Development Strategies for Public Transport in Berlin

Dr. Friedemann Kunst
1. Berlin Today

2. Role of Public Transport

3. The Future of Public Transport: Transport Policy and Strategy

4. From Strategy to Local Transport Planning: The Planning System
Berlin – Structural Data

- Area: 892 km²*
- Inhabitants: 3,375,000*
- Number Employed: 1,759,200*
- Unemployment Rate: 12.3%*
- Motorisation: 324 cars/1,000 inh.**
- 45% Carfree Households**

* Amt für Statistik Berlin-Brandenburg. Stand 2012
** SrV 2008

Berlin is the biggest city in Germany by far, and it is both, city and a federal state.
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Metropolitan Mobility

Modal Split

- 1/4 of daily trips by public transport
- 2/3 of daily trips by „environmental alliance“ (PT, Bike, Pedestrians)

“Environmental Alliance” is first choice for most daily trips in Berlin. Yet there are notable distinctions between the different districts.
Dense Integrated Public Transport Network

Suburban rail (rapid transit) network: 257 km; stops: 133

Underground: network 145 km; stops: 173

Tram network: 190 km, stops: 374

Bus network: 1,180 km, stops: 2,482

Not shown in map: Regional Trains network: 213 km, stops: 21

Total network length of about 1,900 km, equaling the distance Berlin – Moscow.
Excellent Utilisation

Development Strategies for Public Transport in Berlin | Role of Public Transport

No. of passengers on an average working day

Passenger Volumes

Bus
Tram
Underground
Suburban Rail

Data: Transport Survey 2007, Senate Department for Urban Development Berlin
Data evaluation: Center Nahverkehr Berlin
Graphic: VMZ Berlin
Main Characteristics of Public Transport I

- Increasing demand and passenger numbers:
  - Passenger numbers 2012: 1.3 Billion
  - Development 2007 - 2012: ca. 1 per cent increase p.a.
- Integrated use of public transport and cycling
  - more than 28,700 bicycle stands on S- and U-Bahn stations to facility Bike+Ride
  - additionally: possibility to take bicycle on board of trains, bike sharing schemes
Main Characteristics of Public Transport II

- **Accessibility standard**, i.e. max. distance to a PT-stop with a service frequency of min. 20’ in off-peak-hours:
  - 300 m for densely developed areas
  - 400 m for sparsely developed areas

- **Connection standards**, i.e. max. travel time to defined areas:
  - 60 min to Central Areas City West and Mitte (Alexanderplatz)
  - 40 min to Main Centres
  - 30 min to District and Local Centres

- **Service standards**, i.e. min. frequency at peak | off-peak times:
  - S-Bahn, Underground, Metro-Lines (Bus, Tram) 10’ | 10-20’
  - Bus, Tram: 20’ | 20-30’
  - Regional trains: 60’ | 120

Achieved for:
- 86% of inhabitants during day-time hours
- 83% of inhabitants during night-time hours

Achieved for virtually all stations, only few justified exceptions

Achieved on all lines, with the (justified) exception of a few very sparsely populated areas
Main Characteristics of Public Transport III

- Definition of Quality Standards for main quality criteria, i.e.
  - Reliability
  - Punctuality
  - Barrier-free Accessibility

- Continuous monitoring
- Penalties / sanctions for failure to comply
### Main Characteristics of Public Transport IV - Quality Criteria and Standards

<table>
<thead>
<tr>
<th></th>
<th>Definition</th>
<th>Target-value</th>
<th>Malus</th>
<th>Bonus</th>
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<tbody>
<tr>
<td>Reliability</td>
<td>Scheduled services take place</td>
<td>• Bus: 99.8 %</td>
<td>Services that did not run are not being paid for</td>
<td>--</td>
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<tr>
<td></td>
<td></td>
<td>• Underground, Tram: 99.7%</td>
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<tr>
<td>Punctuality</td>
<td>Service departs</td>
<td>• Underground: 97%</td>
<td>If performance falls below:</td>
<td>If performance exceeds:</td>
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<tr>
<td></td>
<td>• No more than 3.5 min behind schedule</td>
<td>• Tram: 91%</td>
<td>• U-Bahn: 95%</td>
<td>• U-Bahn: 98.5%</td>
</tr>
<tr>
<td></td>
<td>• No more than 1.5 min before schedule</td>
<td>• Bus: 87%</td>
<td>• Tram: 89%</td>
<td>• Tram: 94%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Bus: 85% for every 0.5% shortfall 220,000 € will be deducted from payments</td>
<td>• Bus: 90%</td>
</tr>
<tr>
<td>Dependable</td>
<td>Maximum waiting time 5 minutes at defined stations / connecting points.</td>
<td>• Underground: 99%</td>
<td>Passenger satisfaction; Malus and bonus are yet to be developed</td>
<td>--</td>
</tr>
<tr>
<td>connections</td>
<td></td>
<td>• Bus, Tram: yet to be determined</td>
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Public Transport Demand

Large increase in number of senior citizens >65 years
- 2011: 664,249
- 2030: 857,836
→ increase of + 29%

Slight decrease in working-age population 18 - 65 years
- 2011: 2,319,377
- 2030: 2,313,994
→ decrease of - 0,2%

Increase in number of young people <18 years
- 2011: 518,246
- 2030: 583,728
→ increase of + 13%

Changes in user groups due to population change.
Public Transport Demand

Number of reduced fare tickets sold in 2012:

- 1.7 Mio. reduced tickets for people on low income (Berlin-Ticket-S)
- 2.5 Mio. monthly tickets / subscriptions for educational purposes (school kids, vocational trainees)
- 6.8 Mio. reduced fare single / day tickets (mainly school kids)

Social Developments

high share of cost-sensitive users with low mobility budgets
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Structure and Contents of the Transport Masterplan

- Results and experiences of previous strategy
- Long-term overarching objectives, e.g.
  - Energy
  - Climate Protection
  - Safeguarding Mobility
- Guidelines of related policy field
  - Urban Development
  - Environment
  - Economy
- Framework Conditions
  - Population
  - Spatial Structure
  - Finances

Analyses and Forecasts

Guiding Vision (integrated)

Aims (12 quality Aims, 4 dimensions)

Strategy (7 partial strategies)

Impact Assessment / Evaluation

Measures (5 different categories)

Infrastructure Long-term options
Strategies are not just related to transportation as such, but they also address framework for travel, transport means, external affects.

Each strategy combines a bundle of measures including:
- Urban Space and Structure
- Organisational aspects
- Pricing policies / regulative measures
- Improvement of information / motivation
- Infrastructure
Supporting the Environmental Alliance

Main measures to support and enhance public transport:

- Concentration of spatial development along transport axes and within the catchment area of existing infrastructure (stops/stations)
- Extension of infrastructure (S-Bahn, underground, tram) and improvement of network links
- Renewal of vehicle fleets (tram, busses, underground, S-Bahn)
- Higher service frequency in areas / on routes with high demand
- Improvement of options for integrated use of public transport, cycling, car sharing
- Improved availability of real-time information for all modes and intermodal use
For Example: 
Extension of Underground Line U 5

- Closure of network gap
- Densification of the network
- Improving connection from/to peripheral areas in the eastern city to inner-city centre

For Example:
Extension of Underground Line U 5

Hautbahnhof

Alexanderplatz

Completed / Operating
Under Construction
For Example:
Expected Changes in Transport Demand...

- Population increase in inner city and eastern part of the city will increase transport demand
- Further drivers of demand increase:
  - growing number of tourists
  - positive economic development
  - spatial developments (new residential and working areas as well as qualification of existing build-up areas)
Development Strategies for Public Transport in Berlin | The Future

For Example

... and Improved Transport Provision in Reaction

- Increased frequencies all over the network
  - weekends and late-hours
  - better utilisation of existing network capacity
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The Planning System

Urban Transport Development Plan (StEP)
- Safeguard equal mobility chances for all
- Increase modal share of public transport as part of the environmental alliance
- Reduce energy use and greenhouse gas emissions / noise

Local Public Transport Plan (NVP)
- Max. walking distance to next PT-stop
- Service hours in line with people’s needs
- Fast, direct, reliable, connections
- Barrier-free accessibility
- Vehicle Fleet and use

Accessibility Standards
Service / Quality Standards
Vehicle Standards

Implementation through Transport Contracts and Joint Planning of Services (Timetable-Level) by PTA and Transport Operators
Public Transport Spending

Actual Public Payments for PT-Provision in 2011

- **BVG, out of which:**
  - 1a - for transport services: 77.0 Mio €
  - 1b - for infrastructure maintenance: 178.8 Mio €
  - 1c - compensation for reduced tariffs: 97.5 Mio €

- **S-Bahn:** 193.8 Mio €

- **Regional Trains (all operators):** 48.8 Mio €

**Total:** 595.9 Mio €

Data: ÖPNV-Gesamtbericht des Landes Berlin 2011
Thank you for your attention.

www.stadtentwicklung.berlin.de/verkehr
Public Transport Organisation

Senate Department (SenStadtUm) as public transport authority (PTA)

- Responsibilities include transport planning, organisation and financing
- Transport contracts detail transport volumes and service qualities that operators have to provide
- Compensation payments are subject to achieved level of performance
- Different „price tags“ for individual transport modes: agreed cost per vehicle km and operating hour
Public Transport Demand

Shifts in Travel Patterns

• Higher demand in late hours / at night as well as on weekends
• Shifting peak times (see graph)
• Off-peak hours with increased passenger volumes

Reasons:
• Changing working environments
  – more flexible working hours
  – working in different (part-time) jobs
• Longer opening hours of shops
• General lifestyle trends

Example for shifting travel time patterns
• Tram Line M2, connecting north-eastern residential areas to inner city (Alexanderplatz)
  • Overall increase in passenger volumes
  • Morning peak starts later
  • Evening peak starts earlier and lasts longer into late hours
NVP Measures: Underground, Bus, Tram 2009 - 2011

- Increase of frequencies mainly for railbound-modes (underground, tram)
  - Experience most dynamic demand growth
  - Attractive modes, able to gain further shares
- Differentiated view on buses:
  - direct (metro and express) routes see strong growth and require higher service frequency
  - routes for local services: growth less dynamic, but routes are important for access to network and for local transport demands
- Regional trains (not shown in graph): improvement of links to surrounding metropolitan area