Integrated Planning, Institutions and Transit Authorities

Manfred Breithaupt
GIZ – Water, Energy, Transport
Unattractive public transport systems

- Insufficient physical integration of various public transport modes and between public transport, walking, cycling and private car
- No integrated and transparent time schedules
- Signage, customer information on timetables, connecting services and fares not appropriate

→ discouraging the use of public transport
Unattractive public transport systems

- Insufficient cooperation between public transport operators
- Each change of mode normally requires the purchase of another ticket
- No uniform service level standards among modes and operators
What do citizens want?

- Convenience
- Easy Access
- Comfort
- Frequent Service
- Rapid journey
- Safety & Security
- Customer Service
- Affordability
- Have a network

Public Transport should be designed around the customer and not around a technology.
Conventional Public Transport Planning Approach

Step 1. Choose technology

- Technology chosen due to manufacturer lobbying efforts
- Design chosen to please existing operators
- Technology chosen to help property developer

Step 2. Fit city to the technology

- Reduce size of network due to financing limitations
- Charge higher fares in attempt to pay for expensive system
- Operate infrequent services to reduce operating losses
- Require large subsidies for lifetime of system’s operation

Step 3. Force customer to adapt to technology

- Extensive marketing campaign to convince customers that system is in their interest
- Operate infrequent services to reduce operating losses
The innovative and successful approach

Step 1. Design a system from customer’s perspective
- Rapid travel time
- Few transfers
- Frequent service
- Short walk to station from home / office
- Full network of destinations
- Safe vehicle operation
- Secure environment
- Comfortable and clean system
- Friendly and helpful staff
- Low fare cost

Step 2. Evaluate customer-driven options from municipality perspective
- Low infrastructure costs
- Traffic reduction benefits
- Environmental benefits
- Economic / employment benefits
- Social equity benefits
- City image

Step 3. Decision
Technology decision based on customer needs and municipality requirements
Improving mobility through the A-S-I approach

**AVOID**

- **P** Pre: Planning instruments
  - Land use planning, planning/providing for public transport and non-motorised modes.

- **R** RE: Regulatory instruments
  - Physical norms and standards, traffic organization, production processes.

- **E** EI: Economic instruments
  - Fuel taxes, road pricing, subsidies, purchase taxes, fees and levies, emissions trading.

**SHIFT**

- **P** Pre: Non-motorised transport
  - Walking and cycling.

- **R** RE: Public motorised transport
  - Public Transport - Bus, rail.

- **E** EI: Individual motorised transport
  - Car, motorcycles, taxi.

**IMPROVE**

- **R**EI: Available Instruments
  - (P) Planning instruments
  - (R) Regulatory instruments
  - (E) Economic instruments
  - (I) Information instruments
  - (T) Technological instruments

**Decision to travel or not to travel and by which mode affects fuel consumption, and therefore carbon emissions, congestion, accidents, etc.**

Number of vehicles, level of congestion, driver behaviour, vehicle condition, fuel type.

**NEGATIVE EXTERNALITIES**

Source: Adapted from Dalkmann and Brannigan (2007)
Under-resourced institutions, lacking in overall capacity to plan, execute, maintain and deliver affordable sustainable urban transport.

Fragmented policy formulation and implementation with lack of co-operation among multiple ministries and transport agencies.

Lack of finances for transport infrastructure and public transport services resulting in extensive institutional and governmental support, concessions and subsidies.

Insufficient financial procedures and accounting/audit systems.

Procedural constraints that impede the delivery of urban transport infrastructure and services.

Inadequate legal and enforcement frameworks and capacities needed for urban transport and land-use developments.

Absence of comprehensive information systems, disclosures and public participation.

Source: Adapted from Jain, 2011
Administrative and Governance Issues

- Overlapping or fragmented institutional responsibilities
- Horizontal co-ordination and vertical integration between departments has always been a challenge
- **Lack of a single lead authority** to provide direction and decision-making leads to chaos and confusion among other actors involved
- Regularly changing organizational arrangements
- Countless committees and meetings with many times questionable outcomes
- City governments often do not see urban transport as a basic municipal service/responsibility (like water, sanitation) and hence do not work towards its planning and provision.
Multiple Actors (an Example)

- **Centre-level**
  Ministries (Road transport and Highways, Urban Development, Railways, Heavy Industries, Environment, Home, Housing and Urban Poverty Alleviation, Finance, Petroleum and Natural Gas) – policy making, financial assistance, standard setting
  Planning Commission- Five year plans

- **State-level**
  Transport Department- Vehicle licensing and registration; emission norms
  State Transport Undertakings- Inter and intra city Public transport (bus) provision
  State Development Authorities- carry out city and satellite town planning
  The Public Works Department- has responsibility for roads and bridges in the cities
  Pollution control board- enforces emission norms
  Labour department- enforces labour laws
  Finance Department- budgetary allocations, impose and collect different taxes

- **City-level**
  Local municipal government- provides roads, infrastructure like bus stands, regulates traffic along with Traffic Police, controls construction, etc.
  Local city development authority-discharges town planning functions
  Traffic Police-regulates traffic
  Departments or SOE s plan and manage bus operations
Transport Planning in Germany

European Space Dev. Planning

Federal Space Dev. Planning

States Dev. Planning

Regional Dev. Planning

Municipal Dev. Planning

Interlinked Planning System

Source: Institut für Stadtplanung und Städtebau der Universität Duisburg-Essen
Urban mobility planning allows to overcome antiquated paradigms of transport planning

<table>
<thead>
<tr>
<th>Traditional Transport Planning</th>
<th>Sustainable Urban Mobility Planning</th>
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<tbody>
<tr>
<td>Focus on traffic</td>
<td>Focus on people</td>
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<tr>
<td>Primary objective:</td>
<td>Primary objectives:</td>
</tr>
<tr>
<td>Traffic flow capacity and speed</td>
<td>Accessibility and quality of life</td>
</tr>
<tr>
<td>Political mandates and planning by experts</td>
<td>Important stakeholders are actively involved</td>
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<tr>
<td>Domain of traffic engineers</td>
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<tr>
<td>Infrastructure as the main topic</td>
<td>Combination of infrastructure, market, services, information, and promotion</td>
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<tr>
<td>Investment-guided planning</td>
<td>Cost efficient achievement of goals</td>
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<td>Cost efficient achievement of goals</td>
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</tbody>
</table>

„If you plan for people and places, you get people and places.“

„If you plan for cars and traffic, you get cars and traffic.“

Source: Rupprecht Consult, quotations by Fred Kent, President of „Project for Public Space“:
An Urban Mobility Plan is a planning tool which comprises objectives and measures oriented towards safe, efficient and accessible urban transport systems.

✓ Can reveal the real challenges a city faces
✓ Offers the exploration of different development scenarios
✓ Preparation process can help diverse stakeholders to rally around a common vision for their urban transport system

... facilitates the development of a feasible and powerful strategy to tackle mobility challenges
Cities can’t improve everything at the same time!

- Clear priorities pay off in the short and long-term:
  - Investment priority should be given to public transport, walking, cycling & integration of different transport modes (Modal integration, transit-oriented/mixed land-use development)
- Investment priorities derive from national urban transport policy and urban mobility planning
- Capacity development for planning authorities, planning processes and civic participation pay off!

... allows for the more efficient use of scarce public funds
Chain towards Sustainable Transport Financing:

- A country’s sustainable development, climate & energy goals
- The country’s transport policy & strategy – including the national urban transport policy
- Institutions and a legal framework supporting these goals
- Transport taxation and charging policies (Where the money comes from?)
- Appropriate spending - based on standardized evaluation criteria, urban mobility plans (Where the money goes?)

Counter-productive counter measures, such as funding for private transport through cheap loans for buying vehicles, too low fuel taxes or even fuel subsidies, etc. should be avoided!
GERMANY – Transport Development Plans

- “non-obligatory” process - but required for receiving national funds for large-scale projects and as input for sectoral (obligatory) plans

- Transport Development Plans required for land-use planning and as base for further strategic planning documents, such as
  - Local/regional public transport plans
  - Cycling and Walking strategies
  - Commercial transport concepts (Freight plans)
  - Road Safety programmes
  - Noise reduction plans
  - Clean-air plans
Structure and Contents

- 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

Complex Structure:

Approaching different aspects individually
Combining measures in integrated strategic packages
Integrated impact assessment to identify missing topics

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

Example: Integrated Mobility Planning in Berlin
Target-Oriented, Interconnection of Strategy and measures – the example Transport Development Plan Berlin

Mission Statement 2040 (integrated)

- Targets
  - Ecologic
  - Economic
  - Social
  - Institutional

Strategies

- Promotion of Public Transport, walking, cycling
- Quality of Life and Environment
- Supporting commercial transport
- Mobility and traffic management
- Inner City Concept
- Regional Concept (Brandenburg)
- Intermodality

Measures

- Land Use
- Regulatory and price measures
- Organisational
- Communication
- Infrastructure

Source: „Planwerk StEP Verkehr“ (Overview)
Responsibility & Practice - examples

**Berlin:** City Transport Development Plan (Stadtentwicklungsplan Verkehr)

- Administrative project group
- Advisory Council
- Polit. parties (pol. Parties in City Council)
- Construction departments of city districts
- Economic Associations
- Public Transport Authorities (transit alliance, operators)
- Citizen Groups / NGOs and special interest groups

- Berlins TDP are coordinated with the responsible planning authorities of the state Brandenburg

Responsibility & Practice - examples

- **Dresden**: Verkehrsentwicklungsplan 2025 Plus
  - Voluntary city-region cooperation – Round table and planning approach involve surrounding communities
  - Further coordination with neighbouring transit alliances and planning authorities
Responsibility & Practice - Examples

-Regional cooperation **FrankfurtRheinMain** (Planungsverband Ballungsraum Frankfurt/Rhein-Main)
  - has the main responsibility of regional land-use planning
  - due to legislation, the cooperation is also obliged to organize the regional Transport Development Planning
  - Integrated regional transport modell and transport data base
    (Verkehrsdatenbasis Rhein-Main - VDRM)
EU - Sustainable Urban Mobility Plans (SUMP)

“… *strategic* plan designed to satisfy the *mobility* needs of *people* and *businesses* in *cities* and their *surroundings* for a better *quality of life*. It builds on existing planning *practices* and takes due consideration of *integration*, *participation*, and *evaluation* principles.”

A guideline for Urban Mobility Planning in EU

[www.mobilityplans.eu](http://www.mobilityplans.eu)
## Various financing options for different ranges of application

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Potential Building Blocks

... of sustainable urban transport financing

1. Explore role of provinces
   - Allocation of grants/subsidies

2. Coordinate responsibilities

3. Mobilise local funding options
   - Urban Mobility Plans
   - Funding Programs
   - Guidance for cities

National

Local
There is an urgent requirement for all metropolitan areas to develop integrated urban transport planning authorities (such as UMTAs), with the target to overcome fragmented and often unfocused planning by the previous multilevel horizontal and vertical Authorities.

Examples:
- LTA, Singapore
- TfL, London
- Many European Cities
- Curitiba
When developing a viable public transport Industry following factors are important:

- Necessity of **customer orientation** and evaluation of the quality of the public transport system
- Formulation of quality standards
- Instruments for quality control
- Sanctions and incentives
- Good image of public transport resulting from communication with customers
1. Urban Redevelopment Authority (URA): Spacial and Urban Dev Planning
2. LTA: providing basic transport infrastructure
3. Transport Regulator (Public Transport Council PTC)

- PTC is an independent body to safeguard the interests of passengers by ensuring adequate public transport, reasonable fares and at the same time ensuring the financial viability of operators
- PTC has 16 members from a wide cross-section of society and Public Transport Operators (PTOs) operate buses and trains
Key Functions of PTC

- Licensing of Bus Services
- Regulation of Bus Service Standards
- Regulation of Bus/Train Fares
- Licensing of Bus Service Operators
- Regulation of Ticket Payment Services
- Regulation of Penalty Fee
- Feedback & Communications
- Policy Review & Development
- Corporate Management & Services
Singapore

PT Passenger Satisfaction (%) in 2010

- Security & safety 91
- Accessibility 90
- Comfort 80
- Travel time 85
- Waiting time 68

In terms of percentage of overall satisfaction, 96% were satisfied with MRT services compared to 92.5% for bus services.
The central challenge is to ensure that system benefits are distributed among system users and operators.

"Traditional" System

- Low entrance barriers
- Over-supply
- Inefficiency / overcosts
- Low prices
- Bad service
- Losses

- Incapacity to invest
- Safety
- Travel times

Structured model

- Competition for the market
- Regulated supply
- Efficient operation
- Objective level of service
- Rentability
- Low prices

Slides developed originally by Dario Hidalgo
Bogota: Organisational structure and characteristics

Planning, management, and quality control
Public company

Infrastructure
Private sector
- Specifications developed by public sector
- Contracts awarded through competitive bidding

Fare collection
Private sector
- Concession awarded through competitive bidding
- Private operators are responsible for purchasing fare equipment and managing fare process

Busway operations
Private sector
- Concessions awarded through competitive bidding
- Private operators are responsible for purchasing vehicles and operating vehicles
Organizational structure and responsibilities

TRANSMILENIO S.A.
Planning, Management and Control

Infrastructure (Public)
- Corridors
- Stations
- Garages
- Complementary Infrastructure

Fare (Private)
- Equipments
- Smart Cards
- Trust Fund

Operation (Private)
- Multiple Companies on each trunk line.
- Buses
- Employees
# Assignment of financial responsibility between Public and Private Sector

<table>
<thead>
<tr>
<th>Service</th>
<th>Curitiba URBS</th>
<th>Bogota TransMilenio</th>
<th>Santiago TransSantiago</th>
<th>TransJakarta</th>
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</thead>
<tbody>
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<td>Bus Procurement</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Public (PhaseI)</td>
</tr>
<tr>
<td>Bus Operations</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Fare Collection</td>
<td>Public</td>
<td>Private</td>
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<td>Private</td>
</tr>
<tr>
<td>Trust Fund</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td>Public (gen.govt revenue)</td>
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<td>Control Center</td>
<td>Public</td>
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<td>Operational Planning</td>
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<td>Private (?)</td>
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<td>Setting the Fare</td>
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<td>System Design</td>
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Transit Alliances – Towards Fully Integrated Public Transport
History of public transport integration in Germany

Germany before 1970
- every transport company had its own tariff for local public transport
- no transparency in tariffs and no integrated coordination of schedules
- Tickets of different transport companies were not accepted by the others

Development since 1970

Phase 1
- **Tariff associations** (public transport companies accepting each others tickets leading to associated tariffs)

Phase 2
- **Transport operator associations** (coordination and increase of transport planning and marketing, coordinated timetables for public transport)

Phase 3
- **Transit Alliances** (contracts on tariffs, distribution of fare income and shared timetables)

Today:
Transit Alliances all over Germany (Austria, Switzerland, Netherlands, …)

* Adapted from TraffiQ
Public Transport Integration - Cooperation is the key!

Tariff and Transport Alliances

Transport operator associations
Voluntary or politically enforced cooperation
e.g. in terms of service and tariff planning
PuT companies operating in the area of association

Public Transport Regulatory Authorities
Integrated organisers of public transport
manage and develop services of different operators
All PuT services in a city or limited area

Transit Alliances
Integrated Organisers of Public transport in a wider region
Federal states (e.g. Bavaria)
Cities (e.g. Frankfurt) and Counties operating together

increasing complexity: several companies, tariffs, cities, counties, states etc. to integrate

*PuT means public transport*
Transit Alliances in Germany

International Experiences: Munich

- Münchner Verkehrsverbund
- „1 network, 1 timetable, 1 tariff“
- Includes all public transport modes with different operators
- Bus, tram, subway, light rail, suburban trains, …
Integrated transfer stations
Integrated Information & Timetable planning
Integrated Fares & Ticketing

One timetable
One fare
One ticket

→ Includes all public transport modes with different operators
Transit Alliances in Germany

Advantages for the customer

- Free choice of PT mode (e.g. bus, tram, regional rail)
- Comprehensible strategy „one fare - one ticket“
- Coordinated timetables (best connections)
- Improvement of quality

Advantages for the association

- Synergy effects for marketing, customer information etc.
- Unification of distribution (e.g. ticketing)
- Simple fare system for all public transport systems
- Consistent market presence
- Demand on PT increased considerably since creation of the transit alliances, e.g. in Munich and Hamburg 3 to 4 fold.

Experience of German associations over nearly 40 years (since 1965)

- Increasing demand and increasing fare income
Specific features of a German Transport Association

Transit Alliances

- A legally independent association
- Own personnel and own equipment
- Integration of regional and local transport systems
- Integration of bus + rail
- Responsible for fares, RSA*, planning, etc.

Rhein-Main-Transit Alliance (RMV)
- Integration of approximately 110 fares
- Approx. 150 transport companies
- Region, 26 districts and large towns as partners

*RSA = revenue sharing agreement
Frankfurt Rhine-Main Alliance (RMV)

- Zone-based fare and tariff system
- The Rhine-Main Public Transport Association (RMV)
  - Integration of about 110 different fare and tariff systems in 1995
  - Approximately 150 transport operators
  - RMV-Supervisory Board: 26 local authorities and the province of Hesse

From TraffiQ
Members of the RMV
(The Rhine Main Transit Alliance-Hesse, Germany)

27 partners constitute the RMV Supervisory Board, thereof:

- 15 rural districts
- 4 large cities (e.g. Frankfurt)
- 7 medium-sized towns
- The federal state of Hessen
  - 368 Local authority districts within the RMV area
  - 153 Transport companies
  - 112 fare systems harmonised and integrated

The Area of the RMV
3-level-organisation of local and regional public transport

Political level

City of Frankfurt (CoF) / municipality

Local PTO* traffiQ
non profit organisation
formally privatized but
100 % owned by CoF

Regional Transit Alliance (RMV)

Executive level

TENDERING and
CONTRACTS (competition)

Operational level

Private operators

Public operator (VGF) [owned by CoF]

German Rail (DB)

Regional operators

* PTO = Public Transport Organisation
Local Public Transport System in Frankfurt

Customers
- 200 million per year

Network
- 9 Underground Light metro Lines
- 10 Tram Lines
- 59 Bus Lines
- 9 Nightbus Lines

Infrastructure
- 130 kilometers of rail network
- 230 kilometers of bus network
The Tendered Bus System in Frankfurt

**Key data**

- 5 lots/bundle of bus lines
- approx. 2-3 million km per year on each lot
- Economic bundling
- Bundling of profitable and less-profitable lines
- Bundling in order to reach smaller and medium-sized business companies as target group
- Level of service has been increasing
Cost savings and quality gains through tendering of bus operations

Example – Bus services in Frankfurt/Main
Responsible entity - Public Transport Regulatory Authority of the city of Frankfurt (traffiQ)

- Service contracts for 5 lots of bus lines
- Annually 2-3 Mio. VKT per lot
- Bundling of profitable and less profitable lines
- Private and municipal operators
- Still one unified “brand”
- Increase in cost efficiency, per vkm costs reduced by aprox 25 %
- Increased service quality

Source: TraffiQ, 2013
Instruments for quality management

- Agreement on common quality and environmental standards between transport operators (via the Alliances)
- Quality standards being part of the service contracts; controlled by the responsible authorities (assessing punctuality etc.)
- Measuring passenger satisfaction (e.g. “railway passenger barometer” of the German NGO Verkehrsclub Deutschland (VCD))
- Complaints management
The example of **Copenhagen** -
Customer satisfaction as a basis for bonus scheme

- Clean exterior, condition of bus
- Cleanliness inside the bus
- Condition of interior furnishings of bus
- Temperature
- Air conditioning
- Limiting noise and vibration
- Adherence to schedules, punctuality
- Style of driving
- Driver’s conduct towards passengers
- General appearance and behaviour of driver
The Oslo Metro Customer Charter

1. We leave on schedule.
2. We will not leave early.
3. You will be informed of an approaching stop.
4. You will always know where we are going.
5. Information will be available before you board.
6. Information will be available on board.
7. We will answer your questions.
8. You will be informed when things go wrong.
9. Carriers will be clean, making your journey pleasant.
10. We will reply when you write to us.

We will listen to you.
We pay if you arrive late.
New Publication:

Transit Alliances – Towards Fully Integrated Public Transport

www.sutp.org
For more information and documents

www.sutp.org
www.sutp.cn
www.gtz.de/transport
www.gtz.de/fuelprices
www.gtz.de/climateandtransport
SUTP Website (Engl., CN, Span.)

- Active since 2002
- GIZ SUTP Publications
- Multimedia (gallery, videos)
- 30,000 visitors (per month)
- Almost 50,000 registered users
- Approx. 10,000 downloads (per month)

New updated website since March 2012

www.sutp.org
Write to us for any assistance on making Sustainable Urban Transport a reality in your city

GIZ SUTP project
sutp@sutp.org
transport@gtz.de