Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

TRANSfer
Towards climate-friendly transport technologies and measures

Jeepney+ NAMA
Franchise Consolidation, Contracting and KPIs

Robin Kaenzig
Project Consultants, GIZ TRANSFER Project

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

TRANSfer
Towards climate-friendly transport technologies and measures

Contents

- What are KPIs and why do we need them
- Network performance measurement now and in future
- Present Situation
- The benefits of franchise consolidation
- Forms of contract
- Case Studies
- Roadmap to adoption

What are Key Performance Indicators (KPIs)

KPIs are metrics which allow the performance to measured and evaluated against a particular objective.

Why do we need them?

'You can't manage what you don't measure'…

1. Establish current performance levels
2. Determine areas for improvement
3. Measure progress against targets

List of typical indicator areas

Parameter	Example indicator
Modal share	% of trips by public transport
Availability	Service kms operated, x% routes operate 10 minutes headways or lower
Accessibility	X% of population within 500m of stop
Reliability	% of trips on time, % lost mileage, excess wait time
Safety and Security	Accidents per km or per 100k trips, No. reported incidents, % of stops with lighting
Equality (inclusiveness)	% of vehicles/stops with disabled access
Affordability and payment	Fare as share of income, fare cf. other modes, payment options, intermodal fare integration

Parameter	Example indicator
Connectivity	Integration between service providers
Service quality, speed, attractiveness, comfort	Journey times, dwell times, seat availability, amenities at stations, % fleet air conditioned, customer satisfaction
Environmental impact	Emissions per km, average fuel efficiency, % fleet operating on clean fuels
Economic aspects	Subsidy burden, investment in public transport
Operational performance	Revenue per km, average loadings, operating cost per km, % fleet in service, staff to bus ratio

Present Performance Data

1. Franchise data
   - Fleet numbers
   - Vehicle age
2. Jeepney Routes
   - Number and alignment of routes
   - Vehicles per route
   - Route Measurement Capacity (RMC)
3. Fares
   - Fare levels and evolution
   - Affordability

What are the gaps?

- No route performance metrics
- No monitoring of
  - ridership
  - journey characteristics
  - accessibility
  - availability
  - productivity/profitability
- Limited data for network planning

Rationale of KPI development?

1. Understanding of Jeepney Sector

– Modal share – relative importance within total transport market (demand)

– Network coverage and service levels (transport supply)

2. Performance metrics to assess network wide performance

– Aid in planning process – identification of shortcomings/needs

– Assist in evaluating impact of measures/policies

3. Performance metrics for use in **monitoring of franchises**

– Observed service levels by route

– Compliance with franchise requirements

– Customer satisfaction

Franchise Context

1. Jeepney sector and franchising highly fragmented. On Metro-Manila's c. 700 Jeepney routes we have

- 55,000+ vehicles
- 39,000+ franchises
- c. 24,500 named operators
  - 78% own just a single unit
  - Only 2% own more than 5 units
- Small number of co-operatives
  - Own around 15% of fleet

Challenges of present franchising arrangements

1. Massive number of individual franchises means a sizable task in monitoring of compliance and performance
2. Atomised market structure leaves no individual responsibility for important service characteristics such as service frequency, availability, capacity offered
3. Limitation on the ability to collect route by route performance data (passengers carried, revenues, seat kms)
4. Competition in the market rather than for the market – 'penny wars'
5. No meaningful opportunity to incentivise improved performance or apply service standards beyond basic entry requirements

Typical forms of Bus Contract

1. Net cost contract

– The authority issues a contract to operate a route for a particular length of time. The operator collects the fare revenue and holds the risk of revenue shortfall.

2. Gross cost contract

– The revenue is collected by/for the local authority, which pays the operator to operate the service. The transport authority holds the revenue risk.

3. Quality Incentive contract

– Performance incentive/penalty payments based on monitored performance against franchise targets

Alternative forms of franchising – key questions

1. Who decides

– Which routes will be operated?

– At what frequencies?

– With what service requirements (eg minimum standards, performance targets)

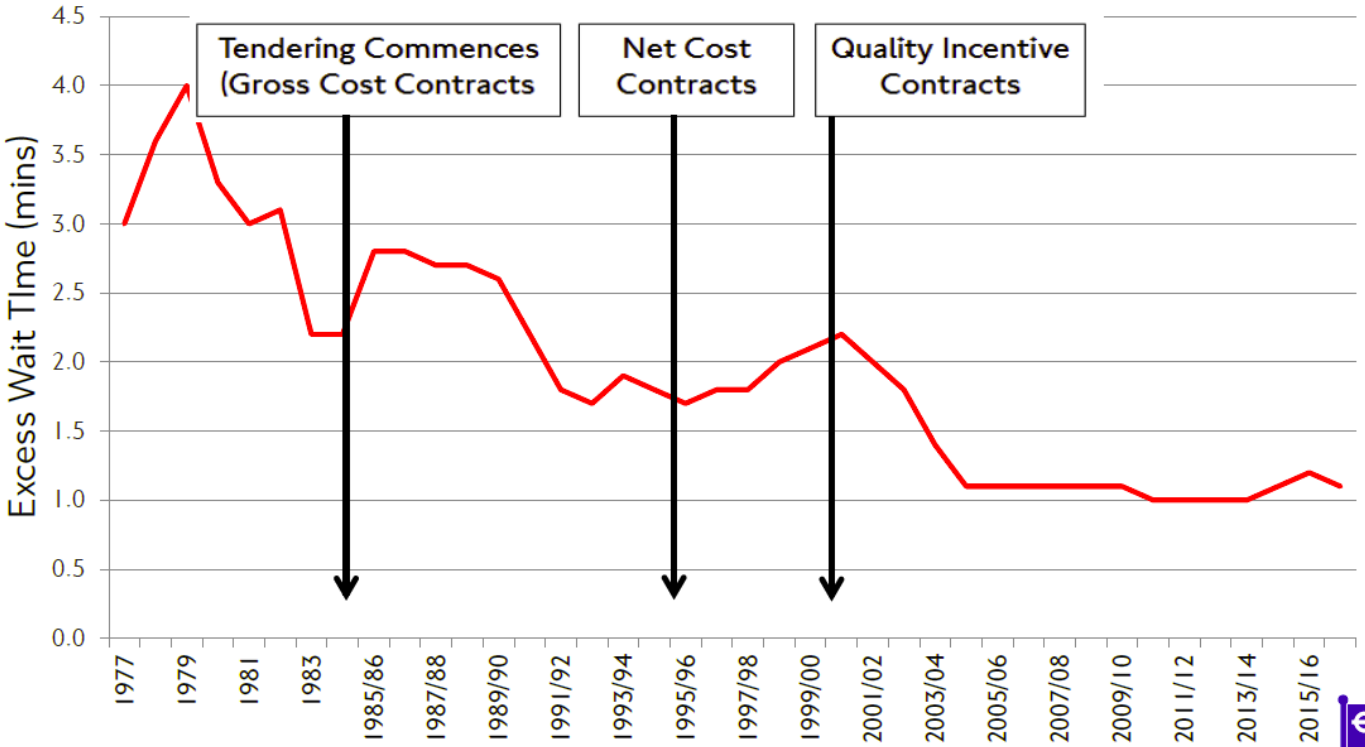
2. Who collects the revenue and takes the revenue risk?

Choice of contract type affects opportunity for Integrated ticketing, potential for cross-subsidy, unified branding, incentivising of performance

Case Study - London

1. London buses are regulated by Transport for London (TfL)
2. Private sector companies operate tendered services on behalf of TfL under ‘Quality Based Contracts’
3. TfL undertakes a wide range of monitoring and evaluation covering all aspects of transport network performance, travel demand and customer satisfaction.

Service Quality - waiting time

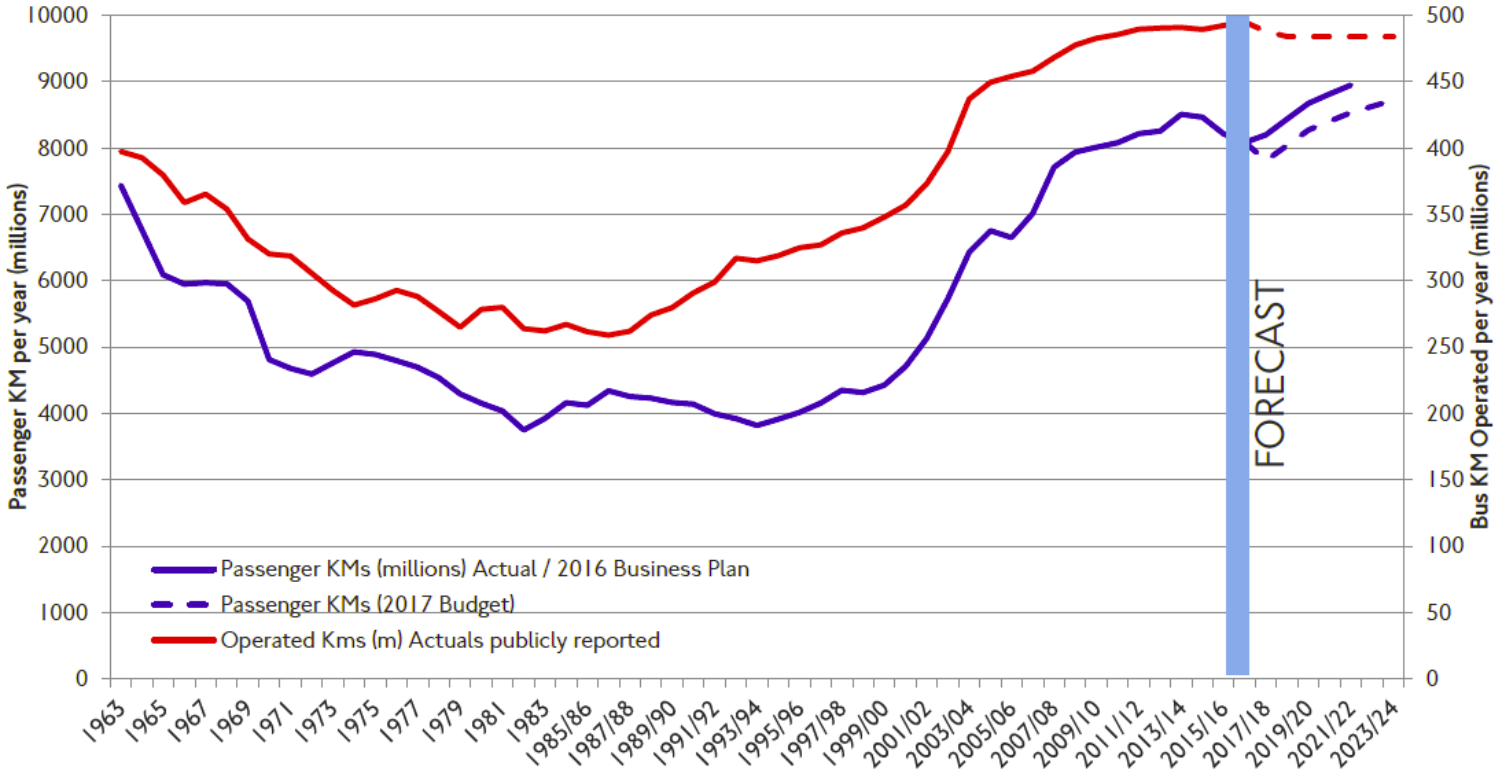


- Lower excess wait = better reliability

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

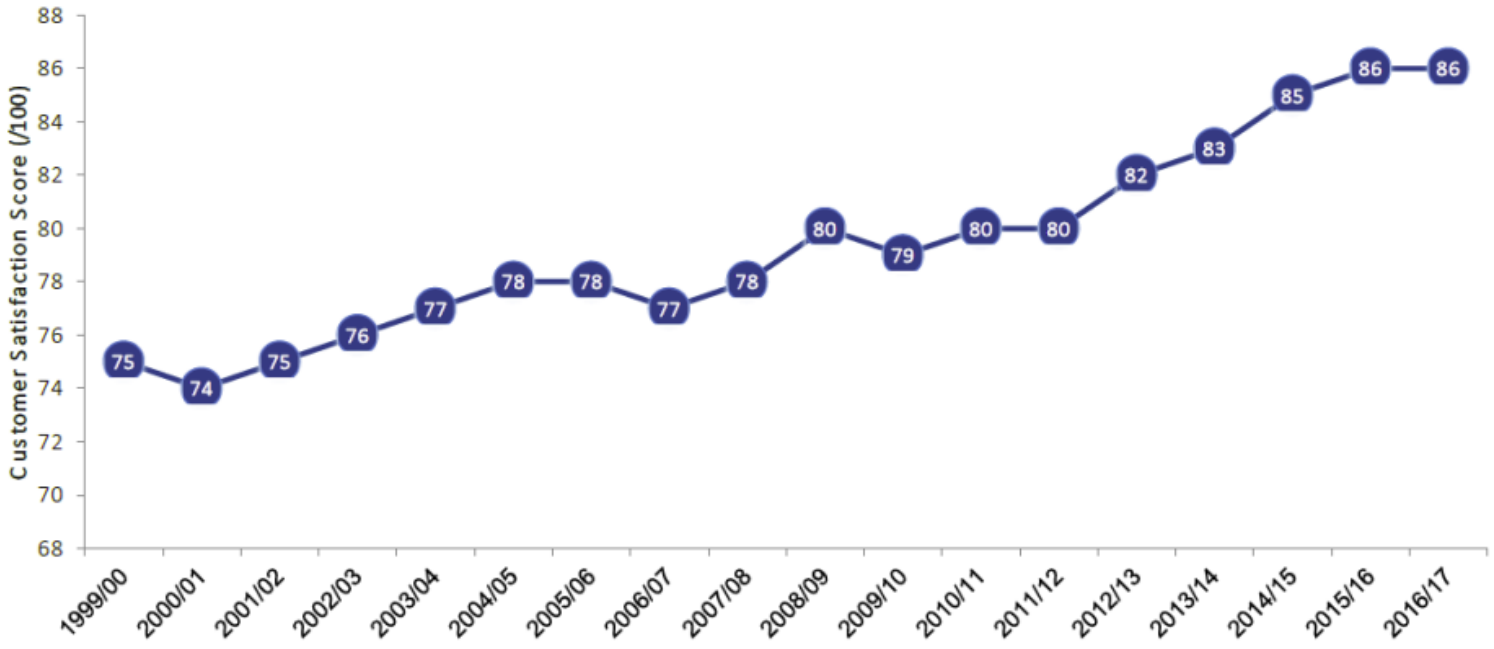
TRANSfer
Towards climate-friendly transport technologies and measures

Service volume and usage since 1963 and forecasts to 2022



EVERY JOURNEY MATTERS

Customer Satisfaction



EVERY JOURNEY MATTERS

Performance monitoring for tendered services

1. For the purposes of operator performance monitoring, the focus is on two simple performance metrics

- Percentage of Schedule Operated
- Excess Wait Time

Percentage of Schedule Operated

Proportion of scheduled journeys made by buses in service

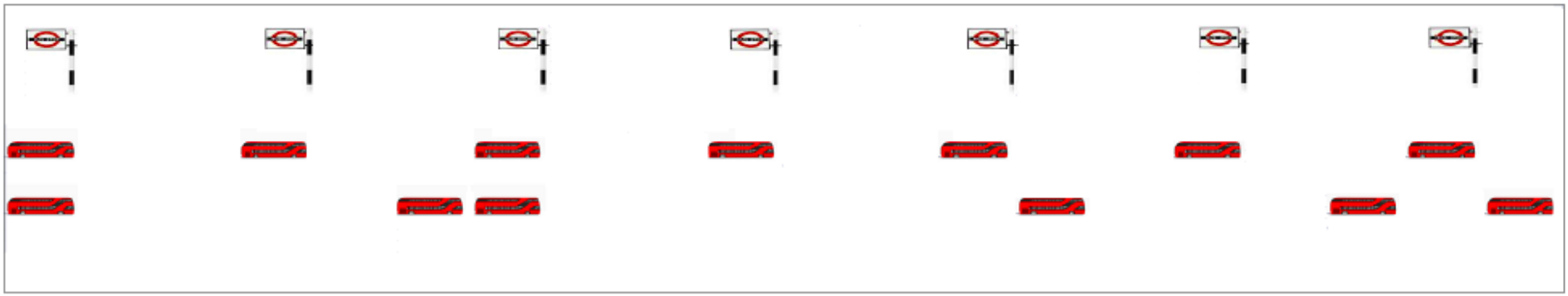
- Can also be seen as measure of ‘lost mileage’ as indicates the number of journeys curtailed or cancelled
- Measured with on-board GPS – Automatic Vehicle Location (AVL) system known as iBUS

Excess Wait Time

Excess Wait Time – the average time passengers wait over and above what would have been expected if the service was running exactly as scheduled

- Bonus for good performance
- Penalty for poor performance

+- 15%



Transport Contracts

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Verkehrsvertrag

zwischen

dem **Land Berlin**,
vertreten durch die Senatsverwaltung für Stadtentwicklung

und

der **Berliner Verkehrsbetriebe (BVG)**
Anstalt des öffentlichen Rechts

über die Erbringung von Verkehrs- und Infrastrukturleistungen
der Verkehrsmittel U-Bahn, Straßenbahn, Bus und Fähre in Berlin
in der Zeit vom 1. Januar 2008 bis zum 31. August 2020

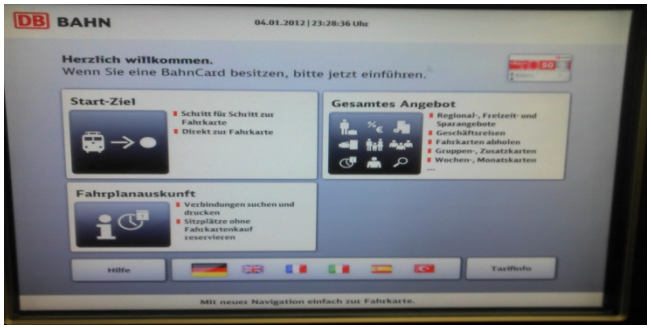
Performance

Financing

Accountability

Transport Contracts: Quality Criteria

	Definition	Target-value
Reliability	Scheduled services take place	- Bus: 99.8 % - underground, tram: 99.7%
Punctuality	Service departs - No more than 3.5 min behind schedule - No more than 1.5 min before schedule	- U-Bahn: 97 % - Tram: 91% Bus: 87%
Dependable connections	Maximum waiting time 5 minutes at defined stations / connecting points.	- underground: 99 % - bus, tram: yet to be determined



Source: http://www.cnb-online.de/Qualitaetsvorgaben.636.0.html

Monitoring of Franchises

1. Measure operator performance against KPIs to:

- Ensure compliance with franchise conditions
- Reward high performance / penalise poor performance
- Aid future tendering decisions

Performance monitoring should reflect aspects of service important to traveller

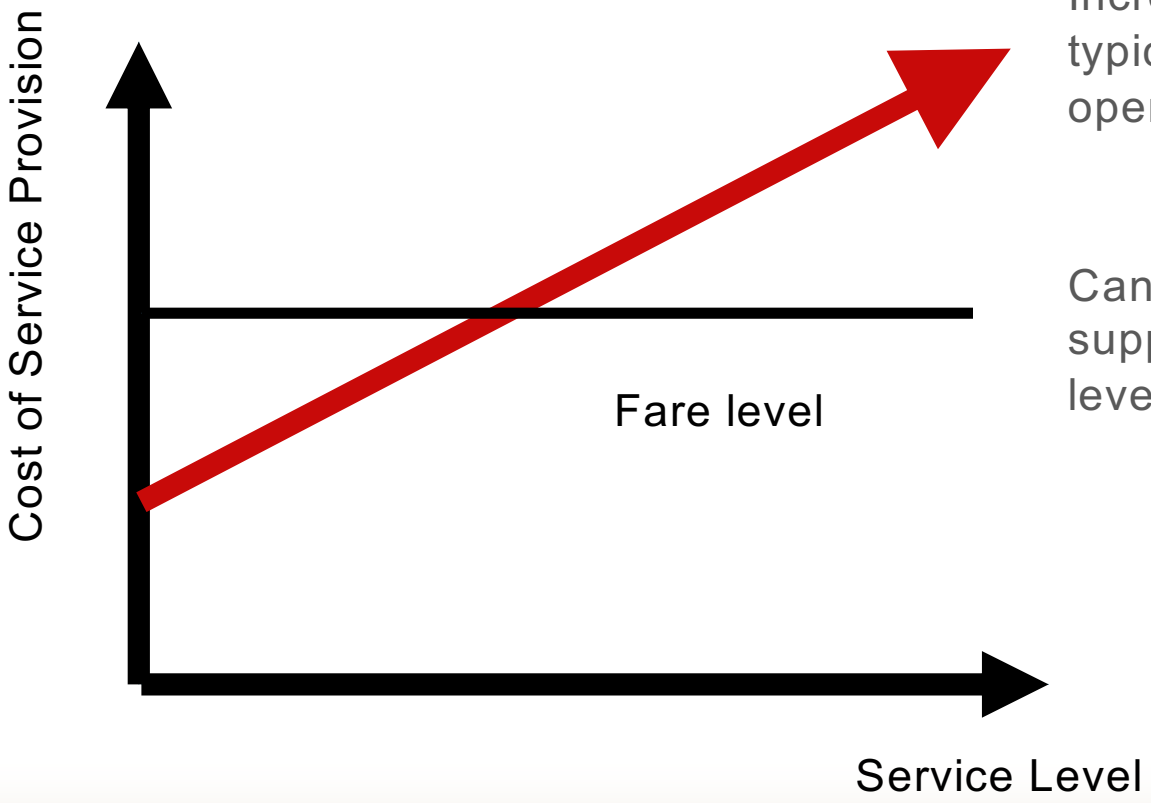
What are travellers priorities?

	Jeepney	LRT/MRT	Aircon bus	NonAirC bus	FX Expss
Too few services	2.9	2.6	2.5	2.7	2.6
Takes too long	3.0	2.7	3.1	3.5	3.2
Uncomfortable	2.8	2.7	2.4	2.8	2.8
Too expensive	2.9	2.7	2.4	2.9	2.9
Wait a long time to board	3.2	2.9	2.8	3.2	2.7
Services do not go where I want	2.9	2.6	2.0	2.5	2.3
Have to use more than one vehicle	2.9	2.7	2.2	2.5	2.6
Cannot travel at time I want to	2.8	2.6	2.0	2.5	2.4
Travel is unsafe	2.8	2.6	2.2	2.7	2.5

Long journey times
Long wait for services – Undersupply

Cost
Service patterns not aligned with travel patterns

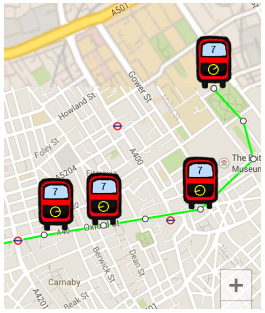
Improving Service Standards = increasing costs



Increased service levels typically come up higher operating cost.

Can the (current) fare support higher service levels?

New Opportunities for Measuring Performance



1. On Board GPS

- Operated kms
- Service levels (frequency/headways)
- Average operating speeds
- Route alignment (eg evidence of ‘short-short’ operation)

2. Automated Ticketing System

- Farebox revenue (by vehicle and route)
- Average yield
- Ridership by route
- Operating productivity (average loading)

Possible initial KPI options

Dimension	Indicator	GPS	AFCS	Survey	Other
Network	No of Routes				✓
	Network kms				✓
	Fleet Size				✓
	Average age of vehicles				✓
Ridership	Boardings		✓		
	Passenger kms		✓	✓	
Operational Performance	Operated kms (by route/network	✓			
	Operated hours	✓			
	Average bus speeds	✓			

Possible initial KPI options

Dimension	Indicator	GPS	AFCS	Survey	Other
Operational Performance	Vehicle loadings/occupancy	✓	✓		
	Passengers/bus/day	✓	✓		
	Hourly frequency (peak/off-peak)	✓			
	Reliability (SD of journey time)	✓			
Safety & Security	Reported accidents / km	✓			✓
	Reported incidents/1000 trips		✓		✓
Environmental	Average vehicle emissions/km	✓			✓
	Total CO2 emissions	✓			✓

Roadmap to Implementation

1. Identify Objectives for KPI development
2. Establish sources of data available/feasible to collect
3. Define KPIs — Singapore example
4. Use initial data to establish baseline indicator values
5. Set targets according to objectives
6. Regularly review indicators and add new indicators as necessary

Q & A

1. Is there a plan to include minimum service level requirements within the new franchise?

– What form? Need to monitor compliance – KPIs.

2. Is there a desire to incentivise performance – possible mechanisms?

– Franchise extension

– Qualification criteria for future franchise bidding

More Information – Performance Indicator Guidance

1. GIZ – Measuring Public Transport Performance

– http://www.sutp.org/files/contents/documents/resources/B_Technical-Documents/GIZ_SUTP_TD9_Measuring-Public-Transport-Performance_EN.pdf

2. PPIAF/World Bank Urban Bus Toolkit – Benchmarks and Indicators

– https://ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/toolkits/UrbanBusToolkit/assets/1/1c/1c.html

3. Transportation Research Board Guidebook for Developing a Transit Performance-Measurement System

– http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_report_88/Guidebook.pdf

More Information – Case Studies

1. International Bus Benchmarking Group

– http://busbenchmarking.org/

2. Transport for London

– Bus Performance Monitoring

– https://tfl.gov.uk/corporate/publications-and-reports/buses-performance-data

– Example Framework and Route Contract

– http://content.tfl.gov.uk/metroline-bus-contract.pdf

3. Seoul

4. http://www.iea.org/publications/freepublications/publication/Renewed_Cities_WEB.pdf

– http://www.wctrs-society.com/wp/wp-content/uploads/abstracts/lisbon/selected/03143.pdf

END