

Pros & Cons of Outsourcing Bus Operations

Sanjiv N. Sahai

Managing Director & CEO, DIMTS Ltd

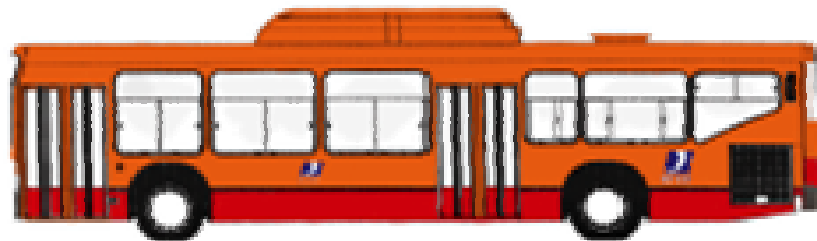
Urban Mobility Conference

Technical Session IV - PPP in Urban Bus Operations and Maintenance Strategies



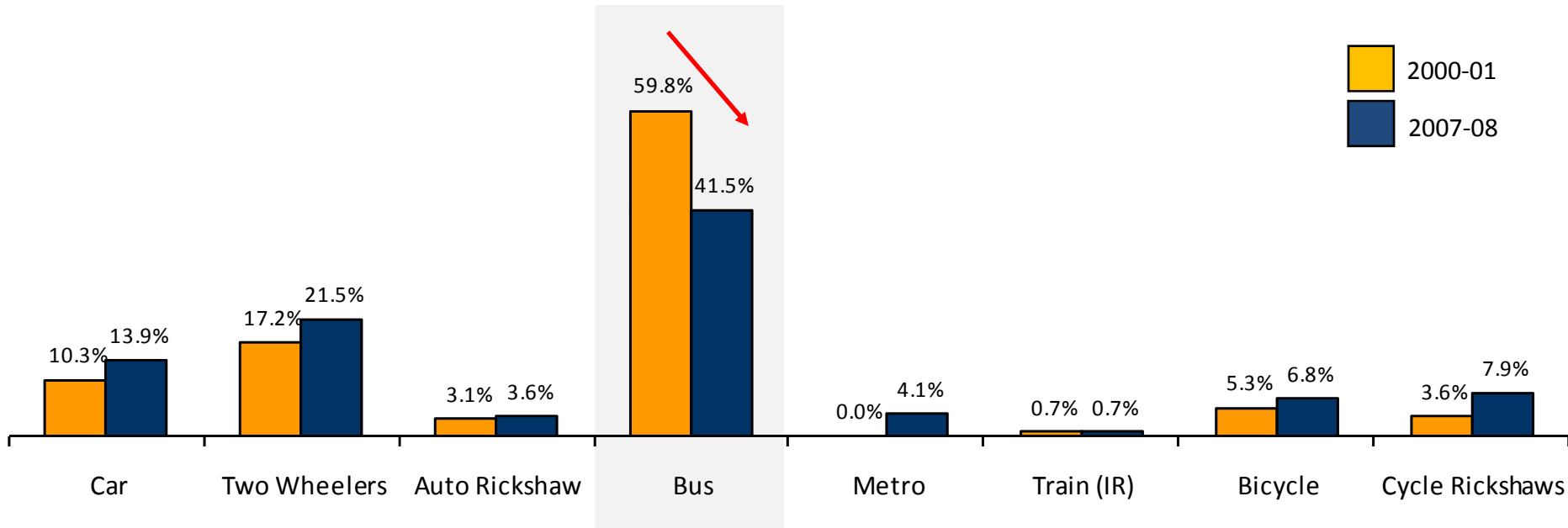
Structure of the Presentation

- Introduction
- Various Models for Procurement of Bus Operation
- Appraisal of Different Models
- Discussion on Gross Cost



Trends in the Delhi Bus Market

Modal Split - % of Person Trips (excluding walk trips) in Delhi*
(Figures in Percent)



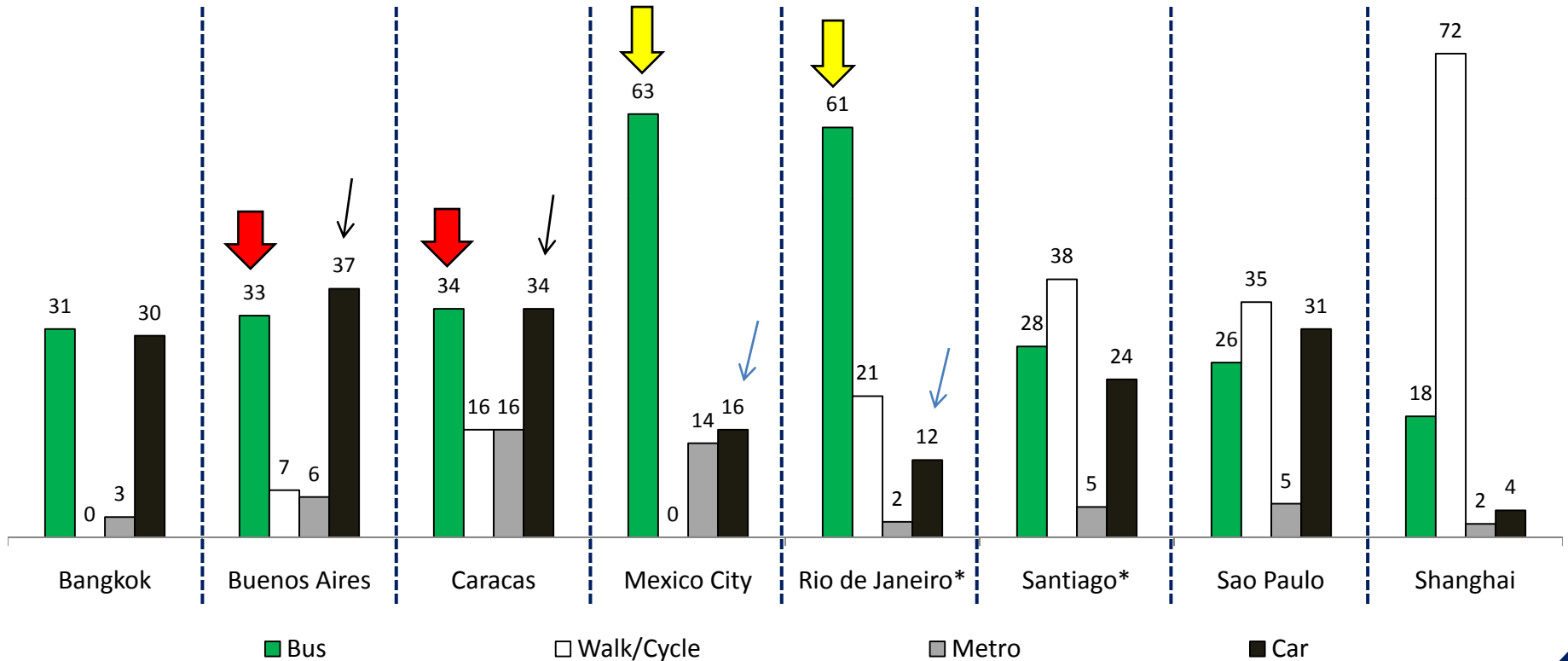
* Walk-only trips account for 35% of trips

Source: RITES Delhi Traffic and Forecast Study (2008)



Buses Vital for Reducing Car Use

Transport Share - Cities



Source: Bus Rapid Transit Planning Guide, GTZ



Buses in Delhi



Delhi Transport Corporation

- State owned
- Fares set by Government
- Get Gap-funding from the Govt.
- No performance monitoring



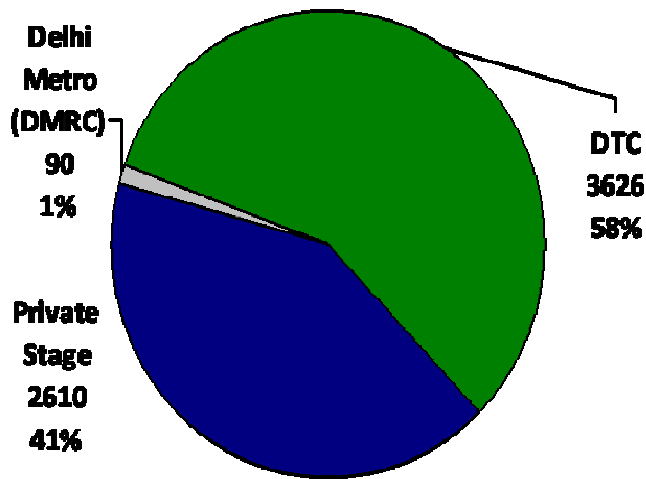
Private Stage Carriage - Bluelines

- Privately owned
- Fares set by Government
- Reliant on Fare box Revenue
- 77% of owners have one vehicle



Characteristics of Bus Network in Delhi

Bus Fleets Size in Delhi – By Operators



- Public Operator (Delhi Transport Corporation) carried approx. 2.2 million passengers on an average per day in 2008.
- Private Operators carried approx. **2 times** more passengers than Public Operator.

Source:

1. STA as of February 2009
2. DTC Operational Statistics (October 2009);
3. Delhi Metro – Feeder Service (http://www.delhimetrorail.com/commuters/feeder_bus.html)



Public Sector Model - Advantages

- **Closer authority control** over services and fares
- **Social and community objectives** can be easier to achieve
 - Offering free passes to freedom fighters etc.
- **More accessible** in terms of:
 - **Geography**: serving unremunerative and rural routes
 - **Time**: operating service in early morning & late night
 - **Fare**: offering concessionary passes to students, old persons etc.
- Easy to **acquire assets** such as new fleet and depot space
- Better **paid and trained manpower** including drivers etc. permits adequate rest and recuperation



Issues with Public Sector Model

- Poorly incentivized management - perceived risk
- Over staffing and at the same time absenteeism
- No incentive to adhere to performance management system
- Not responsive to customer demand
- Lack of innovation and adaption to changing environment
- Little incentive to control costs as subsidies provided ex-post with no link to achieving policy objectives

DFID Global Review of Bus Performance

“could not find any example where a pure public monopoly offers a superior alternative to the best designed competitive arrangement”

Source: Halcrow Fox for DfID, May 2000



Productivity Gap

Parameters	Particulars	Nos.
Buses	Average Fleet	3,028 (Nos.)
	Average buses on road (Daily)	2,458 (Nos.)
	Fleet Utilization (%)	81.18%
Trips	Scheduled Trips (Daily)	22,447
	Operated (Daily)	17,265
	Trip Efficiency (%)	76.91%
Kms	Scheduled Kms (Daily – in Lakhs)	164.31
	Actual Kms (Daily – in Lakhs)	125.85
	Kms Efficiency (%)	76.59%

Source: DTC Operational Statistics (June 2009)



Private Stage Carriage Model - Advantages

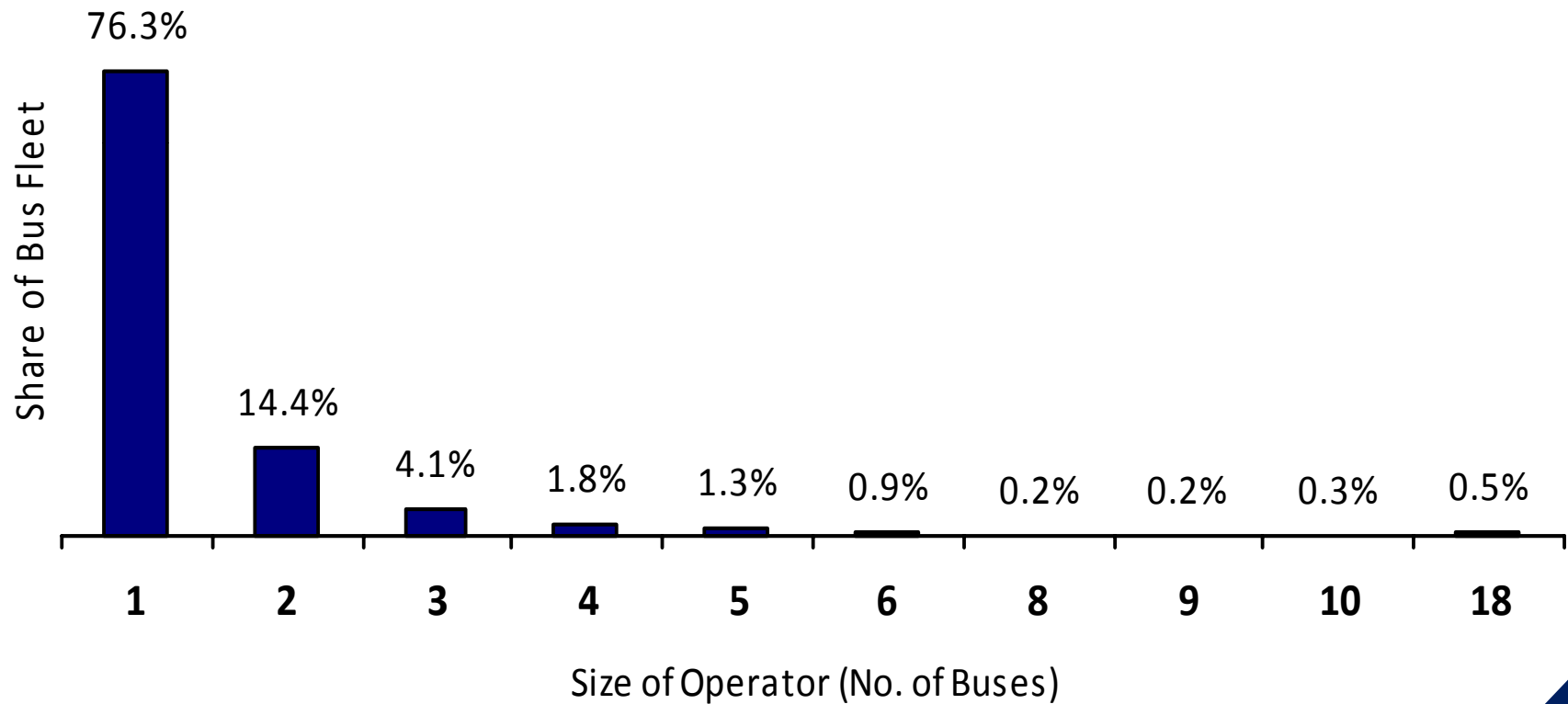
- **No subsidy burden** on the govt. exchequer
- **Cost control** and higher levels of bus patronage occupancy as payment made per passenger



Characteristics of Private Bus Operation

Ownership Pattern

Distribution of Blueline Fleet Size by Size of Operator



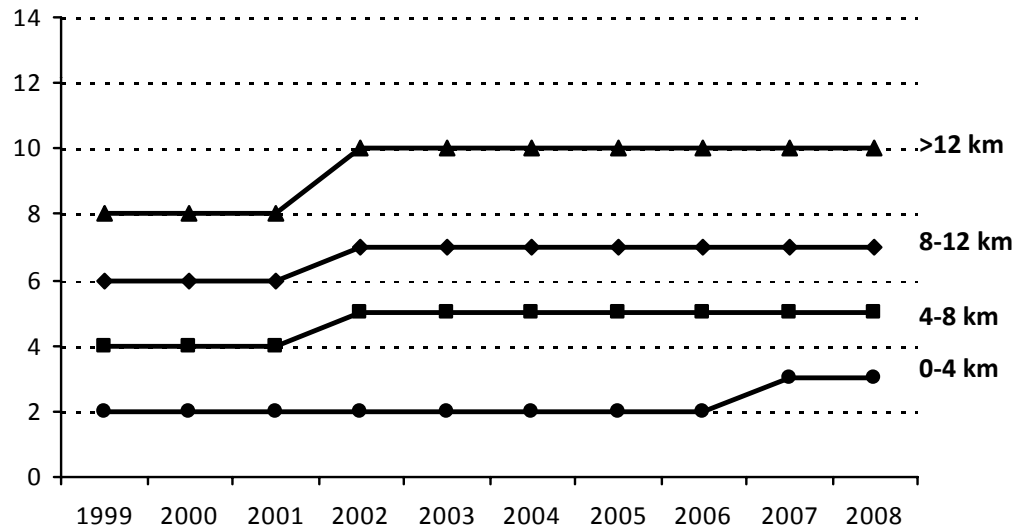
Source: STA, Delhi (October 2007)



Characteristics of Private Bus Operation

Fare Regulation

- Fare regulation / setting is a political decision and does not encompass the financial and economic imperatives



- Wars of pennies - Competition in the market

Source: Transport Department, GNCTD



Issues in Private Bus Operation

- 49% of bus routes are non-operational
- Lack of network benefits
- Undesirable driving practices
 - Accidents and traffic violations
 - Predation by incumbents or cartelization
- Unreliable bus service - absence of bus route/schedule information
- Under investment



Regulatory Burden - Permit Conditions

- There are more than 51 permit conditions which private operator needs to comply. The cost of compliance is high so violation is likely
- In case of violation of permit condition, buses are moved off the road by the authority
 - The operators face 100% revenue risk as most of the operators are single bus owners
 - Passengers also faced inconvenience due to withdrawal of services



Strategic Objectives

What kind of bus service do we need?

- **Effective, economic, efficient and safe**
 - A high quality, affordable public transport service
 - Mitigate safety risk – competition for the market, not in the market
 - Minimum scale required to ensure appropriate management skills
 - Clear contractual obligations and responsibilities
 - Maintain service levels on existing routes, extend coverage
 - Provide comfortable and clean environment
- **Ensure flexibility for the future**
 - Current route network is not rationalised or optimised
 - Need scope to redeploy resources to respond to shifts in demand
 - Ability to respond to demographic changes and economic growth
 - Capability to accommodate changes in regulatory policy (e.g. fares)



Risk Allocation

- **Appropriate allocation of risk**

- High cost associated with attempts to transfer uncontrolled risk
- Where does control lie?
- Recognise information gaps and asymmetry

- **Sponsor's dilemma . . .**

the greater the extent
of attempted risk transfer



the fewer the
likely bidders



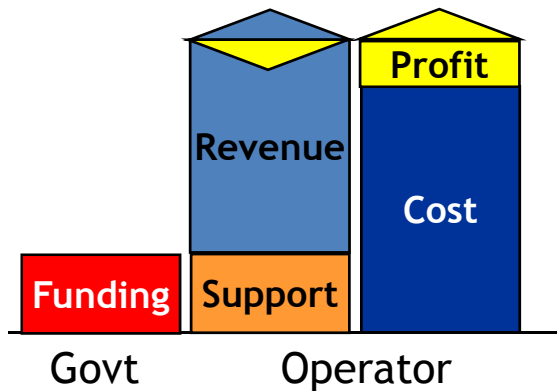
the greater the
potential costs



Contract Types

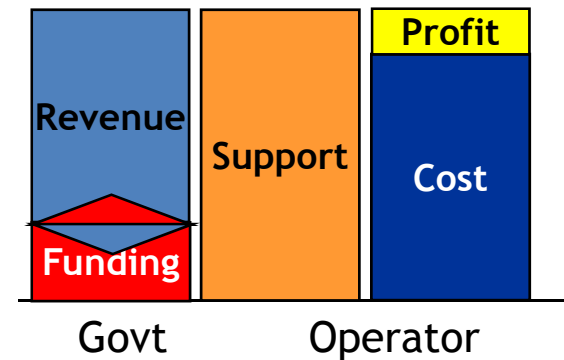
Net Cost

- Full transfer of revenue risk?
- or Shared risk?
- Or Minimum revenue guarantee?

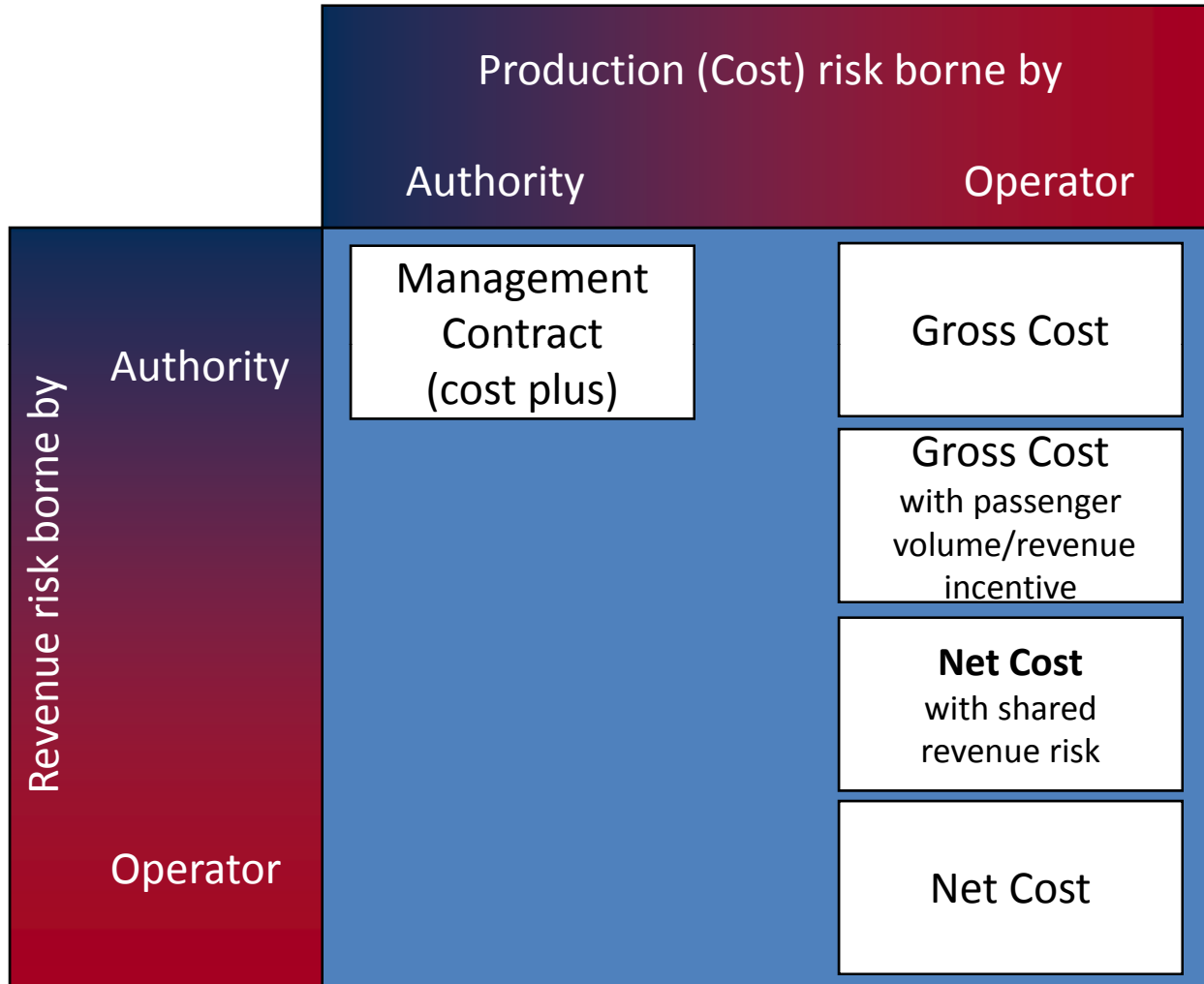


Gross Cost

- Resource contract
- No transfer of revenue risk
- Revenue paid to Government



Contract Types



Net Cost – Full Revenue Risk

- Bid annual premium or subsidy for operation of package of routes
 - Defined frequency, x hours service per day, y buses
 - Set of functional specifications
- + Incentive to maximise patronage
- + Incentive to enforce revenue collection
- No data on actual patronage revenue
- No service on some routes so not possible to survey
- Potential for high risk premium and/or few bids
- Disincentive to offer/accept concession fares
- Potentially unrealistic expectations of growth (high or low)
- Potential for competition with DTC (or routes in overlapping clusters)
- Potential windfall gain if DTC underperforms

If genuine revenue risk transfer required then should have freedom to set tariffs



Net Cost 2 – SRR and MRG

- Bid annual premium or subsidy for operation of package of routes
- Define expected revenues each year
- **Shared Revenue Risk (SRR)**
 - Any shortfall in revenue partially compensated by Government
 - Any upside revenue gain shared with Government
- **Minimum Revenue Guarantee (MRG)**
 - All shortfall compensated by Government
 - All upside to operator
- Similar pros/cons to Net Cost with full revenue risk *except*:
 - + Reduces potential risk premium in bid
 - + Reduces incentive for competition with DTC



Gross Cost – No revenue risk

- Resource contract with fare collection on behalf of Government
 - Tender for defined package of service schedules and functional specifications
 - Define costs by type of bus for base bid
 - Defined rates for marginal service increments
 - Fare collection and revenue protection separately outsourced
-
- + Flexibility to add routes, change frequency, redeploy resources
 - + Fares and ticketing policy revised at will
 - + Full acceptance of all ticket types including concession fares/passes
 - + Payments related to type of bus (quality of service) provided
 - + Reduced cost of finance due to secure income stream (from Government)
-
- No incentive to maximise patronage (or pick up)
 - No incentive for revenue protection



Government Contractual Obligations

Gross Cost

- Guaranteed on time payments
- Provide for inflation indexation on quarterly or annual basis
- Provision of depots

and for Net Cost

- DTC to run in accordance with unified timetable



Bid Parameters

- Cost to operate a defined schedule for a set of services = base bid
 - Specified outputs:
 - Bus-kms
 - Bus hours
 - Minimum peak buses in service
- } by bus type



Guiding Principles for Gross Cost Contracts

- **Deliverability**

- Define organisational structure and responsibilities / accountability
- Evidence of managerial experience and competence
- Evidence of contractual commitments including timescales
- Realistic timetable for roll out with key milestones

- **Sustainability**

- Minimise risk of financial failure (hard/expensive to restore confidence)
- Require breakdown of costs – compare against realistic range (benchmark indicators)
- Indexation for key cost elements (eg labour, fuel)



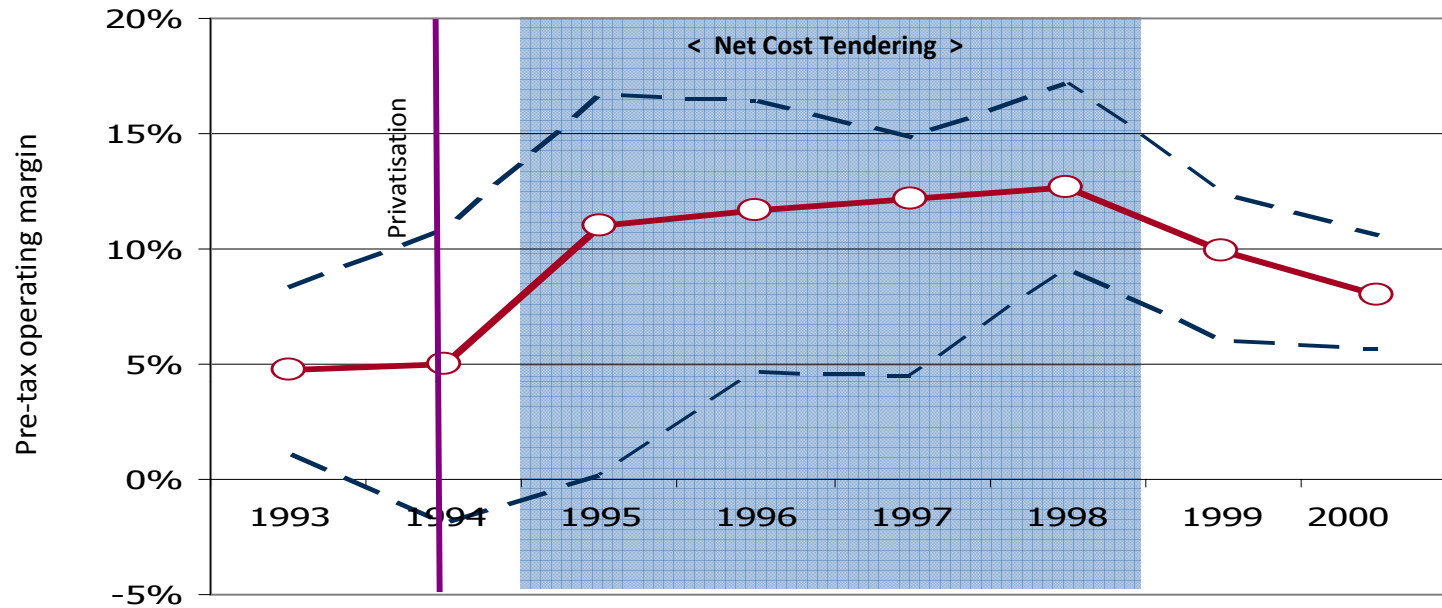
Comparator Models

- The value for money can be assessed by comparing the various bids with a public sector comparator (PSC) or ideally an “efficient operator” model

- DIMTS has relevant data for DTC and hypothetical private operator.



Net Cost Vs Gross Cost: Operator profit levels



- Profitability to the operator rose to average of 12.5% under Net Cost contract regime (some >17%)
- Since introduction of Gross Cost margin has fallen to between 5-10% (current average 7.5%)

Source: Steer Davies Gleave (SDG), London (U.K.)



Approaches in Other Cities



City

London UK

Copenhagen DK

Stockholm SE

Adelaide AU

Bogota CO

Santiago CL

Contract Type

Gross cost

Gross cost

Gross cost

Gross cost

Gross cost

Gross cost

Route based

Area based

Area based

Area based

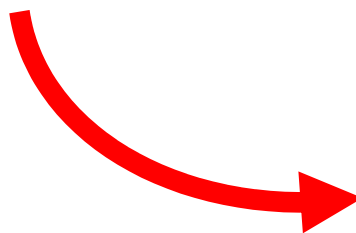
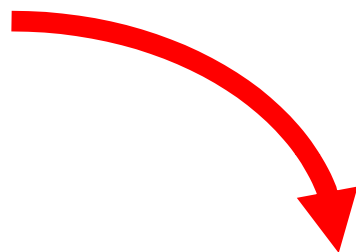
Corridor based

Area based



Scheme of Private Stage Carriage Corpportisation

Routes clustered (657 bus routes classified in 17 Clusters) so as to leverage network synergies.



Role of Integrated Mechanism – DIMTS

- Monitor compliance of the Performance Standards by bus operators
- Process and impose performance adjustment (PA) for non-performance on bus operators
- Enforcement and monitoring of Unified Time Tables (UTT)
- Monitoring aspects that impact customer service
- Data collection, analysis and monitoring of cluster-wise operation, along with route rationalization



Performance Management System

A performance incentive system will be implemented to reward or penalize the operator on the basis of the quality of service delivered.

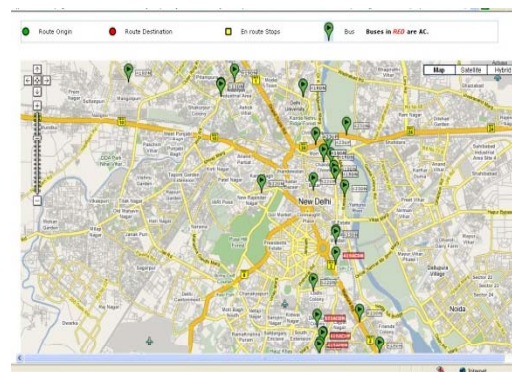
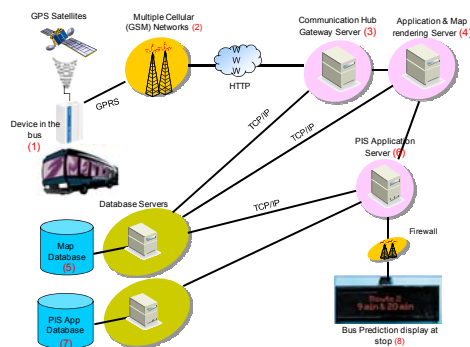
- Reliability and Frequency
- Safety
- Quality such as cleanliness etc.



Role of Technology in Performance Monitoring

There is a strong reliance upon modern location technology and intelligent transport systems to monitor operator performance.

- Automatic Vehicle Location Tracking System (AVLTS)
- Operating Control Centre (OCC) with ITS capability
- Automatic Fare Collection System (AFCS)



Supported by Systematic Checking

There is also a strong need to assess the other quality parameters, through daily routine checks and periodic surveys.

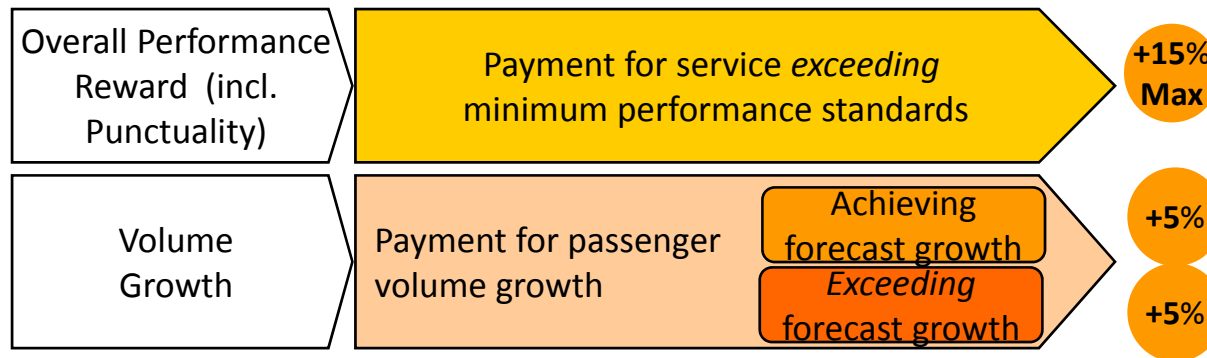
- Driver Quality Monitoring (DQM)
- Engineering Quality Checking



Source: www.thestar.com



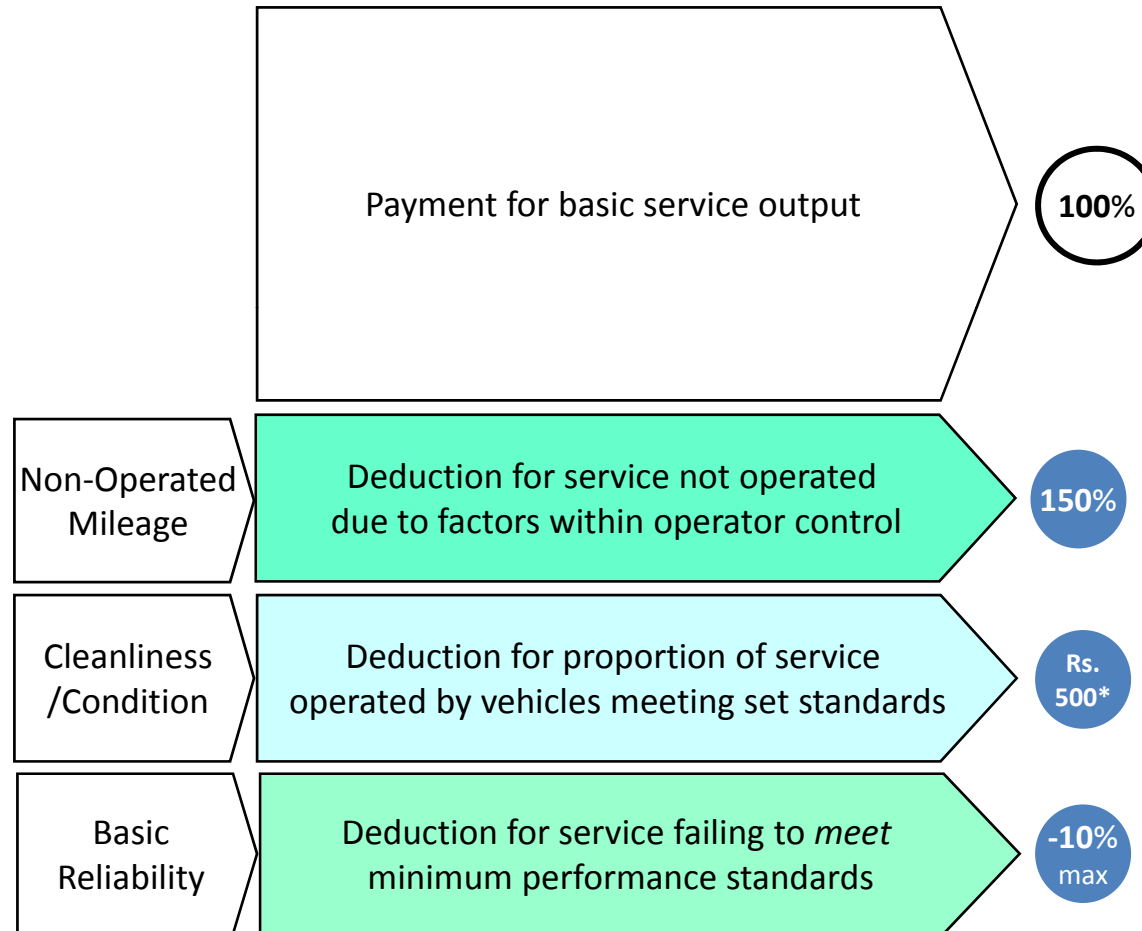
Performance Regime – Potential Bonus



- Targets must be realistic and achievable
- A positive response is likely if the incentive is structured in line with economic principles to provide a commercial return to the operator
 - i.e. the cost of delivering the desired standard is less than the reward
- For DIMTS, the task is to determine the optimum level at which to set the incentive.



Performance Regime – Structure of Penalties



Elements at Risk
Proportional to kilometres not run or service standards below minimum specifications

* Per default - Provision of penalty on entire fleet on 10% sample checks.



Challenges

- Political will to 'stay the course' of reform
- Institutional capability to plan, monitor and manage
- Data collection and sophisticated information management to maintain consistent quality
- Subsidy dependent
- Reliant on technology to reduce revenue leakage



Thank you

