Public Transport Organisation in Germany
Contract awarding and management

Transit Alliance and Contract-based Transit Service

13. July 2016, Foshan
Marc Gorter, Dennis Günthel
Agenda

Contracting in Public Transport

1. Fundamental questions

2. Awarding PT contracts

3. Managing PT contracts
In Europe and Germany increasingly commercial companies competing for tendered services with financial compensation.

City Transportation still mainly by direct award to municipal operator.

European Regulation requires:
- conclusion of a *Public Service Contract* and
- in principle its *competitive awarding*, but with direct award exceptions.
Fundamental questions

Public Service Contract – Basic Principle

**former PT financing**

- **authority**
- compensation
  - ex post deficit coverage
- delivery of PT service for passengers – no clear obligations

**operator**

**contractual financing**

- **authority**
- compensation
- ex ante definition, parameters
- delivery defined PT service for passengers

**Contract:** rules the relationship between the contract parties and their cooperation

**Efficient and transparent spending of tax payers money**

**Clear mutual obligations / rights PTA and operator**
Fundamental questions

Important issues at the start of contract design

To achieve a good contract in the end, start off contract design by clearing aims and other fundamental issues!

- **Aims**: What shall be achieved?
- **Scope** of the services to be delivered?
  - Operations / provision of infrastructure / vehicles
  - Modes: suburban rail, metro, tram, bus, ...
- Appropriately **allocation of competences and duties?** Operator merely carrier or also PT management / coordination tasks?
- Which partner can / shall bear which **risk**?
  - Investment and financing costs – vehicles, infrastructure
  - Operational costs – personnel, fuel/energy, ...
  - Revenue risks – gross und net cost contracts
- **Contract duration** – dep. on modes, assets, planning (un)-certainties

substantial impact on service obligations and monitoring!
### Fundamental questions

#### Typical policy aims related to public transport

<table>
<thead>
<tr>
<th>Transport policy</th>
<th>Social policy</th>
<th>Environmental policy</th>
<th>Structural/economic policy</th>
<th>Budgetary aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure mobility</td>
<td>People with limited mobility</td>
<td>Reduce emission of pollutants, e.g. reduction of global warming gas emissions</td>
<td>Land-use policy</td>
<td>Amount of money spent by the PTA on PT</td>
</tr>
<tr>
<td>Increase market share of public transport within the intermodal market</td>
<td>People with low incomes</td>
<td>Noise reduction</td>
<td>Site-related factors</td>
<td>Possibly savings in other sectors, e.g. avoidance of roads and parking facilities</td>
</tr>
<tr>
<td>Link individual with public transport</td>
<td>Young and elderly</td>
<td>Quality of life in urban areas</td>
<td>Regional structure</td>
<td>Incentives to increase efficiency</td>
</tr>
<tr>
<td>Enhance total transport situation</td>
<td>Pupils, students and apprentices</td>
<td>Protection of vulnerable rural areas</td>
<td>Location trends</td>
<td>Willingness / possibility to bear financial risk by the authority</td>
</tr>
<tr>
<td>Traffic safety</td>
<td>Accessibility for all sections/generations of the population</td>
<td>Efficient energy use</td>
<td>Support for small and medium sized enterprises</td>
<td></td>
</tr>
<tr>
<td>Reduce mobility costs</td>
<td>Employees of the operator</td>
<td>space consumption</td>
<td>Infrastructure policy; establishing capacities, regulations for use and financing the public transport infrastructure</td>
<td></td>
</tr>
</tbody>
</table>

Fundamental questions

Scope of the contract

<table>
<thead>
<tr>
<th></th>
<th>Bus</th>
<th>Tram</th>
<th>Metro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicles</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Infrastructure</td>
<td></td>
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<tr>
<td>...</td>
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<td></td>
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</tbody>
</table>

Germany & Europe: numerous models & variations; need for further development especially regarding infrastructure provision / maintenance

Exemplary considerations

- Combine modes in 1 contract (licence) if operator shall have PT management competencies and carry revenue risks
- Separate bus networks from rail (and split into subnetworks) if competitive pressure in operations tendering is wanted
- Natural monopoly rail infrastructure shall be separated from rail operations tenders
- Separating vehicle provision from operations increases competitive pressure, but also leads to more interfaces and complexity
Fundamental questions

Classification of contract regimes

Risk carried by authority

No option area

Gross contract

Net contract

Licence/Concession

Deregulation

Level of detail decided by authority

Fundamental questions

Who should be responsible for which tasks?

<table>
<thead>
<tr>
<th>Setting of PT objectives and targets</th>
<th>Foshan City</th>
<th>District Transport Community</th>
<th>PT operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design of PT network and routes</td>
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<td></td>
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<tr>
<td>Setting the requirements concerning...</td>
<td></td>
<td></td>
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<tr>
<td>... service hours and service frequencies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... the vehicle/fleet quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... service reliability/punctuality</td>
<td></td>
<td></td>
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<tr>
<td>... friendliness of the staff</td>
<td></td>
<td></td>
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<tr>
<td>Timetables</td>
<td></td>
<td></td>
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<tr>
<td>Setting the fare structure and level</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Setting the sales structures</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Information/Communication</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Operation of the services</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Categories e.g.:
- Decision, advice, coordination, participation/discussion, ...
- Basic standards vs. elaborations
Fundamental questions

Risk allocation – production costs

In principle, the operator shall carry production cost risks

But: Price adjustment if relevant input factors change, e.g.:

- Fixed price per timetable km or hr, adaptation in line with labour and fuel costs development (e.g. national or province indices)
- Annual adjustment of price [¥ / timetable km] or [¥ / timetable hr] according to calculation sheet (as delivered with the offer)

Only external influences shall lead to price adjustments!

And: PTA may decide to take over further risks if they are considered to be too high / too uncertain for operators

- reduction of risk premium
- stimulating the number of competing operators
Fundamental questions

Some basic options for price adjustments

1. Constant budget for contract term
2. Increasing budget for contract term based on calculation (e.g. 1% per year; includes risk premium)
3. Flexible budget = constant basic budget plus price adjustment for certain input factors (e.g. fuel)
Fundamental questions

**Revenue risk - Net vs. Gross Cost Contract**

<table>
<thead>
<tr>
<th>Net Cost Contract</th>
<th>Gross Cost Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs are covered by</td>
<td>Costs are covered by</td>
</tr>
<tr>
<td>- Fare revenue and</td>
<td>- Contractual payment</td>
</tr>
<tr>
<td>- Contractual payment</td>
<td></td>
</tr>
</tbody>
</table>

- **revenue risk borne by transport operator**
- **revenue risk borne by authority**
Fundamental questions

Net cost contracts - prerequisites

Prerequisites for a (well functioning) net cost contract

- High passenger / revenue potential
- Reliable long term transport policy and PT supply strategy
- Calculability of external influences (e.g. inhabitants Foshan and surroundings, factory areas and working places)
- Overall network or big subnetwork, demand mainly independent of other (sub)networks
- Long contract duration
- Tariff development defined in advance (or at least agreements on revenue effects of fare changes; elasticity → next slide)
- Fair, transparent and fast revenue distribution (→ presentation „Transport Associations“)
Fundamental questions

Net cost contracts – Advantages, drawbacks

+ 
- Market incentive for operator initiative, good services and quality
- „Lean“ quality management

- Prerequisites (see previous slide) hardly ever fulfillable
- If fulfilled for the most part, major operator risks remain
  - high risk premium
  - high market entry barrier

Appealing in principle but major drawbacks in practice

Observation: general plead of PT companies for revenue responsibility, but lower participation in net cost tenders
### Fundamental questions

**Contract design: options to describe PT services**

<table>
<thead>
<tr>
<th>Functional</th>
<th>Intermediate</th>
<th>Constructive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specification of the service output</td>
<td>Minimum standards and supporting guidelines</td>
<td>Detailed specification of the service input</td>
</tr>
</tbody>
</table>

#### Examples:

<table>
<thead>
<tr>
<th>Purely functional</th>
<th>Functional elements (intermediate)</th>
<th>Purely constructive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum travel time of 15 minutes from a bus stop to the city centre (within a densely populated area)</td>
<td>There has to be a direct service from the central station to the Exhibition Ground.</td>
<td>Line A leaves from the central station via [list of all stops] for the Exhibition Ground.</td>
</tr>
<tr>
<td>90% of the stations in the central district have to offer departures at least every half hour.</td>
<td>Buses have to be operated every 20 minutes during off-peak-periods (Monday to Friday).</td>
<td>The first departure from the central station (Monday to Friday) is at 5:05, the second at 05:25 ...</td>
</tr>
<tr>
<td>The waiting period at the central station shall not exceed 15 minutes for 80% of the passengers.</td>
<td>There has to be a seat for every passenger with a travel time exceeding 15 minutes. There are the following capacity restrictions: ...</td>
<td>The line has to be operated with low-floor articulated 4-door buses with a minimum of 63 seats.</td>
</tr>
<tr>
<td>75% of all passengers have to be satisfied with the cleanliness of the buses.</td>
<td>The vehicles are clean at the start of the line. Solid waste has to be removed at the end of the line.</td>
<td>Vehicles have to be cleaned daily. Solid waste has to be removed at the line end.</td>
</tr>
</tbody>
</table>
Agenda

Contracting in Public Transport

1. Fundamental issues

2. Awarding PT contracts

3. Managing PT contracts
Awarding PT contracts

Market entry – Reg. EC 1370 and German PT law

Authority initiative vs. market initiative

- Market entry depends on **authorisation** and, if financial compensation is necessary, on the award of a **contract***

- **Two different public authorities** are responsible:
  - the **regulatory authority** ("Genehmigungsbehörde") for authorisation
  - the **public transport authority** (PTA, "Aufgabenträger") for financing / contracting

- Market initiative is priority: The new German PT law ("PBeG") defines clear processes for the interaction of the authorities and operators regarding authorisation and contracting (see next slide)

- The authorisation results in a **de facto-exclusive right**

* One exemption according to Reg. EC 1370/2007: general obligations regarding tariff don’t require a contract.
Awarding PT contracts

Authority and operator initiated PT service

PTA
“Aufgabenträger”

plans contract for PT service

Publication (including required standards)

e.g. Timetable, fares/tickets and other standards

Operator
application for commercial transport

Regulatory authority
“Genehmigungsbehörde”

Does the application for the transport service fulfil the published standards by the PTA?

yes

Authorisation; if more than one application: Competition for authorisation (“best transportation offer”)

no

no application or all applications rejected

Operator (public service contract)

Operator (competitive or direct awarding)

Operator ("market initiated")

Awarding procedure PTA

after PTA publication three-month-period for applications for “market initiated” services starts

e.g. Timetable, fares/tickets and other standards
Agenda

**Contracting in Public Transport**

1. Fundamental issues

2. Awarding PT contracts

3. Managing PT contracts
   1. Development during contract lifetime
   2. Performance monitoring and incentives
Managing PT contracts

Development during the contract

Some reasons for service changes during contract lifetime

- Demography, settlement structures …
- Changes in travel patterns, passenger needs
- Budgetary constraints
- …

Service changes might be legitimate only if the contract design allows such changes!

Implementation of changes, discussion of changes, potentially adaptation of service level, quality standards, financial consequences

Discussion regarding market development (and regarding appropriate reactions)
Managing PT contracts

Example Berlin – Annual timetable update

- PTA SenStadtUm defines adjusted framework specifications for the timetable (e.g. service frequencies, service times, line configurations) consistent with PSO contract
- Municipal transport operator BVG suggests a ‘rough’ time-table draft for every line
- SenStadtUm assesses the drafted timetable based on local transport plans standards
- BVG develops a detailed timetable and applies for the authorisation of the timetable
- SenStadtUm assesses and authorises the detailed timetable

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BVG = Berliner Verkehrsbetriebe; LTDP = Local Transport Development Plan
Agenda

Contracting in Public Transport

1. Fundamental issues

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3. Managing PT contracts
   1. Development during contract lifetime
   2. Performance monitoring and incentives
Managing PT contracts

Service monitoring/quality incentives necessity

- ‘Hard’ service provision (reliability, punctuality, technical standards)
- ‘Soft’ service quality (e.g. cleanliness, service quality, staff behaviour, driving style)

The performance of the operator must comply with the stipulations of the contract. No / bad performance shall not be economically beneficial for the operator → appropriate financial incentives

Monitoring, reporting, enforcement measures, financial incentives
Managing PT contracts

Quality measurement, bonus/penalty system

Controlling of transport performance and quality:

- Operator reports regularly on delivered transport services and achieved qualities
- PTA: completeness / plausibility & sample checks, (access to raw data)
- After final controlling / approval: exact determination of compensation payments

(Pre-defined) target: Desired status/result/quality of services
Tolerance range: Deviations (positive/negative) from the target without bonus or penalty
‘Bonus range’: A service provision above the tolerance range results in a bonus payment
‘Penalty range’: A service provision under the tolerance range results in a penalty
cap: Negative deviations beyond \( z\% \) are not accepted; further contractual penalties, ultimately premature termination

e.g. punctuality rate: 87% 91% 92% 93% 97%
Managing PT contracts

**Key indicators – example BVG contract (Berlin)**

<table>
<thead>
<tr>
<th>Service Level (p.a.)</th>
<th>Quality Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>U-Bahn: 20,44 Mio. Train-km</td>
<td>Quality criteria, e.g. regularity, punctuality, connections</td>
</tr>
<tr>
<td>Tram: 20,10 Mio. Train-km</td>
<td>Definition for each criteria</td>
</tr>
<tr>
<td>Bus: 88,64 Mio. Vehicle-km Ferry: 18,366 Operating hours</td>
<td>Target values for each criteria</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compensation Payments (p.a.)</th>
<th>Controlling</th>
</tr>
</thead>
<tbody>
<tr>
<td>85,7 Mio € for transport services,</td>
<td>BVG measures its services continuously using both objective data as well as annual costumer surveys</td>
</tr>
<tr>
<td>72,0 Mio. € for applying reduced tariffs school transport, elderly, socially deprived</td>
<td>Data is submitted to CNB for monitoring and validation, calculation bonus / malus</td>
</tr>
<tr>
<td>194,3 Mio € for infrastructure maintenance, incl. 5,1 Mio € for strengthening security measures</td>
<td>Data is also used for:</td>
</tr>
<tr>
<td></td>
<td>– Planning purposes</td>
</tr>
<tr>
<td></td>
<td>– Financial planning</td>
</tr>
<tr>
<td></td>
<td>– Reporting to parliament and public</td>
</tr>
</tbody>
</table>
## Managing PT contracts

### Key indicators – example BVG contract (Berlin)

<table>
<thead>
<tr>
<th>Definition</th>
<th>Required Level of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regularity (objective data)</strong> Scheduled service is operated within the defined operating frequency and max. 10 min after scheduled departure</td>
<td>Target values currently discussed</td>
</tr>
</tbody>
</table>
| **Punctuality (objective data)** A service is operated in time interval 90 sec before - 210 sec after scheduled departure | Underground: 98.7%  
Tram: 91.7%  
Bus: 87.1%                                                        |
| **Connecting Services (objective data)** Maximum waiting time for defined connecting services 5 min. | Underground: 99.0%  
Tram: n.d.  
Bus: n.d.                                                         |
| **Infrastructure (objective data)** Maintaining the quality of the infrastructure so that services can be provided at required level | Underground: < 0.5%  
Tram: < 0.8%  
... of network subject to speed reduction caused by quality issues |
| **Passenger Satisfaction (surveys)** Target values set for individual criteria (→ next slide) | Different values per criteria/mode                                 |
Managing PT contracts

**Key indicators**

**Operations**
- Reliability
- Punctuality
- Connections

**Personnel**
- Pleasant driving
- Service, friendliness and appearance of staff

**Vehicles**
- Age
- Comfort: seat number and quality, hand rails
- No breakdowns, damages
- Cleanliness
- Accessibility for PRM: low floor entrance, kneeling, even floors, wheelchair place
- Environmental standards: Exhaust gas, noise emissions
Managing PT contracts

Key indicators

**Passenger Information**

**General requirements**

- Regular info and – at least as important - in case of irregularity
- Static & dynamic
- Integrated: whole system / area of the transit area, not just for own company

**Specific requirements**

- Maps, line plans with connections, timetables, tariff information
- Technical standards displays front & in vehicle, colours/contrast, number of lines / characters
- Functioning of displays
- Hotline, Passenger Information App
Managing PT contracts

**Key indicators**

**Bus stations**
- Rain shelter
- Passenger information – also static & dynamic, timetable & tariff, integration

**Further aspects e.g. social security**
- Video surveillance
- Appropriate reaction of drivers in case of emergency
- Ticket control
- Cooperation with police
Managing PT contracts

Classical approaches and current developments

The granting of financial subsidy, exclusivity or other support by the authority to the operator usually compensates for obligations defined by the authority. Control of the discharge of these obligations is necessary!

Different approaches

- through classical incentive and control mechanisms
- via the use of (more or less) self-regulating mechanisms

and/or
### Managing PT contracts

#### Classical approaches – limitations

<table>
<thead>
<tr>
<th>classical incentive &amp; control mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>revenue incentive</td>
</tr>
<tr>
<td>ridership incentive</td>
</tr>
<tr>
<td>bonus / malus hard criteria reliability,</td>
</tr>
<tr>
<td>punctuality, ... (DPM)*</td>
</tr>
<tr>
<td>bonus / malus „soft“ criteria cleanliness,</td>
</tr>
<tr>
<td>service, ... (MSS, CSS)*</td>
</tr>
</tbody>
</table>

### Limitations

- Net cost contract: requirements for effective incentive often not fulfilled
- DPM: useful mostly for reliability, punctuality; less for most other criteria
- MSS – high costs; objective definitions in line with passenger perception?
- CSS – high costs; attribution of results to lines / operators? Correlation satisfaction with actual quality?
- Standards/incentives fragmented/static

DPM = direct performance measurement, MSS = mystery shopping, CSS = customer satisfaction survey
Managing PT contracts

Classical approaches, current developments

**Classical incentive & control mechanisms**
- Revenue incentive
- Ridership incentive
- Bonus / malus hard criteria reliability, punctuality, ... (DPM)*
- Bonus / malus „soft“ criteria cleanliness, service, ... (MSS, CSS)*

**Newer, self regulating mechanisms**
- Bonus PTA satisfaction
- Publication of performance indicators
- Generic obligation to tackle service and quality problems
- (Service guarantees for passengers)

DPM = direct performance measurement, MSS = mystery shopping, CSS = customer satisfaction survey
Contracting | Contract management

**Instruments to eliminate the shortcomings of ‘classical approaches’ - examples**

<table>
<thead>
<tr>
<th>Instruments (examples)</th>
<th>Application Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance-based contracts</td>
<td><strong>Stadsregio Amsterdam/The Netherlands</strong></td>
</tr>
<tr>
<td>Communication authority-operator regarding the further</td>
<td>2. generation of Swedish contracts, many contracts in The Netherlands: joint</td>
</tr>
<tr>
<td>development of service quality</td>
<td>development teams</td>
</tr>
<tr>
<td>Agreed actions for achieving high service quality and</td>
<td><strong>Helsingborg/Sweden, Copenhagen/Denmark</strong></td>
</tr>
<tr>
<td>demand growth</td>
<td>Quality Partnerships (GB)</td>
</tr>
<tr>
<td>Incentive for satisfaction of the local authority</td>
<td><strong>Many contracts in The Netherlands</strong></td>
</tr>
<tr>
<td>Influence over the management / target agreement</td>
<td><strong>Pforzheim/Germany</strong></td>
</tr>
<tr>
<td>Award criteria demand growth / customer orientation</td>
<td><strong>Current considerations in Germany</strong></td>
</tr>
<tr>
<td>Customer guarantee</td>
<td><strong>VBN Bremen, VVO Saxony, NVV Kassel/Germany</strong></td>
</tr>
<tr>
<td>Transparency</td>
<td><strong>Pforzheim/Germany and many more</strong></td>
</tr>
</tbody>
</table>

Cooperation is seen as an important field for improvement!
Thank you.
Contact

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<thead>
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</thead>
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<td>Web:</td>
<td><a href="http://www.kcw-online.de">www.kcw-online.de</a></td>
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