on the costs incurred in operations. Some of parameters are discussed below to illustrate the importance of depot.

- Dead Kilometre: The distance of depot from the last bus stop is the dead kilometre. Here operators spend on fuel without any generation of revenue. The maximum dead kilometre needs
to be mentioned in the contract. This contract doesn’t define the maximum dead kilometre or the compensation it would pay to the operator in the case where the depot location is beyond certain dead kilometres.

- Capacity: There are a maximum number of buses that can be maintained in a given time frame for a given size of depot. The space provided for a given fleet size is not given in the contract.
- Implementation plan: The timeframe within which depots would be arranged by BCLL is not given in the contract. This should be clearly defined.
- Contingency plan: The compensation in the case of failure of BCLL in the provision of depot and alternate arrangements are not given in the contract. Including them would safeguard the operator and help him in providing uninterrupted services.

A standard depot design that BCLL envisages to provide to operators could have been included as a schedule in the contract.

**Bus corridor and Bus Stops**

These components affect the revenue of the private operators directly. There is no clause that defines the timeframe within which BCLL would provide these to the operator. Also, there is no mechanism/compensation defined in the case of failure of BCLL to provide the same. This is very important in this contract as Net cost model is followed where the onus of revenue risk is on the operator.

**17.7.12 Procurement of Fleet**

The procurement of fleet is the responsibility of BCLL as per the Clause 7.2 point (i). The fleet choice and procurement has direct effects on the costs incurred and revenue collected.

**Choice of design, manufacturer, terms and conditions for manufacturer**

The technical specifications are clearly outlined in Schedule 4 and Schedule 5 of the contract. However, the contract doesn’t mention the case of delay in delivery of fleet or lack of availability of spare parts from manufacturer. This being a Net cost model, operator revenue is directly affected by the unavailability of fleet. Escalation of spare part costs would affect the maintenance costs. So there should be a strict terms and conditions defined for manufacturer by BCLL. Also, VGF clauses for the cases defined above should have been included in the contract.

**Permit approvals**

BCLL clearly undertakes the responsibility of obtaining Bus Permits and Applicable clearances from the transport Department under clause 7.2 point (iv). This is important for the operators to provide uninterrupted services.

**Ownership**

The ownership of the fleet is with BCLL and it is logically valid as BCLL is procuring the fleet.

**Fleet size planning**

There is no fleet size planning defined in this contract. The mechanism of fleet planning could have been defined so that operators would be prepared to scale up their operations accordingly. Clause 8.6 states that “If change in routes or schedule of operation warrants additional buses, operators should bear the additional costs of procurement”. This is not justified as operators may have to incur unforeseen CAPEX costs. However, a provision for adjustment is provided in Route Authorization Fee. If the operator may lack the financial muscle at the time of procurement, the service levels would come down. So, BCLL could have taken up the procurement by itself.

**Insurance**

The ownership of fleet is under BCLL. Operators insure the fleet. In case of damages, BCLL receives the payment from insurance companies. There should be a clause in the contract which defines the timeframe within which BCLL transfers the insurance claims to the operator.

**Back up fleet**
The size of back up fleet to be maintained by the operator is not defined in the contract clearly. Fleet utilization is given as a service standard in Schedule 9 as 90%. However, the minimum number of back up fleet that would be provided by BCLL is not given clearly in the contract.

17.7.13 Financing arrangement

The payments to be made by the operator for this contract are i. Upfront fees ii. Performance Guarantee iii. Route Authorization fees

Clauses are clearly defined on how Upfront fees and Performance guarantee would be given back based on the performance of the operator during the length of the contract.

There are also clearly defined clauses for route authorization fees in case of alterations.

Though the contract doesn't offer any direct financing support from BCLL, it gives a provision to offer the fleet for hypothecation.

17.7.14 Length of contract

The contract is for eight years. This is for both low floor AC BRTS buses and semi-low floor Non-AC City buses. The rationale for the length defined in the contract is not available. There is no provision for extension of contract which is based on mechanism of performance measurement. There is also no clause that gives weightage to existing operators in case of retendering / tendering of new routes based on their performance.

17.7.15 Performance Monitoring Mechanism

The performance monitoring framework is defined in Schedule 9 & 10 of the contract. While the schedules give out the cases of default, this is not a robust framework that facilitates effective provision of services.

Existing Indicators

The current indicators cover the various operating parameters and service parameters. The two important parameters - timeliness and cleanliness is taken care of under Schedule 10. However a detailed schedule defining the maintenance parameters could have been included in the contract for proper fleet maintenance.

Problem areas

The one key problem in this penalty framework is that under Clause 11.3 point iii, the operators first have to pay the penalty and then BCLL would reimburse if finds that a penalty imposition in any case is unjustifiable. Rather the mechanism should be such that first it should seek explanation for a default and then impose penalty if prevention of default is within the scope of the operator.

Penalty Mechanism

There is a clear penalty mechanism defined under this contract under Clause 11.

Reward Mechanism

There is no reward mechanism defined under this contract. Including it would incentivize the operators for provision of effective services.

Correlated conditions

When a default occurs, it can be due to factors which are not within the scope of the operator. For example, if a bus is not clean due to unavailability of water at the Bus Depot, operator cannot be penalized as water supply is from Municipal Corporation. So, either a mechanism to address these kinds of issues should exist or certain clauses should be included in the contract considering the factors for default which are outside the scope of operators.

Monitoring Mechanism

The monitoring mechanism is not clearly defined in the contract though the indicators are laid down. As ITS is implemented, the procedures of monitoring each indicator using ITS should have been laid down as a schedule in the contract document.
Also the current performance monitoring framework covers the obligations of only the operator. It should include the monitoring parameters for the obligations of public authority also and there should be a mechanism to address the issues of default by public authority obligations for private operators.

17.7.16 Contract Termination

The contract termination currently occurs in two conditions – Force Majeure and Material Breach.

Both the cases are clearly defined in the contract and the detailed clauses under each case are also given. There is also an equitable profit / loss sharing in case of termination of services is laid down in the contract. The payment of upfront fee in various cases is clearly given in Clause 14.3. There material breach definition is also comprehensively discussed under Clause 15 with clearly defined time frames for remedy. Clause 16.4 envisaged a three month contingency plan in case of termination of contract for uninterrupted City bus services. As public transport is the lifeline of a city, these clauses become very important in the contract and they are well defined in case of Bhopal’s contract agreement. It is very difficult for operator to just terminate the services without proper transition. This is a key takeaway from this contract.

17.7.17 Revenue

This is a net cost model and revenue risk is with the private operator. There can be many factors that affect the collection which is envisaged at the time of signing the contract. Public authority should strive to mitigate this risk so that operators can provide efficient services.

Some of the aspects are as covered below:

Route and Frequency planning

The route plans have to be approved by Transport Department. However, a mechanism can be devised by SPV which streamlines the approval process and the SPV should be empowered to change frequency or alter routes more frequently based on ITS data and inputs from the operator. Currently, the contract defines this planning on a yearly basis, and at least frequency alteration can be based on a monthly basis. This contract however lays down clear mechanisms for planning routes and frequency under Clause 8.

VGF Clauses in case of Unforeseen Losses

VGF clauses should be included in cases of losses due to unforeseen causes like delay in delivery of fleet, route alteration / blockage due to sewage works etc., emergence of alternate modes of transport etc.

Clause 8.1 promises exclusivity of right to operate. BCLL should ensure that this is implemented at ground level or can at least measure the loss of ridership and provide VGF to the private operators.

Fare revision

Though a formula is given in the contract for fare revision, this is not implemented often due to various factors. So, when the promised formula cannot be implemented, a clause should be included about what would be done in those cases of lost revenue. This would safeguard operators for revenue losses within the scope of BCLL.

Alternate sources of Revenue

BCLL is currently generating revenue only from advertisements. There are various alternate methods of generating revenue like parking fees, property taxes etc. These can be leveraged to provide VGF to operators in the above mentioned cases and also procure fleet in case of excess demand.

BCLL CEO also mentioned that it is getting difficult to find private operators and these kind of risk mitigation clauses will encourage operators to come forward and offer their services.

Overall Structuring of contract

The overall structure of the contract from bidding process, qualification criteria to division of roles and responsibilities is very comprehensive and well defined. However few areas need improvements. They are listed as following:
i. Enforcement of obligations of BCLL
ii. Design of bus transport system viz. depots, terminals and bus shelters in a schedule
iii. Well defined fleet maintenance parameters
iv. Clearly procedures for monitoring of various indicators chosen
v. Mechanism for handling causes beyond scope of operators that can lead to default
vi. VGF clauses that mitigate the unforeseen losses to private operators
vii. Incentive clauses for operators to perform both in short term and long term
viii. Rationale behind certain parameters like
   a. Length of contract
   b. Choice of advertising area on the assets
   c. Division of advertising revenue, pass revenue
ix. Well defined time frames for obligations of public authority
x. Contingency plans in case of delay in promised provisions.

Review of Delhi

Context

Being the capital city, Delhi faces major challenges in implementing urban transport solutions for its large population base. Though Delhi has a multi modal transport system, bus services are still the lifeline for mass transit, transporting thousands of city citizens on daily basis. Over the years, increasing economic opportunities have led to high inward migration levels, with the effect of increasing usage of private motor vehicles, thus leading to problems of congestion and pollution. In 2011, there were 7.2 million\textsuperscript{33} vehicles in Delhi. Though the buses, with a larger share, continue to be the primary mode of transport for majority of people, demand for it will continue to fall as rising income levels allow more and more people to opt for private motorized vehicles. To arrest this decline and to encourage people to shift to buses, Delhi Transport Corporation intended to provide safe, reliable, comfortable and well integrated bus system. Bus services in Delhi were provided by private stage carriage operators (PSCs), Delhi Transport Corporation (DTC) and the Delhi Metro Rail Corporation (feeder buses). Earlier attempts of a fully privatized system failed to deliver a comprehensive, integrated solution to the transport problem since a combination of high cost DTC operations and selectively operating private stage carriage operators running on profitable routes meant that almost half of Delhi's registered bus routes were not being operated at all. There was also an operational disparity with respect to peak & off-peak hour operations leading to poor services and over-crowding.

In view of all the stated problems, the Govt. of NCT of Delhi decided to revamp the bus system through a scheme to corporatize Private Stage Carriage operation of buses in Delhi and appointed DIMTS as Integrated Mechanism for the Private stage carriage buses corporatization scheme. DIMTS worked on revamping the entire existing structure and re-grouped the 657 routes of Delhi into 17 clusters using digital models. It was decided that each cluster will be serviced by a private entity and the DTC.

Under the privatization model, private entities were awarded clusters through a competitive bidding process for a period of 10 years. Each cluster consisted of suitable bunch of routes such that competing routes did not overlap between private operators. All operators were required to provide a scheduled bus service based on Unified Time Table. DIMTS conducted qualification process in 2008 for Cluster 1 through competitive bidding process for selection of private players. The evaluation criteria for selection comprised a mix of operational experience and financial capability aspects. Apart from the evaluation based criteria, bid criteria was also defined as a per kilometre/ passenger

\textsuperscript{33}India Stats
kilometre cost payable to the operators by the concession manager from off-board revenue (generated from off board tickets, advertising revenue and operational penalties).

**Contracting Model**

The contract model is based on a gross cost where DoT is taking revenue risk. This model has DIMTS as an Integrated Mechanism agency which monitors the operator. This way the management costs are very high for DoT as found during our interaction with the stakeholders. Operators have to procure fleet. The findings in this contract are presented as follows.

**Key Findings**

The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

**17.7.18 Operations**

Contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. Since this is a gross cost model, the clauses need to be more through in monitoring the services offered by the operator. Delhi cluster contract has an extensive monitoring framework and it offered many learnings.

*Revenu collection*

The revenue collection is managed by DIMTS. ETVMs are used and the ticketing data is used for route planning and analysis by DIMTS.

*Drivers*

Article 12 in this contract has detailed selection criteria for drivers. It also mandates the operator to provide good working facilities for drivers and other staff. This will ensure good quality service. Very detailed specifications are also given out in Annexure A of Schedule 3.

*Revenue leakage prevention*

These clauses are not applicable in this context.

*ITS monitoring*

The ITS based monitoring is implemented with a full-fledged computer centre at DIMTS.

*Customer grievance*

The customer grievance addressal is covered under penalty/ reward framework designed of the contract.

*Pass Issuance*

These clauses are not applicable in this model.

*Branding*

The safeguard clauses for branding of DoT were carefully drafted in clause 7.2.2 (t) and (u) where the operator needs to display the “Delhi Transit” logo of DoT.

**17.7.19 Maintenance**

Maintenance becomes a key aspect that facilitates effect provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clear define roles and responsibilities of each component for efficient provision of services.

*Depot maintenance*

The maintenance of depot is with the operator but detail on provisions available is given out in the contract clearly.
Fleet Maintenance

The maintenance of fleet is with operator. Detailed templates were included in the contract about daily maintenance in Annexures D, E and H of Schedule 3. Such detailed templates would set in standard procedures for the operator to follow for regular maintenance.

Security

The security is the responsibility of the operator.

17.7.20 Asset Creation

Asset creation is the responsibility of the public authority. The detailed clauses are detailed out as follows.

Bus Depot

Bus depot is important for provision of efficient maintenance of the fleet and provision of services by the operator in compliance with the expected benchmarks. Bus depot design and location also affects the maintenance cost and other operating costs of the private player. It has direct influence on the costs incurred in operations. Clear details were provided about the provisions at depot, location of depot in Schedule-9 of the contract. It is very important to include such details in the contract so that operator would be aware of what is provided and what is to be arranged for and accordingly calculate his costs.

Procurement of Fleet

The procurement of fleet is the responsibility of private operator. The fleet choice and procurement has direct effects on the quality of service available for public authority.

Choice of design, manufacturer, terms and conditions for manufacturer

The technical specifications are outlined in complete detail in the contract.

Permit approvals

Clause 5.1 (d) offers support from DoT to private operator in obtaining permit approvals from STA.

Fleet size planning

The fleet planning is clearly mentioned in both the contracts in schedule 6 of the contract.

17.7.21 Length of contract

The length of contract is for ten years. It can be extended by 2 more years at the discretion of DoT.

17.7.22 Performance Monitoring Mechanism

The performance monitoring framework is defined in extensive detail in the contract. The framework not only includes a whole lot of indicators but also the mechanisms of monitoring and methodology of performance measurement.

Existing Indicators

The indicators cover almost all the aspects of the services provided by the operator. Care was taken to make the indicators quantitative. For example, for visible dents, the length was given to qualify as an infraction. Also, it was the only contract among the reviewed cities to classify the indicators on the basis of impact and penalize accordingly.

Correlated conditions

This contract also has conditions under which penalties would be exempted. For example, Annexure I give conditions under which operating kilometres are not deducted.

Monitoring Mechanism

The mechanism of monitoring is given out clearly in this contract. The procedure of monitoring for each set of indicators is given out in schedule 3. It ensures transparency.
Penalty/ Reward Mechanism

In this contract document, the penalty and rewards are automatically calculated using quantitative formulae. A cap is imposed on the contract for penalty and reward. It is important because imposing heavy penalty on the revenue of operator affects the quality of service.

17.7.23 Contract Termination

This contract has unique provisions in the termination mechanism. The lenders to the concessionaire are paid back the outstanding debt under termination. This kind of support would bring down the financing costs for the operator as the risk is mitigated by DoT in this way.

There is a safe transition mechanism under clause 17.5 (b) where all project assets, whether developed by operator or the DoT, would be transferred to DoT. This would ensure continued services.

Balanced Arbitration

As found in clause 22.2(b), the arbitration is not found to be balanced.

17.7.24 Payment revision

The revision of payments is clearly linked to inflation and each component is calculated in a very detailed manner.

17.7.25 Designated Account

This clause mandates DoT to maintain three months payment in an escrow account. This clause gives the operator the assurance that payments would be made.

17.7.26 Overall Structuring of contract

The contract has very detailed mechanisms with timeframes in each. There are also contingencies defined for many of the mechanisms in the contract. The extensive monitoring framework designed in this contract not only gives indicators like other contracts but also gives detailed mechanisms of monitoring. There is a substitution agreement included in the contract which brings down the financing costs for the operator as it assures the lenders investing in the project. Very clear detail in given in the contract in almost every Article of the contract.

Review of City Bus Private Operations in Indore

Context

The Indore Municipal Corporation has formed a Special Purpose Vehicle (SPV) i.e. Atal Indore City Transport Services Limited (AICTSL) to plan, operate, maintain and monitor city bus transport services in the city. AICTSL currently runs a fleet of 84 buses operated and maintained by private operators. AICTSL transports an average of 75,000 passengers on 24 routes daily. This city started city bus services in 2006 in record 56 days with a city bus operator under NCC model. These services are still under use and currently this service serves as feeder to BRTS. BRTS services started under GCC model contracted out for a fleet of 50 buses. The review of the contracts of the two models is presented as follows.

Contracting Model

Broadly the model adopted involved incorporation of private investments towards procurement of buses and their operations.

There are two kinds of contracts currently followed in Indore.

1. A Net cost model for City bus services

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Only Bus shelters)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

34Toolkit for PPP in urban transport for Maharashtra - ADB
### Function Allocation under PPP Structure for Private Services BRTS

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus shelters)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Infrastructure maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Fleet</td>
<td>Y (60%)</td>
<td>(40%)</td>
</tr>
<tr>
<td>Operations</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Staff (Drivers and Operational)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Conductors / Fare collection</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

### Key Findings

The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

#### 17.7.27 Operations

City bus Operations

The city bus operations model is a Net cost model. So, the contract should facilitate hassle free operations for the operators so that they can provide efficient services.

**BRTS**

The contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. This is a Gross Cost Model and clauses should be structured such that a thorough monitoring of services is there. However, safeguarding of operating costs is also important. The findings are further detailed as follows.

**Revenue collection**

The revenue collection is responsibility of private operators as per the contract. However, for the private conductors to charge the exact fare, Electronic vending machines are mandated as per the contract in Clause 2.

The revenue collection system for Indore BRTS is by Public authority. Since this is a gross cost model, revenue collection is not relevant to contract.

**Drivers**

For city bus operations, the drivers need to be arranged by the private operator but there is NO mention on the trainings required or qualification criterion in the contract.

For BRTS, the drivers are provided by the operator but there are specific trainings offered by AICTSL. The contract mandates arrangement of drivers by one month before the commencement of operations. However, the operations did not commence with full fleet envisaged. As a result, operators incur unnecessary staffing costs.

**Revenue leak age prevention**
There is no mention about squad team in City Bus services contract. AICTSL squads keep monitoring the issue of tickets in the BRTS system.

**ITS monitoring**

There is NO monitoring mechanism defined in the city bus service contract.

For BRTS system, contract clearly did not lay the procedures to be implemented using ITS for monitoring. Clause 7 point xiv requires the operator to establish its own control centre for monitoring the data copy in real time. Clear procedures linked to each performance indicator are not found in the contract.

**Customer grievance**

There is NO mention of Customer grievance procedure in city bus services contract.

In BRTS, the contract doesn't define any mechanism for customer grievances. However, during our interactions with AICTSL officials, customers can file complaints through various mechanisms directly with the SPV. Operators need not address them.

**Pass Issuance**

The SPV reserved the right to issue passes and 80% of pass revenue is shared with operator. The contract doesn't incentivize operator in any way to promote pass issuance.

This is Not Applicable in the case of BRTS as it follows a Gross Cost System.

**Branding**

There is no clause about branding of the services in the BRTS and City bus service contract. However, during our city visit the branding is found to be done by the AICTSL especially for its BRTS services.

**17.7.28 Maintenance**

Maintenance becomes a key aspect that facilitates effect provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

Under BRTS contract:

**Depot maintenance**

The responsibility of provision of basic utilities like water and electricity at depot is not defined in the contract. Clause 7.5 vi states the Depot facility should be shared by various BRTS operators. But the contract doesn’t explicitly state if SPV commits to provide these basic utilities necessary for the maintenance of the fleet.

**Fleet Maintenance**

The maintenance of fleet is with operator. Clause 7.7 defines fines for various parameters on Vehicles/fleet in every payment period. This is learning from this contract as the fleet is owned by SPV (though operator owns a significant stake) and the maintenance is given out to operator.

**Mechanics**

The mechanics are the responsibility of the operator. But manufacturer’s support is also required for the maintenance of the fleet. The BRTS contract clearly specifies the manufacturer for the fleet. Even though SPV has decided the manufacturer, there is NO clause mentioning a procedure for the defaults on maintenance of fleet by operator due to lack of timely support from manufacturer.

**Store Maintenance**

There are no clauses regarding the maintenance of stock cover for operators. The stock cover is important as the spares will affect the longevity of the fleet. Required stock cover is NOT included as a schedule in the contract. There is also NO mechanism for operators to report if there is a lack of supply in spares from the chosen manufacturer in the contract.

**Bus shelter**
Though there is no clause on bus shelters, it is implicit that AICTSL should provide for them failing which there would be loss in revenue to itself.

**Bus corridor**

Though there is no clause on bus corridor, it is implicit that AICTSL should provide for them failing which there would be loss in revenue to itself.

**Security**

The security at Bus Depot, Bus stops and Bus terminals is not defined anywhere in the contract. This is important as provision of security involves cost and without security the system would be vulnerable to thefts. Theft of accessories from the fleet would result in unnecessary replacement cost and fines on the operator.

Under City Bus service contract:

The city bus service contract does NOT have clauses on any of the above components except for Bus Shelter and parking space for the fleet. However there is NO clause stating any details or time frames on these provisions

### 17.7.29 Asset Creation

Under Gross Cost Contract, the only important component for the private operator is Bus Depot. Availability of bus depot has a direct effect on the maintenance costs of the operator. The other components listed down effects the ridership and thereby the revenue. So, they do not become important components of contract for the BRTS system.

**Bus Depot**

Bus depot design affects the operating cost of the private operator. In the case of Indore BRTS contract, as “Bus Kilometre” is defined from “depot to depot”, the location of depot has no effect. But the depot design would have the effect on the operating costs. Some of the parameters are illustrated as follows

- **Dead Kilometre**: Clause 7.3 point iv defines the operating kilometres in various cases. Dead kilometres become irrelevant as this clause clearly compensates operators for the same. Because of this clause, even the location of depot also becomes irrelevant to the operators.
  
- **Capacity**: There are a maximum number of buses that can be maintained in a given time frame for a given size of depot. The space provided for a given fleet size is not given in the contract. The private operator was unable to accept the fleet ready for delivery due to lack of parking space at the depot provided by AICTSL.
  
- **Implementation plan**: The time frame within which depots would be arranged by AICTSL is not given in the contract. Only a commitment was given without time line.
  
- **Contingency plan**: The compensation in the case of failure of AICTSL in the provision of depot and alternate arrangements are not given in the contract. Including them would safeguard the operator and help him in providing uninterrupted services.

A standard depot design that AICTSL can provide to operators is NOT found in the contract.

For city bus services, depot itself is NOT promised in the contract. Only parking space is mentioned.

**Bus corridor and Bus Stops**

These components are important for AICTSL only as the revenue get affected directly in case of delay in the construction due to loss in ridership.

The bus stops are important for city bus service contract as the revenue of the operators directly get affected if there are no proper bus shelters. The contract doesn’t give commitment from SPV regarding the construction of bus stops, their design or deadline for implementation. There is NO clause for providing any VGF also in case of failure from SPV to provide these.
17.7.30 Procurement of Fleet

The procurement of fleet is the responsibility of AICTSL in case of BRTS contract. In city bus services, the operator needs to procure the fleet.

Choice of design, manufacturer, terms and conditions for manufacturer

The model of the bus and the manufacturer are stated in Annexure 1 of the contract. This has established operator monopoly in Indore BRTS. As a result, the scale of operations was found to suffer significantly due to delay in delivery of fleet. The terms and conditions defined by SPV for manufacturer are not known. However, the bus system design was found to be compatible with the chosen model in the contract only. Hence, when the manufacturer was unable to deliver buses, the frequency of buses on the BRTS corridors was low. As a result, it affected ridership, public image and also it led to the usage of dedicated corridors by private vehicles. The key learning from Indore BRTS is that there should not be a supplier monopoly for the system.

Except for few technical specifications, there is NOT much emphasis on design or choice of manufacturer in City bus services contract

Permit approvals

Obtaining required permits from RTO is the responsibility of AICTSL in case of BRTS. But this is not mentioned in the contract anywhere explicitly.

For City bus services, support for obtaining the approvals is mentioned but the procedure of provision of support from SPV is NOT clear in the contract.

Ownership

The ownership of the fleet is with AICTSL throughout. The private operator pays “Adjustable Security Deposit” as per Clause 6.3 which is 40% of CAPEX incurred in fleet. Operator is entitled to get 40% of auctioned value of the fleet at the end of the term as defined in Clause 7.2 point vi.

The entire ownership of fleet is with the private operator.

Fleet size planning

No clauses are found with planning for fleet size in case of increase in demand. This is a contract for 40 buses. So, clauses indicating planning for future increase in fleet size due to increase in demand are NOT found.

For city bus services, the contract states six buses per route and gives right of refusal in case of additional requirement due to increase in demand. But if there is additional demand and two operators ply on same route under Net cost model, it would be dangerous as learnt from Blue line services of Delhi.

Insurance

The insurance premium should be paid by operators as per Clause 7.1 point xvi. The operators also need to insure for the whole of depot premises as per Clause 7.5 point ix. While the depot is a shared facility, a provision for sharing of common insurance policy amongst existing operators is NOT found in the contract.

There is NO clause regarding insurance in City Bus services contract.

Back up fleet

The size of back up fleet to be maintained by the operator is defined in the BRTS contract clearly but NO mention about this is found in City bus contract.

17.7.31 Financing arrangement

The payments to be made by the operator for BRTS contract are i. EMD ii. Performance Guarantee iii. Adjustable Security Deposit (CAPEX for fleet)

EMD and performance guarantee should be paid by the private operator as per the city bus contract
There is NO financing support offered by AICTSL for the operators in both the contracts.

17.7.32 Length of contract

The contracts are for five years. The contract is extendible for three years more if the performance of operator is found “satisfactory” as per Clause 7.2 in BRTS and two more years under Clause 3.2 in city bus services. However, a clear framework about how the performance would be measured is NOT found.

17.7.33 Performance Monitoring Mechanism

While there is NO performance monitoring mechanism for City Bus service contract, the BRTS contract has performance monitoring framework is defined in Clause 7.7. The following paragraphs on performance monitoring refers to BRTS contract only

Existing Indicators

The current indicators cover the various operating parameters and service parameters. The operating parameters are given in table 1 under clause 7.7 where defaults on vehicle are defined very clearly. The service parameters are also very clearly defined in table 2 of the same clause.

The learning from this clause is that it clearly stated that “AICTSL may add/delete/change/modify the parameters on which fines can be applied in consultation with Service Provider(s). At least 90 day prior notice shall be given to the service provider before such additional fines can be applied.” The requirement for change in indicators over time is envisaged in the contract.

Problem areas

There is no procedure defined under the contract where operator can provide an explanation for a particular default on which he is fined.

Penalty Mechanism

There parameters on which fines are levied are laid down under Clause 7.7. The supporting documents are also mandated by the contract for the levy of fines. The methodology of measurement of each indicator was not found in the contract.

Reward Mechanism

There is a very vague reward mechanism defined under Clause 7.6 point vi. There is a long term incentive for the operator for performing well as renewal Clause 7.2 is there. But a very clear reward mechanism is missing in this contract.

Correlated conditions

When a default occurs, it can be due to factors which are not within the scope of the operator. For example, if a bus is not clean due to unavailability of water at the Bus Depot, operator cannot be penalized as water supply is from Municipal Corporation. So, either a mechanism to address these kinds of issues should exist or certain clauses is NOT found in this contract.

Monitoring Mechanism

The monitoring mechanism is not clearly defined in the contract though the indicators are laid down. As ITS is implemented, the procedures of monitoring each indicator using ITS should have been laid down as a schedule in the contract document.

17.7.34 Contract Termination

There is NO clause on contract termination in City bus service contract.

Under BRTS, contract termination currently occurs in two conditions – Force Majeure and Event of Default.

Upon termination, the repayment of Security Deposit is nowhere stated in the contract. Clause 6.18 also doesn’t clearly state procedure for termination such that services are NOT interrupted upon termination of contract. Remedy process is not defined and also timelines within which transition should happen, residual payments would be made is also not there.
17.7.35 Revenue

City Bus Service

As this is a Net cost model, the revenue risk is with private operators and SPV should strive to safeguard their revenues.

BRTS

Though this is a gross cost model, the payment of premium is linked to size of the fleet indirectly. The premium is paid on the basis of “operating kilometre” and “minimum bus kilometre” is defined in the contract. So, as long as the operator doesn’t start operations of the entire fleet, he receives a lesser premium. Due to delay in delivery of fleet, the operator of Indore BRTS suffered losses. This gross cost model did NOT safeguard the operator from revenue risk. Due to establishment of vendor monopoly and other reasons, there are escalations in operating costs.

Some of the aspects related to revenue generation are listed below:

Planning, Design and Provision of Depot and other Infrastructure

The fleet size affects the premium of the operator under BRTS contract. Due to lack of space, the operator was unable to accept fleet ready for delivery. So, this underlines the importance of depot design being specified under the contract on various parameters of depot interlaid capacity, number of maintenance beds etc.

Under City Bus service contract, there is NO timeline promised from SPV regarding the bus shelters.

Route and Frequency planning

This responsibility is with SPV under both the contracts. However, as city bus services is a NCC model, operators would be affected by the route plan. A procedure for route planning or consultation with operators is NOT found in contract.

VGF Clauses in case of Unforeseen Losses

In BRTS, the staff required for entire fleet should be arranged by operator and trained before date of commencement of operations. When there is reduction in payment of premium as pointed above, there are NO clauses of VGF also for these unforeseen fixed costs for the operator.

In City bus services contract, there are NO VGF clauses that would compensate private operators for loss in revenues for any reasons that are under purview of SPV.

Fare revision

Fare revision is delinked with premium paid to private operators under this contract. Also a clear formula is given out linking payment of premium to Inflation and fuel prices. So, the contract gives a method to isolate private operators from revenue risks.

However, in city bus services, the contract gives SPV the completely right to decide fares. Fares are the main source of revenue for operators under NCC and the fare revision is NOT linked to any scientific formula under this contract.

Alternate sources of Revenue

Currently AICTSL is not depending on any alternate sources of revenue. It seeks grant from IMC for its losses.

Overall Structuring of contract

The BRTS contract is well drafted on certain key clauses and also there are pitfalls that affected the operations. The key takeaways are listed down as follows:

Pros:

i. The minimum assured kilometre is measured per month instead of year as in case of Surat. So, this ensures regular standard premium for the operator instead of a lump sum payment at the year end.
ii. There is an incentive for operators to perform in long run as renewal of contract is linked to performance under clause 7.2 point ii. But a clear procedure for measuring the performance is missing.

iii. Operating kilometres are very clearly defined under Clause 7.3 point iv. As a result the positioning of depots becomes irrelevant for the contract. The SPV also need not plan in advance for land etc.

iv. The contents of Operating plan are also clearly laid out under Clause 7.3 point ii.

v. Clause 7.4 is irrelevant in this case as it is a Gross cost model

vi. Clause 7.7 defines the mechanism for modification of monitoring parameters very well

Cons:

i. The bidding process is L1 and the qualification criteria are also NOT found to be very strong.

ii. The adjustable security deposit is a significant CAPEX paid by the operator. The repayment of the same is NOT defined anywhere in Clause 18 point b

iii. Vendor monopoly is clearly established due to mentioning of specific model from a specific manufacturer. There are multiple effects on the operations as a result as mentioned above

iv. The warranty of bus fleet is from date of purchase rather than date of delivery. So, by the time the fleet is delivered, a significant part of warranty is found to be expired. This is found to increase the operator's costs in turn.

v. The penalty framework does not provide a mechanism for operator to provide a justification for defaults under the contract

vi. The penalty framework also do NOT provide exemptions for defaults that would occur due to default by manufacturer

vii. The premium is linked to size of fleet and due to delay in delivery of fleet, there are losses incurred by operator. VGF clauses are also not there for these kinds of cases

viii. On termination, there are no proper mechanisms found for rectification, negotiation or transition.

The city bus contract is NOT structured thoroughly and many important clauses are NOT found in this contract. Clauses related to many important aspects like Performance Monitoring, Penalty/ Reward framework, Force majeure, Termination, Obligations of SPV, Negotiation Mechanism are NOT there. The bidding process is also not clear. Subjectivity exists in statements like “Any operator can be allotted more than one route depending upon its financial capabilities, net worth etc.”

---

**Review of City Bus Private Operations in Jaipur**

**Context**

The Jaipur city procured a bus fleet of 120 with JNNURM funding. It contracted those buses to private operator to operate and maintain. JCTSL committed to provide supporting infrastructure like depots etc. as per the contract. However, there were differences found between contract and ground realities. In the case of Jaipur, it was found that there was a significantly high ridership that overshoots the existing capacity of the fleet. And there was a lack of supporting infrastructure to maintain the fleet due to lack of funding support for the SPV to develop the infrastructure. However, this city offered interesting lessons like provision of fuel at subsidy through SPV etc. Key findings in detail are presented in the following paragraphs.

**Contracting Model**

JCTSL has contracted out the operations and maintenance of procured fleet under GCC model. The infrastructure is provided by JCTSL as per the contract. And fuel is also provided by JCTSL so that it can be procured subsidized up to 5%. A brief snapshot of the model is given in the table below:

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Key Findings

The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

17.7.36 Operations

The contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator.

Revenue collection

The revenue collection was the responsibility of the SPV under this contract. However, in this case, SPV outsourced revenue collection to agents who are incentivized on the basis of revenue generated per kilometre. This has led to conflict of interest between private operator and the agents appointed. So, there was continued tussle between the two. As a result, the agents’ contract was suspended.

Drivers

The hiring of drivers is the responsibility of operator. Clauses mandating proper medical fitness are given in the contract. Section V point 14 states the driver should not have cardiac problems, or diabetic or blood pressure or any other disease or illness or deficiency that compromises their capacity to drive safely.

The contract also reserves the right to dismiss drivers when their behaviour is found unacceptable. Trainings are mandated for operator’s staff throughout and Clause 5(xxxiv) mandates periodic certifications.

ITS monitoring

Though ITS monitoring was suggested in the contract, it is not implemented on ground. The control centre was not set up as envisaged in the contract. As a result, the operators pointed that it was getting difficult to verify penalties imposed on to them.

Customer grievance

Customer grievance redressal mechanism is clearly defined in Clause 5 (xxxv). The clauses are similar to Bhopal contract.

Branding

There are proper clauses defined in clause 5 (xxv) regarding the maintenance of brand JCTSL. The clauses are similar to Bhopal contract.

17.7.37 Maintenance

Maintenance becomes a key aspect that facilitates effect provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

Depot maintenance

The depot maintenance is completely with the operator under 8.5. The clauses do not offer any support from JCTSL for provision of any utilities like water or electricity for operator.

Fleet Maintenance
Clauses for submission of fleet maintenance certificates are not found under this contract. As the fleet is owned by JCTSL, they could have been there. However, the contract mandates that fleet should be handed over in proper condition with a minimum fuel efficiency specified in the Section V.

After Sales Support from Manufacturers

As the fleet is procured by the SPV, there was no mention about the quality of support that can be obtained from manufacturer's services or mechanisms / procedures for unavailability of the same.

Store Maintenance

There are no clauses regarding the maintenance of stock cover for operators. The stock cover is important as the spares will affect the longevity of the fleet. Required stock cover could be included as a schedule in the contract.

Security

The security at Bus Depot is with operators under clause 8.5. In Jaipur, the depot allotted to the operators is of insufficient capacity. As a result, the fleet doesn’t have parking space inside the depot. Due to lack of security, the fleet is vulnerable to thefts and operators are incurring heavy costs in security and damage costs.

17.7.38 Asset Creation

The SPV was to provide bus depots, computerized control centre under this contract. However, neither adequate depot facilities nor computerized monitoring centre was created on ground. As a result, operators faced losses in multiple ways as described below:

Bus Depot

The specifications with which a depot would be provided were not given in the contract. The depot that was currently provided has only one maintenance bed and the capacity of depot was only for 60 buses while the size of the fleet contracted was 120. As a result, the fleet is getting damaged and maintenance costs are also increasing for the operator. The design specifications for depot could have been there in the contract as a schedule.

17.7.39 Permit approvals

JCTSL undertakes to obtain permit approvals. However, they did not get them as found during our review. The implications of this were on the operator who was unable to obtain insurance claims as a result.

17.7.40 Fleet size planning

There is no fleet size planning defined in this contract. The mechanism of fleet planning could have been defined so that operators would be prepared to scale up their operations accordingly. Clause 6.2 states that “If change in routes or schedule of operation warrants additional buses, operators should bear the additional costs of procurement”. This is not justified at operators may have to incur unforeseen CAPEX costs. At least, a right to refuse could have been provided to the operator

17.7.41 Insurance

The operator was unable to receive claims as the permits were not obtained by JCTSL as committed in the contract.

Back up fleet

The size of back up fleet to be maintained by the operator is clearly given in the contract in schedule-1.

17.7.42 Length of contract

The contract is for seven years. The contract consists of some old buses and some new buses. Having same terms and conditions for the entire fleet is unjustifiable as operator also has to return the fleet with an expected fuel efficiency towards the end of the contract.
17.7.43 Performance Monitoring Mechanism

There is a comprehensive performance monitoring framework given in schedule 1 and schedule 2 of the contract. However, the contract doesn’t have the mechanism of monitoring. While IT based monitoring was envisaged in the contract, it was not implemented on ground. Several problems occurred and they are described as follows:

**Problem areas**

Due to lack of IT based performance monitoring, the operators had no ways to cross verify the data. As per clause 12.2 the fines should be imposed on monthly basis. However, it was not followed on ground and due to long duration and lack of proper data collection mechanism, operators pointed that there is no mechanism for them to cross check the penalties imposed.

**Reward Mechanism**

There is no reward mechanism defined under this contract. Including it would incentivize the operators for provision of effective services.

**Correlated conditions**

When a default occurs, it can be due to factors which are not within the scope of the operator. For example, if a bus is not clean due to unavailability of water at the Bus Depot, operator cannot be penalized as water supply is from Municipal Corporation. So, either a mechanism to address these kinds of issues should exist or certain clauses should be included in the contract considering the factors for default which are outside the scope of operators.

**Monitoring Mechanism**

The monitoring mechanism is not clearly defined in the contract though the indicators are laid down. Also the current performance monitoring framework covers the obligations of only the operator. It should include the monitoring parameters for the obligations of public authority also and there should be a mechanism to address the issues of default by public authority obligations for private operators.

17.7.44 Contract Termination

A detailed termination mechanism is clearly defined with a proper transition under clause 19.4. There is a detailed procedure for remedy and termination in this contract.

17.7.45 VGF Clauses in case of Unforeseen Losses

An interesting learning was derived from Jaipur. Here the fleet is grossly undersized to serve the needs of the public. As a result, the occupancy ratio of the fleet overshot and buses are getting damaged. There is no compensation under such cases. This being a GCC model, the revenues are limited for the operator while the damages due to these unforeseen losses are not covered in any clause under the contract.

**Overall Structuring of contract**

This contract is a thoroughly structured contract with strongly defined clauses. The various learnings and lessons are listed down as follows:

**Pros:**

1. The contract mandates RTO fitness certificate every year as per SEC V point 7. It ensures proper maintenance of the fleet.

2. There is a cap on total payments up to 15% of average of last 3-month revenue under SEC V point 11.

3. Very detailed clauses for the selection of drivers like “none of the drivers should have cardiac problems, diabetic, blood pressure or any disease” are given under SEC V point 14

4. The condition of fleet is measured towards the end of the contract on the basis of fuel efficiency as given under SEC V point 19. This results in proper maintenance of the fleet throughout the life of the fleet by the operator.
5. The responsibility of obtaining bus permits are taken up by JCTSL under clause 5 (xxiii).

6. Advertising space is clearly defined under clause 5(xxiv)

7. Under clause 5(xxxiv), periodic certifications are mandated for operator’s staff by the SPV. It results in proper training for the staff on a repeated basis by the operator.

8. With clause 5(xxxv)- a clearly defined customer grievance mechanism is there in the contract.

9. Under 12.2 (iii), mechanism of penalty is defined but explanation can be provided only after paying fine. It is specified for every month. However, on ground this is not implemented on a monthly basis.

10. Clause 13.4 clearly defines various records to be maintained by the operator under this contract.

11. Default is defined for both operator and SPV 18 in this contract.

12. Under clause 18.5, a consultation mechanism with a notice period for 90 days is defined for the contract. This provides adequate time for the defaulting party to remedy.

13. Clause 19.4 ensures continuation of services during termination

14. Clause 22.1 shows that the arbitration mechanism is balanced to both the parties in this contract.

15. Clause 31.5 gives a proper interest rate for any kind of delayed payment by either of the parties (SPV as well as the private operator).

Cons:
1. Though vandalism is not within the scope of the operator, the cost of damages for vandalism is imposed on the operator under SEC V point 17

2. Though insurance is mandated by the operator under Clause 5 xvi, it becomes void without permits approval as mentioned above.

3. While this is a gross cost contract, Clause 5 xxiv gives the operator the right to have advertising revenue right which is against the convention found in other contracts.

4. Clause 6.2 mandates that the operator should provide additional buses in case of increase in demand. However, it involves unforeseen CAPEX. The right to refuse was also not found in the contract.

5. Under clause 9.5, the responsibility of arranging for security is with operator. While the assets provided itself are insecure, then leaving the security responsibility onto operators is unjustifiable.

6. Clause 12.2 (iv) states that contract would be terminated for repeated default. But the number of repetitions is not found in the contract.

The key learning from the Jaipur city is that the contract doesn’t ensure proper safeguard mechanism for the events of default by public authority. Many important components of supporting infrastructure like adequate space at depot are not provided on ground. The contract doesn’t include conditions precedent also to mitigate losses incurred due to such cases.

**Review of City Bus Private Operations in Jalandhar**

**Context**

The city bus services in Jalandhar evolved with the establishment of SPV by name JCTSL in 2006. A paid up capital of approximately Rs. 10 million was invested in the ratio of 60:40 by Municipal Corporation, Jalandhar and Punjab Infrastructure Development Board, Punjab for establishing the infrastructure required for the bus transportation system like depots and bus shelters. Four private operators were awarded the contract where they procure the fleet and operate under net cost model. During the interaction with stakeholders at Jalandhar, it was found that bus services came to a halt as
the private operators were unable to ply the buses due to continued losses. The losses were attributed to improper route planning, heavy competition from unauthorized players and lack of support from the Govt. local bodies. A detailed analysis from contract perspective is presented as follows:

**Contracting Model**

JCTSL has adopted a net-cost based model. It provides basic infrastructure like depot and bus shelters. The private player is responsible for procuring fleet, operation and maintenance. Some of the key responsibilities are shared as follows:

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus shelters)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Fleet</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Staff (Drivers and Operational)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Conductors / Fare collection</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

**Key Findings**

The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

**17.7.46 Operations**

The contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. Since this is a net cost model, the clauses need to be more supportive to the operator as he bears greater risk. However, our observations found some areas of improvement, which would be detailed out subsequently.

**Revenue collection**

In Jalandhar, the revenue is collected through i. Fare box ii. Advertisements iii. Passes

Fare-box revenue is collected by Operators using ETVMs. ETVMs are used to enforce charging the exact fare from the passengers. The collection methodology is reasonably robust.

Only 60% of Advertisement revenue is shared with the operator. The rationale behind this percentage share is not clear. In Jalandhar, the advertising rights are with SPV. Since, advertisements are also a major source of revenue for the operators, and this being a net cost model, this responsibility could have been left to operators.

Pass revenue is currently being divided based on the size of kilometres operated by each operator.

Under this contract, the time frame for payments from JCTSL to operator is not defined in the contract. However, the time limit for payment by operator to SPV is clearly defined. At operational level, this would have effect the cash flow cycle of the operator.

**Drivers**

The drivers are provided by the operator but there are no specific trainings defined for them under the contract. The criteria for selection of drivers are also not found.

**Revenue leakage prevention**

There is no clause empowering the private operators to hire their squad teams for monitoring ticket defaults. Nor there is any support offered by SPV in the contract.

**ITS monitoring**

Though the contract clearly did not lay the procedures to be implemented using ITS for monitoring, it did mention that the fleet should be equipped with GPS. But, on ground there is no computerized
control centre and there is no ITS monitoring so far. So, mandating GPS equipment on operator under conditions precedent without having control centre in conditions precedent is unjustifiable.

Customer grievance
The contract states that customer grievance would be monitored but the detailed mechanism for customer grievance redressal was not found in the contract.

Pass Issuance
The pass issuing responsibility is handled by JCTSL currently and 80% of the pass revenue is divided among all the operators on a pro-rata basis based on the kilometres operated.

Branding
The responsibility of branding is not given anywhere in the contract. There were no clauses to not tamper with the JCTSL brand.

17.7.47 Maintenance
Maintenance becomes a key aspect that facilitates effect provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

Depot maintenance
The entire maintenance at depot is the responsibility of the operator only as per the contract.

Fleet Maintenance
The maintenance of fleet is with the operator. The contract mandates valid AMC/TMC all the time which ensures timely maintenance from the operators.

Bus shelter
The responsibility of bus shelter maintenance is not defined anywhere in the contract.

Security
As per clause 4.1 a (xv), the operator has to park the fleet at his own risk in the depot provided by the public authority. The authority could have committed a secure depot instead in the contract. Also, there is an imposition of penalty for not parking the fleet inside depot.

17.7.48 Asset Creation
Clause 4.2 (a) mandates the public authority to create the necessary infrastructure. However, there is no fixed timeframe set for the public authority to complete the obligation.

Bus Depot
Bus depot is important for provision of efficient maintenance of the fleet and provision of services by the operator in compliance with the expected benchmarks. Bus depot design and location also affects the maintenance cost and other operating costs of the private player. It has direct influence on the costs incurred in operations. However, there is no clause or schedule specifying the design parameter of depot to be provided is found.

Bus Stops
Bus stops affect the revenue of the private operators directly. There is no clause that defines the timeframe within which JCTSL would provide bus stops to the operator. Also, there is no mechanism / compensation defined in the case of failure of JCTSL to provide the same. This is very important in this contract as net cost model is followed where the onus of revenue risk is on the operators.

17.7.49 Procurement of Fleet
The procurement of fleet is the responsibility of the private operator. There is considerable flexibility provided for the operators to choose the model.

Permit approvals
JCTSL clearly undertakes the responsibility of obtaining Bus Permits and Applicable clearances from the transport Department under clause 2.2 (a) in conditions precedent. This is important for the operators to provide uninterrupted services.

**Fleet size planning**

There is no fleet size planning defined in this contract. However, in case of increase in demand, the existing operators are given the right to reject. Then only other operators are allowed to operate in order to meet the increased demand.

**Back up fleet**

There is no mention in the contract regarding the size of back up fleet to be maintained. However, there is a penalty for non-operation according to the route plan specified by the SPV.

17.7.50 **Financing arrangement**

The contract doesn’t offer any financing support from JCTSL.

17.7.51 **Length of contract**

The contract is for five years. The provision for extension is based on obtaining extension for route permits. There is also no clause that gives weightage to existing operators in case of retendering / tendering of new routes based on their performance.

17.7.52 **Performance Monitoring Mechanism**

The performance monitoring framework is defined Article VI. While the specific cases of default are given, this is not a robust framework that facilitates effective provision of services.

**Problem areas**

The mechanism of payment is not very clear and SPV can change the notice period for penalty at its discretion as per the contract. The SPV can directly adjust the penalty amount from advertising and pass revenue while no mechanism for operator to provide explanation for the penalties imposed.

**Reward Mechanism**

There is no reward mechanism defined under this contract. Including it would incentivize the operators for provision of effective services.

**Correlated conditions**

When a default occurs, it can be due to factors which are not within the scope of the operator. For example, if a bus is not clean due to unavailability of water at the Bus Depot, operator cannot be penalized as water supply is from Municipal Corporation. So, either a mechanism to address these kinds of issues should exist or certain clauses should be included in the contract considering the factors for default which are outside the scope of operators.

**Monitoring Mechanism**

The monitoring mechanism is not clearly defined in the contract though the indicators are laid down. On ground, there is no ITS based monitoring also although indicators were included for ITS monitoring in the contract.

17.7.53 **Contract Termination**

The contract termination clauses are defined well with a mechanism for remedy. But, the cure period is found to be too short (30 days). Also, there was no mechanism found for smooth transition to ensure uninterrupted services.

17.7.54 **Revenue**

This is a net cost model and revenue risk is with the private operator. There can be many factors that affect the collection which is envisaged at the time of signing the contract. Public authority should strive to mitigate this risk so that operators can provide efficient services.

Some of the aspects are as covered below:
17.7.55 Route and Frequency planning

The route and frequency is fixed by the public authority. And the contract leaves the planning completely at the discretion of public authority. This being a net cost contract, provisions should have been made for considering private operator’s input.

17.7.56 VGF Clauses in case of Unforeseen Losses

VGF clauses should be included in cases of losses due to unforeseen causes like route alteration / blockage due to sewage works etc., emergence of alternate modes of transport etc.

Though clauses 4.2 c safeguard the routes allocated to the operator to some extent, they do not promise exclusivity. Private operator in Jalandhar requested for stopping unauthorized transport in the city to mitigate their losses.

17.7.57 Fare revision

There is no formula given for the revision of fares. It is only revised as and when notified by the SPV.

17.7.58 Alternate sources of Revenue

JCTSL is currently generating revenue only from advertisements. Only 60% of revenue is shared with the operators and the rationale behind is not clear.

Overall Structuring of contract

The overall structure of the contract is found to have several learnings. While it has some clauses with good mechanisms, many one-sided clauses supporting only SPV are also found. The details are presented as follows:

Pros:

1. This contract has condition precedent for private operator and SPV. Such clauses under conditions precedent are required for providing proper services.
2. Clause 2.2 (a) of conditions precedent obligates SPV to obtain route permits for the fleet before commencement of the operations. Route permits are required to legally operate the fleet in the city.
3. Clause 2.2 (f) commits depot by public authority before commencement of operations. However, the design details of depot could have been included.
4. Clause 4.2 c (i) gives the existing operator right to qualify in case of increase in demand
5. Clause 4.2 c (ii) safeguards routes allocated to private operator.
6. Clause 4.2 e enables private operators to appoint one director on board of SPV. This is unique and such clauses helps to represent the pain areas of the service providers to SPV. It also ensures quick decisions are taken for efficient provision of services.
7. Clause 9.3 required private operators to submit periodic reports on O & M plan and report on incidents like accidents etc. This helps the public authority to evaluate performance of the operator at least partially in the absence of a computerized monitoring.
8. Clause 10.2 shows operator is at least partially compensated for the CAPEX invested by him under the cases of termination due to SPV’s default.

Cons:

1. Clause 2.1 (c) mandates GPS on the fleet when there is no computerized control centre under the same. Even though GPS enabled fleet is used currently, the equipment is not being used due to lack of a ITS monitoring centre.
2. Clause 3.1 shows that fares are not linked to inflation etc. It is at the completely at the discretion of SPV.
3. Only 60% of advertising revenue and 80% of pass revenue under clause 3.2. As this is a net cost model, the share of advertising revenue may be more.
4. As per clause 4.1a (i), the timing and frequency is completely at the discretion of SPV.
5. Clause 4.1a (w) mandates GPS to be functional even though there is no control centre.
6. While the advertising revenues are important for the private player more, the advertising rights are with SPV as per clause 4.1a(xiv)
7. Clause 4.1a (xv) leaves the entire risk of operations at depot on operator.
8. Clause 4.1b (i) shows that the route authorization fee is not linked to any index. It is fixed beforehand. Even the interest percentage is also fixed for the case of delays.
9. No training for drivers and staff mandated anywhere in the contract.
10. Clause 4.2 (a) doesn’t define a time frame for the public authority to complete asset creation
11. In Clause 6.1, even though several aspects of monitoring are covered, individual indicators are not detailed out clearly
12. In Clause 10.1, the cure period is very short. This being a public service, the cure period could have been longer
13. There is no transition mechanism given in the contract during termination

### Review of City Bus Private Operations in Ludhiana

#### Context
Ludhiana is a medium sized city with many manufacturing and textile industries. Though the scale of bus operations is small, it is essential for the city. LCBSL was created in 2007. However, the city transport got entangled in a whole gamut of issues that were legal, social, and environmental and market related. The initial hiccups started with the choice of design of fleet. Diesel based buses cannot run in this city due to litigation filed in honourable High Court. When CNG was made the choice, the problem was to find vendor in the market. After buses were procured with JNNURM fund, LCBSL went ahead with operations in the city by hiring the minimum staff required for operations and maintenance. Then the ambition of bringing synergy into the system through PPP model led LCBSL to find a large scale private operator for efficient provision of bus services in the city. This has created problems from the existing staff of LCBSL. Strikes were conducted by Driver Unions. Lack of support from the ULB to the SPV has prevented payment to the operator also. Without minimum financial payments from the ULB, the entire public bus operations in the city came to a halt. There was illegal bus service since many years in Ludhiana and they took a dominant position under the current circumstances exposing the public to unsafe services at high costs.

#### Contracting Model
LCBSL implemented a Gross Cost Model under which the operator was given the fleet for operations and maintenance. The fleet is procured by SPV with the help of JNNURM fund.

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus shelters)</td>
<td>Y</td>
<td>Y (Additional depot requirements beyond the committed space)</td>
</tr>
<tr>
<td>Infrastructure maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Fleet</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Staff (Drivers and Operational)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Conductors / Fare collection</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

### Key Findings
The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

#### 17.7.59 Operations
The contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. This is a Gross Cost
Model and clauses should be structured such that a thorough monitoring of services is there. However, safeguarding of operating costs is also important. The findings are further detailed as follows.

Revenue collection

The entire revenue collection is the responsibility of the LCBSL. The conductors are provided by the SPV and only they are authorized to collect the money. However the clause 4.15 is confusing in this regard which states operator should hire conductors.

Drivers

The drivers are provided by the operator and certain basic clauses are found in the contract for the appointment of driver. Trainings, Uniform and proper behaviour with public are mandatory for the hired drivers. This is important as they reflect the brand image of LCBSL in the face of the public.

Revenue leakage prevention

There is no clause that discusses about the revenue leakage prevention and it is not relevant also under this model.

ITS monitoring

There is NO IT monitoring procedure defined under this contract. However, the fleet should be compatible with ITS. The control centre also needs to be set up by the operator under clause 4.10. However, at Ludhiana, it is found that NO control centre was set up. Even though this is a GCC model, the monitoring centre was NOT found to be set up by the SPV.

Customer grievance

There is a clearly defined customer grievance mechanism defined in the contract clause 15.2.1.

Pass Issuance

This is Not Applicable in this contract.

Branding

Branding of the City Bus services is a responsibility not clearly delegated to any party as per this contract. Advertisement on fleet is also left to private operator. The advertising space is NOT defined in this contract. As a result, the LCBSL logo is also found to be covered with advertisements on some buses. Branding of the bus service is found to be neglected.

17.7.60 Maintenance

Maintenance becomes a key aspect that facilitates effect provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

Depot Maintenance

The depot maintenance is entirely with the private operator. Apart from the depot committed in the contract, additional requirements should be arranged for by the operator under clause 20. The problem is that bus kilometres are defined from depot to depot distance travelled by the fleet. So, SPV would incur unnecessary cost.

Fleet Maintenance

The fleet maintenance is with the operator. There is clear maintenance parameter in the contract. But the monitoring was found to be monthly basis. In other cities, it was found to be daily.

Mechanics

The fleet is procured by the SPV. The availability of service from manufacturer was NOT ensured by SPV under the contract.

Store Maintenance

There is NO stock cover required by operator to maintain as per the contract.
Bus shelter

The responsibility of bus shelter maintenance is not defined in the contract. As the revenue responsibility is with SPV, the maintenance of bus shelter is important for the public authority only as it affects the revenue.

Security

The responsibility of security is with operator as per the contract.

17.7.61 Asset Creation

The asset creation is important for the efficiency of the system. The fleet is owned by SPV. So, for proper services, revenue creation and longevity of the assets, SPV needs to take care of the supporting infrastructure.

Bus Depot

The bus depot is important for the fleet maintenance. The design and location of depot is important. The design is important as it affects the maintenance cost of the operator. The depot found in Ludhiana is in a very bad state and it lacks the basic infrastructure. The contract doesn’t give the design specifications of depot. So, it underlines the importance of depot design in the contract.

The location of depot affects the dead kilometres. The SPV pays for these dead kilometres. The existing depot is at 15kms from the city. This is resulting in a wastage of lot of fuel and costs associated with it.

Roads

As the technical specifications mandates low floor buses, this fleet is vulnerable to heavy damages if the roads are not proper. However NO clauses are found which promises proper roads from LCBSL so that the fleet maintained by the operator is NOT damaged. Penalties are levied on him for NO mistake of him. During our city visit to Ludhiana, the road stretch leading to depot is found to be in a very bad state. It damages any low floor bus very easily. The required support for SPV from the ULB is found to be missing. This is very essential for asset creation.

Bus Stops

These components are important for LCBSL only as the revenue get affected directly in case of delay in the construction due to loss in ridership. The design of bus shelters is also an important parameter in determining ridership. There is heavy unauthorized plying of buses, autos in the city of Ludhiana. Proper bus shelters are required for LCBSL to retain its ridership. It needs support from Municipal Corporation and also the traffic and transport department for safeguarding the ridership and retaining the same. While MC is required for creation of bus stops, other departments are required for enforcement on unauthorized vehicles and protection of public transport.

Procurement of Fleet

The procurement of fleet is the responsibility of SPV.

Choice of design, manufacturer, terms and conditions for manufacturer

The technical specifications are clearly outlined in Annexure A of the contract. But to the operator, the only relevance it serves is in estimating his operating costs as the SPV has already placed procurement orders.

Permit approvals

The permits related to vehicle is the responsibility of the operator while the route permit would be obtained by LCBSL under Clause 25.2.3

Clause 25.2.4 promises streamlining of approval process from RTA on best effort basis by LCBSL.

Ownership
The ownership of the fleet is with the SPV. However, the transfer of ownership towards the end of the contract at Rs 1000/- per bus and forcing the operator to procure it is there under this contract. As the scrap value of bus would be much higher, the rationale behind this clause is NOT clear.

**Fleet size planning**

There are clauses about fleet size planning. However the additional requirement in terms of infrastructure (bus depot for additional fleet) is NOT promised clearly under this contract.

**Insurance**

The ownership of fleet is with SPV. Operators insure the fleet. In case of damages, SPV receives the payment from insurance companies. But there is NO clause that defines this mechanism of payment of claims to private operator.

**Back up fleet**

The backup fleet is provided by SPV only. The Assured fleet availability is defined in the contract

**17.7.62 Financing arrangement**

The payments to be made by the operator for this contract are i. EMD ii. Performance Guarantee. The contract doesn’t offer any financing support from LCBSL to private operator. But the SPV offered to get tax exemptions if possible.

**17.7.63 Length of contract**

The contract is for nine years. The rationale for this is NOT clear in the contract. There is NO provision for increase in contract length. There is no incentive for operators to perform well till the end of the term.

**17.7.64 Performance Monitoring Mechanism**

The performance monitoring framework is defined in Annexure 1 of the contract.

*Existing Indicators*

The current indicators cover the various operating parameters and service parameters.

*Problem areas*

*The penalty mechanism is not thoroughly defined in this contract. As there is NO ITS monitoring, the penalties become more subjective.*

*Penalty Mechanism*

The mechanism of measurement linked to each indicator is NOT found in the contract.

*Reward Mechanism*

There is a reward mechanism found in this contract. There is incentive for the operator to outperform. Formulae are there in the contract but measurement of indicator again becomes subjective.

*Correlated conditions*

When a default occurs, it can be due to factors which are not within the scope of the operator. Such correlated conditions for exemption of penalties are NOT found under the contract.

*Monitoring Mechanism*

The monitoring mechanism is NOT defined in the contract though the indicators are laid down. The penalty framework doesn’t obligate public authority in the contract.

**17.7.65 Contract Termination**

The contract termination clauses are found to be drafted well in this contract. The transition mechanism is also NOT found in the contract during termination for provision of uninterrupted services. However, the remedy procedure and arbitration mechanism are well defined.
17.7.66 Revenue

This is a gross cost model and revenue risk is with the public authority. Public authority should generate revenue by exploiting all the avenues at its disposal and strive to mitigate unnecessary costs to operator.

Some of the aspects are as covered below:

Planning and Design

Bus shelters and their positioning affect the ridership. Public authority should plan well such that maximum possible ridership is received. The revenue per route is dwindling down for SPV in Ludhiana.

Route and Frequency planning

This responsibility is with SPV under the contract and it should be planned such that maximum revenue is generated.

17.7.67 VGF Clauses in case of Unforeseen Losses

As “Annual Assured Bus Kilometres” are laid down in the contract, there is no need for any VGF clauses. However, the minimum fleet assured for operator by COD is NOT found.

17.7.68 Fare revision

Fare revision is delinked with premium paid to private operators under this contract. It is indexed with fuel and WPI.

17.7.69 Alternate sources of Revenue

Advertising is the only alternate source and 100% of advertising revenue is with operator. This is found to be contradicting as SPV is taking revenue risk in this case.

Overall Structuring of contract

The entire contract has several learnings and takeaways. It is a comprehensive document covering various aspects on bus operations, division on roles and responsibilities and well defined mechanisms for various issues that arise during operations. The pros and cons of this contract are listed as follows:

Pros:

- Clause 4.2 mandates the operator to submit all the registration certificate and insurance cover within 30 days of delivery of fleet.
- The mechanism of rerouting is well defined as per clause 10.3
- Clause 15.2.1 defines a good customer grievance redressal system.
- Clause 18.5.5 gives a clear mechanism for bonus payments which is based on a formula of measurement.
- Clause 19.2 creates a tax exemption for the operator offering public transport within the city.
- Clause 21.4 even defines the pollutants to be monitored by the operator and authority from the fleet.
- Performance parameter type, appraisal period and mode is well defined in 22.1
- Clause 25.1.5 mandates the operator to obtain a certificate of inspection for the fleet from an authorized dealer / manufacturer which makes it easy for the public authority to ensure that the fleet is properly serviced annually.
- Clause 25.1.10 states a minimum time period and a reasonable time period for implementation of changes suggested by SPV by the operator. This kind of rational time framing is a good provision in the contract.
- Clause 25.1 is very comprehensive and well defined. It covered various roles and responsibilities of an operator. Some of the important aspects in bus operations like driver’s requirements, enforcing discipline on drivers, rejection of Union formation by staff, keeping a first aid box in the bus, regular understanding of bus manufacturer’s safety manuals etc. were well covered.
• Clause 25.2.3 mandates route license to be obtained by SPV. This is required under this model so that these licenses are not misused in case of early termination of the contract
• Clause 25.2 covers the responsibilities of the public authority well. It covers the entire obligations on the SPV to perform well. However, no penalty mechanism was found in case SPV fails to perform its obligations
• Clause 25.2.4 commits that SPV, on best effort basis, would endeavour to get the permits provided operator applies for them
• Clause 27 reimburses costs that would be incurred for damages done by Vandalism to operator. This is required as public transport esp. buses in India are vulnerable to such acts.
• Clause 28 c defines the “Aggregate Fines” and it limits it to 10 % cap on the payments made to operator. Point d states it would lead to termination if overshooting the 10 % cap for five consecutive periods. This is well structured as operators are spared of heavy fines and they are given a chance to improve their services without creating fund crunch.
• For the non-availability of fleet, the operator is charged based on Average Daily Revenue of the unavailable bus as per 28 e which is well defined as per contract.
• The change in penalty system is also well defined in clause 28 f
• Bus transfer cost is applicable only after seven years of operation as per 32.2.3. It will prevent the operator from misusing the transfer of ownership clause

The contract has many clauses with well-defined timeframes and mechanisms.

Cons:

• Clause 4.10 requires the operator to set up a fully equipped Control centre. This is a GCC contract and monitoring procedures are NOT found to be laid in advance. It the operator sets ups the control centre, then he has more access to the data required for monitoring. In reality, even the operator is NOT found to set up the CC at Ludhiana.
• Clause 4.14 leaves all the advertising revenue to operators. In a GCC, the SPV bears the revenue risk. So, it is found that SPV retains alternate sources of revenue in other cities unlike Ludhiana.
• Clause 4.15 requires operators to provide conductors also. The model has revenue collection responsibility with SPV. So, this is found to be contradictory.
• Imposing a cap on 10kg baggage may not be possible in reality which is mandated as per 12.1
• While 18.5.2 requires operator to maintain a minimum working capital, the public authority doesn’t have a clause like this.
• As SPV retains the right to decide routes and operator has to pay for plying busses outside the Municipality limits, a cap on kilometres that can be awarded outside the municipality limits was NOT found in clause 19.3
• Bus maintenance in clause 22.1 is checked monthly. It is generally found to be daily in most other cities
• Clause 24.2 transfers the buses at a minimal cost of Rs 1000/- to the operator at the end of the contract. The rationale of transferring the fleet at such minimal value is NOT clear. The reason why operator cannot refuse this is also NOT clear.

The contract is well structured with comprehensive clauses. But the penalty to public authority for failure to comply with the obligations of the contract is NOT found. The transition mechanism on termination is also NOT found for continuity of uninterrupted services.

The model has some basic shortcomings like the “transfer of fleet at a very low price to operator”, “complete advertising revenue to operator” etc. But the clause structuring is found to be strong and comprehensive.

---

**Review of City Bus Private Operations in Pune**

**Context**

Pune Metropolitan Region (PMR) consisting of Pune city and Pimpri-Chinchwad town is an important regional centre of the State of Maharashtra. Pune is among top 10 cities of India in terms of...
contribution to GDP and it is envisaged to become 5th largest city by 2030. The importance of Pune Region as an industrial centre has grown rapidly since the 1960s, with focus on manufacturing, glass, sugar, forging, automobile and IT industries. With rapid industrialization, there is rapid growth in population. Rural to urban drift and the immigration of people from other regions of India have occurred because of the employment opportunities created by rapid industrialization. It is estimated that about 50 percent of the population increase is on account of in-migration. Urban Transport will emerge as the critical lifeline supplementing the growth of the economy of PMR. A well-developed and planned transportation system will act as an integral facilitator to development of regional economic and social activity.

PMPML was formed in 2007 with the objective of being the primary public transport provider in the region. It carries over 11 lakh passengers per day with a fleet of approximately 1,300 buses in operations. PMPML operates over 330 routes across a network of 1,900 km of streets and more than 3,000 bus shelters in the PMR. In recent years, when the organization wanted to induct more fleet, it started using PPP as a quick mode to enhance its services. So, PMPML started using hire bus model for procuring services of private operators.

**Contracting Model**

Broadly the model adopted involved incorporation of private investments towards procurement of buses and their operations.

There are two kinds of contracts currently followed in Pune.

**A Gross cost model for Hire Buses**

The allocation of roles under the PPP structure for private services BRTS was as follows:

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus shelters)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Infrastructure maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Fleet</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Operations</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Staff (Drivers and Operational)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Conductors / Fare collection</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

**Key Findings**

The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

**17.7.70 Operations**

The contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. This is a **Gross Cost Model** and clauses should be structured such that a thorough monitoring of services is there. However, safeguarding of operating costs is also important. The findings are further detailed as follows.

**Revenue collection**

The entire revenue collection is the responsibility of the PMPML. The conductors are provided by the SPV and only they are authorized to collect the money.

**Drivers**
The drivers are provided by the operator and stringent clauses are found in the contract for the appointment of driver. Medical fitness, clean criminal record is mandatory for the hiring of the drivers. This is important as they reflect the brand image of PMPML in the face of the public.

**Revenue leakage prevention**

There is no clause that discusses about the revenue leakage prevention and it is not relevant also under this model.

**ITS monitoring**

There is NO IT monitoring procedure defined under this contract. However, the fleet should be compatible with ITS. So, PMPML is envisaging ITS based monitoring in future. But, there are NO clauses found that defines mechanism for change in monitoring procedures in future.

**Customer grievance**

There is no customer grievance mechanism defined in the contract. However, the drivers are supposed to behave well with public and conductors. Clauses are very strong on that aspect. Customer grievance is taken care by SPV itself directly.

**Pass Issuance**

This is Not Applicable in this contract.

**Branding**

Branding of the City Bus services is a responsibility not clearly delegated to any party as per this contract. As this is a gross cost contract, the branding of services to increase ridership should be done by SPV as it holds the revenue risk.

**17.7.71 Maintenance**

Maintenance becomes a key aspect that facilitates effecct provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

However in PMPML model, all the components of maintenance are outsourced to the private operator. The operating kilometre is only defined over the route length. So, it is the responsibility of the operator to maintain his fleet and comply with the specifications of the contract. Else, he would be penalized.

**Asset Creation**

The asset creation is important for the efficiency of the system. Under PMPML model, arranging for the bus depot is the responsibility of the private operator. So, PMPML is NOT responsible for the construction of the depot.

**Roads**

As the technical specifications mandates low floor buses, this fleet is vulnerable to heavy damages if the roads are not proper. However NO clauses are found which promises proper roads from PMPML so that the fleet brought in by the operator is NOT damaged and penalties are not levied on him for NO mistake of him.

**Bus corridor and Bus Stops**

These components are important for PMPML only as the revenue get affected directly in case of delay in the construction due to loss in ridership. The design of bus shelters is also an important parameter in determining ridership. So, the public authority should be careful in choosing the design of the system.

**17.7.72 Procurement of Fleet**

The procurement of fleet is the responsibility of private operator.

*Choice of design, manufacturer, terms and conditions for manufacturer*
The technical specifications are clearly outlined in Schedule A of the contract. They just adhere to MoUD JNNURM specifications. The COD is also well defined in this contract. However clause 33 is found to be stringent as obtaining large number of buses in 120 days may not be possible always due to manufacturer related delays. No mechanism for explanation is found in the contract.

Permit approvals
The permit related to vehicle is the responsibility of the operator while the route permit would be obtained by PMPML under Clause 12 point i.

Ownership
The ownership of the fleet is with the private operator. However, since the buses are procured exclusively for this design, there is no mention of what would be done to the fleet at the end of the contract.

Fleet size planning
There are NO clauses found about planning for increase in the size of the fleet

Insurance
The ownership of fleet is with private operator. Operators insure the fleet. In case of damages, private player receives the payment from insurance companies. So, the clauses are fine.

Back up fleet
The size of back up fleet to be maintained by the operator is defined in the contract clearly.

17.7.73 Financing arrangement
The payments to be made by the operator for this contract are i. EMD ii. Performance Guarantee
The contract doesn’t offer any direct financing support from PMPML to private operator for procurement of fleet. But this being a gross contract where premium received by operator is delinked from fare prices, operators can easily obtain loan due to assured cash flows in future.

The contract also states that PMPML would endeavour tax exemption under Clause 7 point xii. However, the commitment is NOT found under this clause.

17.7.74 Length of contract
The contract is for seven years. The rationale for this NOT clear in the contract. There is a provision for increase in contract length by 3 more years. However, the conditions under which the extension would happen is NOT clearly given out in the contract.

17.7.75 Performance Monitoring Mechanism
The performance monitoring framework is defined in Schedule C of the contract.

Existing Indicators
The current indicators cover the various operating parameters and service parameters. The two important parameters - timeliness and cleanliness is taken care of under Schedule C.

Problem areas
The penalty mechanism is not thoroughly defined in this contract. As there is NO ITS monitoring, the penalties become more subjective.

Penalty Mechanism
The mechanism of measurement linked to each indicator is NOT found in the contract.

Reward Mechanism
There is NO reward mechanism found in this contract. There is NO incentive for the operator to outperform.

Correlated conditions
When a default occurs, it can be due to factors which are not within the scope of the operator. Such correlated conditions for exemption of penalties are NOT found under the contract. Though the schedule C has “without justifiable cause” for certain points, it is found to be comprehensive

Monitoring Mechanism
The monitoring mechanism is not clearly defined in the contract though the indicators are laid down.
The penalty framework doesn’t obligate public authority in the contract.

17.7.76 Contract Termination
The contract termination clauses are found to be very vague in this contract. The severe case of penalty for non-operation is only liable to termination of contract.
The transition mechanism is also NOT found in the contract during termination for provision of uninterrupted services.

17.7.77 Revenue
This is a gross cost model and revenue risk is with the public authority. Public authority should generate revenue by exploiting all the avenues at its disposal and strive to mitigate unnecessary costs to operator

Some of the aspects are as covered below:

Planning and Design
Bus shelters and their positioning affects the ridership. Public authority should plan well such that maximum possible ridership is received.

Route and Frequency planning
This responsibility is with SPV under the contract.

Fare revision
Fare revision is delinked with premium paid to private operators under this contract. But the hire fee is based on a fixed percentage. It is NOT linked to inflation or fuel prices

Alternate sources of Revenue
PMPML is exploiting any alternate sources of revenue. It is important for the SPV when it follows a gross cost model

Overall Structuring of contract
The contract is a weekly structured legal document. Many of the basic chapters like Indemnity clauses, Force Majeure, Termination etc. are found to be very weakly defined.

Some of the pros in the contract document are as follows:

Pros:
- This contract clearly defines the conditions required for employing the drivers. Clause 17 (i) mandates medical examination. (iii) mandates no criminal record.
- Clause 7 point xii endeavours tax exemption
- Clause 7 point xiii clearly doesn’t promise depot. Also clause 8 point v defines operating kilometre from starting bus stop to ending bus stop. So, contractor can be fully aware of his costs when he is quoting per km cost.
- Clause 12 point (i) states “stage carrier permit” would be obtained by SPV which eases the operator from the burden of obtaining it from RTO
- Clause 12 point ii prohibits the operator from the sale of the fleet
- Clause 18 states the minimum assured fleet kilometre. However, clear definitions and numbers are not found
- The date of contract validity is well defined. It starts when all the fleet is ready for operations.
• Creation of escrow account for payments to operators also gives operators the confidence about payments they are to receive from SPV

Cons:

• Clause 7 point vi directly terminates the driver on complaint from conductor. There is no mechanism for seeking explanation.
• Clause 27 prevents the driver from having any dispute with conductor.
• While COD is defined well, as per Clause 33, forfeiting EMD and termination of contract for failure of operator to obtain buses within 120 days is unjustified as manufacturer related delays were not found to be taken into consideration.
• There are many one-sided clauses which makes CMD, PMPML the ultimate decision maker. For ex: clause 31, clause 24 are all one-sided where arbitrator is also hired by CMD PMPML for dispute resolution
• Clause 11 point i doesn’t have a proper mechanism for penalizing and payment of them thereof
• While operator bears all the costs related to bus operations, Clause 8 point iv (Hire fees revision) is NOT found to be linked to Inflation. Rather it is a fixed percentage.
• The termination clauses do NOT envisage a sustained operations or transition.
• While this model is clear, the contract document could be more facilitating to the operator as operators take a lot of responsibility in this model. Also, many of the chapters present in a professional legal document are found to be missing in this contract

Review of City Bus Private Operations in Surat

Context

The city of Surat, is the ninth largest city and the ninth most populous city in India (as per 2011 census – urban metropolitan population), housing a population in excess of 4 million residents. The city witnesses large scale inward migration within the state owing to its labour intensive industrial set up comprising diamond, textile and oil & petrochemical industries. Considering the burgeoning population, the city faced numerous problems and Surat Municipal Corporation explored various integrated mass transit solutions to counter issues related to increasing vehicular pollution, growing number of vehicle ownership, increasing auto-rickshaws concentration, especially the lack of affordable reliable city bus services.

A PPP approach to provision of city bus services was chosen as the way forward by the SMC and the City Bus Service System was adopted. SMC started city bus services under a NCC model I 2007. Due to lack of strong monitoring framework and mechanisms, the quality of service suffered. In 2012, SMC awarded city bus contract to rainbow travels. BRTS started in 2013. This was contracted under GCC. The city still faces problem with large number of auto-rickshaws. The findings in review of contract and stakeholder interactions are presented below.

Contracting Model

There are two kinds of contracts currently followed in Surat.

1. A Net cost model for City bus services

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus shelters)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Infrastructure maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Fleet procurement</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Operations</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Staff (Drivers and Operational)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Conductors / Fare collection</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
2. A Gross cost model for BRTS

The allocation of roles under the PPP structure for private services BRTS was as follows:

<table>
<thead>
<tr>
<th>Function</th>
<th>SPV</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure (Depots, Terminals and Bus shelters)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Infrastructure maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Fleet procurement</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Operations</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Staff (Drivers and Operational)</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Conductors / Fare collection</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

**Key Findings**

The findings are segregated under the following headings which are found to be important components of city bus contract. The chapters include Operations, Maintenance, Asset creation, Procurement, Financial arrangement, Length of contract, Performance monitoring, Contract Termination, Revenue generation, and Overall Analysis. Further detail is given under individual chapters.

**17.7.78 Operations**

The contract document directly affects the day to day operations and each clause needs to be structured such that it facilitates efficient provision of services by the operator. The findings are further detailed as follows.

**Operating plan**

The City bus services have minimum frequency defined for each route. But the operator is free to increase the number of trips during peak hours. This helps the operator generate more revenue and compensate him for losses made during off peak hours for maintaining the frequency specified in the contract. Flexibility is provided under Clause 10 to the NCC operator.

These clauses are not relevant in the GCC model.

**Revenue collection**

The revenue collection system for Surat BRTC is through ITS system. The bus shelter is a closed system. So, the system is very robust and there are no revenue leakages. As per clause 9, the procedure of payment to operator is also given with detailed timeline.

For City bus, operator has the responsibility of collecting revenues. ETVMs ensure collection of exact revenues.

**Drivers**

The drivers are provided by the operator but there are no specific trainings would be notified by SMC later on as per both the contracts.

**Revenue leakage prevention**

As the system is fool proof, there is no scope for revenue leakages in BRTS system. Whereas the City bus system needs a leakage prevention team. While the contract empowers the operator to penalize passengers for ticket defaults, they are unable to enforce this power.

**ITS monitoring**

In BRTS and City bus contracts, the contract clearly did not lay the procedures to be implemented using ITS for monitoring. It mentioned that there would be SMC would establish and maintain a Central Control Centre that will enable due control and coordination over day to day operations and management of bus service. During our visit to Surat BRTS Control Centre, the monitoring procedures
are still evolving. Clear procedures linked to each performance indicator could have been designed and laid down in the contract.

While the city bus contract mandates operator to install GPS on the fleet for monitoring, the control centre was yet to be set up on ground.

Customer grievance

In BRTS, the contract states clearly that customer grievance mechanism should be devised out by the operator with time frames defined for operator to take action. 5.1 point xxxviii mentions this. Point xxxix allows SMC to review these complaints thoroughly. So, a grievance redressal mechanism not only is devised but effectively implemented.

In City bus system, this is addressed under Clause 16.1.4 where it mandates operator to maintain and submit complaints / suggestions book.

Pass Issuance

This is Not Applicable in the case of BRTS system. For City bus, clauses are included in the contract about how the pass revenue would be shared.

Branding

Branding of the City Bus services is a responsibility not clearly delegated to any party as per this contract. As BRTS is a gross cost contract, the branding of services to increase ridership should be done by SPV as it holds the revenue risk.

For City bus, the safeguard clauses about branding have limited coverage.

17.7.79 Maintenance

Maintenance becomes a key aspect that facilitates effect provision of services and it gives longevity to assets. There are several components of the bus system which needs to be maintained. The contract should clearly define roles and responsibilities of each component for efficient provision of services.

Depot maintenance

The responsibility of provision of basic utilities like water and electricity at depot is not defined in both the contract. BRTS contract commits land with temporary facilities mutually agreed upon from SMC in Clause 5.1 xxix. But if SMC takes up the responsibility of these basic utilities also, (which are anyways under its own purview) the operators can focus on other important maintenance components. City bus contract also mandate the operator to maintain the depot.

Fleet Maintenance

The maintenance of fleet is with operators in both the contracts. Both the contracts didn't lay down clear maintenance parameters for the fleet. As fleet is owned by the operators in both the contracts, the current parameters fairly cover a check on accessories to the fleet and the cleanliness under the penalty framework. However, more detailed mechanisms of maintenance may have been included.

Mechanics

The fleet is owned by the operators. So, the responsibility of arranging mechanics for the bus repairs is completely with operators. As the required number of buses is clearly defined in both the contracts along with back up fleet, operators need to plan the maintenance of fleet accordingly.

Bus shelter

The responsibility of bus shelter maintenance is not defined anywhere in the contract.

Bus corridor

The responsibility of bus corridor maintenance is not defined anywhere in the contract.

Security
The security at Bus Depot, Bus stops and Bus terminals is the responsibility of private player in both the contracts. SMC has the support of traffic and police Department. It is in a better position to arrange for security and this would help multiple operators to provide uninterrupted services.

17.7.80 Asset Creation

For gross cost contract, the only important component for the private operator is Bus Depot. Availability of bus depot has a direct effect on the maintenance costs of the operator. The other components listed down effects the ridership and thereby the revenue. So, they do not become important components of contract for the BRTS system. For net cost contract, all the components of infrastructure are important as they affect both cost as well as revenue.

Bus Depot

Bus depot design and location affects the maintenance cost and other operating costs of the private player. It has direct influence on the costs incurred in operations. Location, internal layout, existing provisions etc. all are going to affect the revenue of the operators. So, depot design that SMC envisages to provide to operators could have been included as a schedule in the contracts.

Bus corridor and Bus Stops

These components are important for SMC in BRTS system and operator in City bus system as the revenue get affected directly in case of delay in the construction due to loss in ridership. The design of bus shelters is also an important parameter in determining ridership. From our observations in Surat, accessibility to BRTS bus shelters is a key reason for the low ridership. So, the public authority should be careful in choosing the design of the system.

17.7.81 Procurement of Fleet

The procurement of fleet is the responsibility of private operator in Surat BRTS.

Choice of design, manufacturer, terms and conditions for manufacturer

The technical specifications are clearly outlined in the contracts. In case of BRTS, Initially there was a delay as EURO IV buses had no vendors in India. Clause 14 of the contract clearly outlines case of dealing with delay where due consideration was given to private operators for providing explanation in case of delay. Possible penalty is also given out if SMC finds the reasons not justifiable in Clause 17. The other key takeaway is that Clause 14 (c) covers penalty to operator for failure of SMC to accept the procured buses.

In City bus services also, there was penalty defined for the operator for failure to arrange buses in a stipulated time.

Permit approvals

In BRTS and City bus services, obtaining permits is responsibility of operators. SMC could have promised support via contractual clause as RTO is also a Government organization. This would help operators to bring in the fleet without delay.

17.7.82 Ownership

The ownership of the fleet is with the private operator.

Fleet size planning

There is a clear fleet size planning for the present. In BRTS, Clause 6.2 states that operator needs to procure fleet if demand warrants additional buses in future. However, there is no mention of advance time within which the public authority has to issue notice to private player. Also, there could have been a mention on a “maximum number” of buses for additional procurement per notification and “minimum time” between two notifications.

In City bus contract, operator cannot refuse to deploy additional buses if mandated by the authority as per Clause 24.1.3. This clause may have given right to refuse to the operator.

Insurance
The ownership of fleet is with private operator. Operators insure the fleet. In case of damages, private player receives the payment from insurance companies. So, the clauses are fine.

**Back up fleet**

The size of back up fleet to be maintained by the operator is defined in the contracts clearly.

17.7.83 **Financing arrangement**

The payments to be made by the operator for this contract are i. EMD ii. Performance Guarantee The contract doesn't offer any direct financing support from SMC to private operator for procurement of fleet.

17.7.84 **Length of contract**

The contract is for seven years in BRTS and six years in City bus services. The rationale for this is based on the operating life of a bus given on the basis of operating kilo meters. The contract defines “Assured operational kilometres” of 72000 per bus per year. Accordingly the length of contract is fixed for the life of the bus.

17.7.85 **Performance Monitoring Mechanism**

The performance monitoring framework is defined in Schedule 5 & 6 of the BRTS contract. Clause 22 gives the performance monitoring mechanism in Surat City bus contract.

*Existing Indicators*

The current indicators cover the various operating parameters and service parameters. The two important parameters - timeliness and cleanliness is taken care of under Schedule 6 in BRTS contract. The indicators were not comprehensive in case of City bus contract.

*Problem areas*

In BRTS and City bus, the one key problem in this penalty framework is that the operators first have to pay the penalty and then SMC would reimburse if finds that a penalty imposition in any case is unjustifiable. Rather the mechanism should be such that first it should seek explanation for a default and then impose penalty if prevention of default is within the scope of the operator.

*Penalty Mechanism*

For BRTS, there is a penalty mechanism defined under this contract under Clause 11 with each indicator in Schedule-6. However, the mechanism of measurement linked to each indicator should have been given in the contract.

In City bus, though mechanism of monitoring was indicated, the procedures were not laid out in detail.

*Reward Mechanism*

In BRTS, there is a very vague reward mechanism defined under Clause 9(f). Including it would incentivize the operators for provision of effective services.

In City bus contract, there is no reward mechanism.

*Correlated conditions*

When a default occurs, it can be due to factors which are not within the scope of the operator. For example, if a bus is not clean due to unavailability of water at the Bus Depot, operator cannot be penalized as water supply is from Municipal Corporation. So, either a mechanism to address these kinds of issues should exist or certain clauses should be included in the contract considering the factors for default which are outside the scope of operators.

*Monitoring Mechanism*

The monitoring mechanism is not clearly defined in the contract though the indicators are laid down. As ITS is implemented, the procedures of monitoring each indicator using ITS may have been laid down as a schedule in the contract documents.
17.7.86 Contract Termination

In BRTS contract, termination occurs in two conditions – Force Majeure and Material Breach. Both the cases are clearly defined in the contract and the detailed clauses under each case are also given. Clearly laid out procedures are given for i. Remedial process and ii. Termination. The procedures have time frames for rectification and also a clear process is designed for provision of uninterrupted services to end user. Clause 20.4 point iii states that it is at the discretion of the SMC to take over the assets. But the private operator incurs huge investment in procuring the buses which are suitable for only this city’s design. So, on termination of the contract, the fleet procurement could have been promised by SMC under the contract. Otherwise, the whole of CAPEX would unjustifiably get wasted for the private operators in both the contracts.

Though default definitions are included in the City bus contract, detailed transition mechanisms are not part of contract.

17.7.87 Revenue

As BRTS is a gross cost model and revenue risk is with the public authority. Public authority should generate revenue by exploiting all the avenues at its disposal and strive to mitigate unnecessary costs to operator. In Net cost, whenever revenues come down due to factors like emergence of BRTS on awarded routes etc., inclusion of VGF clauses would help the operator.

Some of the aspects about revenue are as covered below:

Planning, Design and Provision of Depot and other Infrastructure

As discussed earlier, Depot would affect the operator’s costs and bus shelters, their positioning affects the ridership. Public authority should plan well such that maximum possible ridership is received.

Route and Frequency planning

This responsibility is with SPV under the contract. In City bus contract, the public authority gives some flexibility for the operator to request for change of routes. However, the discretion of authority is final.

VGF Clauses in case of Unforeseen Losses

As “Annual Assured Bus Kilometres” are laid down, there is no need for any VGF clauses in BRTS contract. There are no VGF clauses in case of City bus. Including them would safeguard the operator as it is a net cost.

Fare revision

In BRTS, fare revision is delinked with premium paid to private operators under this contract. Also a clear formula is given out linking payment of premium to Inflation and fuel prices. So, the contract gives a method to isolate private operators from revenue risks.

In City bus service, the fare revision is decided by Roads and Transport Dept., and no clause was found for VGF. As this is a net cost model, such clauses may help the operator mitigate the losses. While the fare revision is not committed, the premium paid to Government is revised at a fixed rate as per the contract.

17.7.88 Alternate sources of Revenue

SMC has devised innovative ways to raise funds with their SPV. Some of the methods are imposition of 2% tax on private vehicle registrations, imposition of premium on property tax alongside BRTS corridors. Parking fee was not imposed as public transport has not yet reached complete coverage and reliability as mentioned by the Municipal Commissioner of Surat. So, it makes sense that public shouldn’t be charged parking fee without establishment of substantial public transport connectivity in any city.

Overall Structuring of contract

The overall structure of the contracts from bidding process, qualification criteria to division of roles and responsibilities is very comprehensive and well defined in both the contracts.
The contract model of BRTS is very suitable in Indian context where SPV can establish services at a very low cost and at the same time indemnify private operators from revenue risks. The private operator is very much satisfied with the support obtained from SMC and the contract clauses as penalties are not only defined for private players but also for SMC.

The termination mechanism and remedy process is also very carefully structured so that bus services are uninterrupted.

However few areas need improvements. They are summarized as following:

i. There is no long term incentive scheme for private operators.

ii. A detailed design of depots like fleet size vs capacity, number of maintenance beds etc. could have been given as a schedule.

iii. Security of the system is left to private operator which could have been retained by SMC.

iv. Monitoring procedures could have been defined related to each indicator

v. Fleet ownership by SMC on termination is not there

vi. A well-defined reward mechanism is not there

vii. In bidding process, the selection method is L1. The entry barriers for operators are also very high. Smaller operators / New entrants could be encouraged by changing the criteria to some extent.

The City bus contract has many one-sided clauses without commensurate compensation for the losses incurred as a result. For example: changing of routes is with the public authority. While authority may retain such essential rights, inclusion of such VGF clauses would help the operator mitigate the losses and provide efficient services in such cases.