TRANSPORT DEMAND MANAGEMENT
Selected Experiences
from Germany and Switzerland

Presented by
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The following presentation is based upon the review

**A SURVEY OF CURRENT URBAN TRANSPORT POLICIES**
**Experiences from Germany and Zurich**


The study presents examples and draws conclusions from:

- Dresden
- Frankfurt
- Freiburg
- Hamburg
- Karlsruhe
- Munich
- Münster
- Zurich (Switzerland)
What does Transport Demand Management mean?

Definition of Transport Demand Management

In this presentation, transport demand management means all policies and measures to

• reduce the total volume of traffic or
• to promote shifts towards more sustainable modes of transport

Objectives

• to reduce adverse effects on the environment or public health
• to reduce traffic congestion
• in addition pricing mechanisms can generate additional revenue to improve public transport and NMT
Transport demand management encourages more efficient modes

Demand management measures can include:

- Parking controls and management
- Regulatory controls such as “odd-even” schemes and its variants
- Physical measures such as pedestrianization, bus priority, etc.
- Pricing & charges, through fuels, annual taxes, etc.
- Congestion charging, through cordon pricing or area licensing/pricing
- Restraint through land use development controls
The modal split in selected cities

Münster
54% of all trips are by non-motorized means of transport (foot, bicycle)

Zurich
private car use is smaller than 30% whereas public transport covers nearly 40% of all trips

Major shifts in the modal split

Major shifts in the modal split proved possible (e.g. in Zurich, Freiburg, Münster) when the local authorities implemented a comprehensive and integrated urban policy
The increase of area devoted to transport: Does it have to be that way?

Of all cities under review in the study, Zurich was the only city that has been following a strict policy to restrict land-use for transport.
There seems to be a strong link between the modal split and road safety. In Zurich, with a private car use below 30%, half as many people were injured as in Hamburg in 1998 (private car use: 45%)

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What are major starting-points for Transport Demand Management?

- Reducing the overall amount of transport and traffic
- Improving alternatives to the use of private cars
- Making the individual car use less attractive
Reducing the overall amount of traffic
– Integrated planning –

• Germany as a federally-organized state has a complex structure of policy- and decision-making

• The major stakeholder are involved at all levels

• Major agglomerations are organized in regional district associations with the objectives:
  - to usefully structure the regional area
  - to employ uniform planning measures
  - to lay down guidelines for the use of land

These associations are responsible for local transport, regional planning, economic development and recreation in the area. (The Greater Hanover District Association is the most advanced of the German regional associations)

• Many cities have started to develop approaches for the integration of settlement planning and urban transport planning

• Example: Quartier Vauban (Freiburg)
An example of integrated planning: Quartier Vauban (Freiburg)

- In 1998 the conversion of an abandoned military site of 34 hectare into a residential area started
- The quartier is to house approx. 5,000 people in some 2,000 dwellings
- A balanced mixture of living and commercial purposes was aimed at right from the beginning
- There are no parking sites for private cars within the district but garages are provided within walking distance (500 meter) outside the district
- A frequent bus-line (and a tram-line as of 2006) provides good public transport to the city center
- Due to excellent public transport access and the short cycling distance to the center, many inhabitants will not own an individual car
- Car-sharing vehicles are provided in the neighbouring garages
What are major leverages for Transport Demand Management?

- Reducing the overall amount of transport and traffic
- Improving alternatives to the use of private cars
- Making the individual car use less attractive
Improving alternatives
– Integrated public transport associations –

• In 1965, the first integrated public transport association was established in Hamburg

• By now, almost every city in Germany with more than 100,000 inhabitants is part of one of Germany’s 25 integrated transport associations (“Verkehrsverbund”)
  Integrated transport associations cover about 37% of the land surface and about 57% of the population of Germany

• The basic idea of these associations is to make public transport more attractive by introducing “one timetable, one tariff, one ticket”

• Example: Freiburg
  In 1984 Freiburg introduced the “Freiburg Eco-Ticket” at almost half the price as the regular monthly ticket valid in the whole district of Freiburg. Within the following 4 years the number of public transport passengers increased by 40%
  The regional extension of the transport association in 1991 lead to another increase in the use of public transport: The modal shift of public transport rose from 21% to 30%
Improving alternatives: The case of Zurich

Context

Two major projects for underground transportation systems were rejected by voters in referendums in 1962 and 1973.

The town council saw this as a mandate to continue working with the existing transport system based on trams and buses and to develop these into a modern, efficient and attractive transport system.

Reasons for the success of today’s public transport

Visible predominance in the streets
- Frequent bus and tram circulation

High quality of services
- Comprehensive network
- High frequency
- Clear timetables at each stop

Telematics system
- Priority for buses and trams at intersections

Integrated Networks and Timetables
- Complete integration of the suburban railway lines into the city’s network
- Integrated fare system, co-ordinated timetables

Investment and operating costs
- In comparison to underground transportation investment costs are only a fraction (e.g. the whole telematics system costs only as much as half a kilometer of a metro tunnel)
Improving alternatives by promoting non-motorized transport: The case of Münster

• Münster has a modal split for non-motorized transport of 54%.

• The flatness of the terrain and the high percentage of students result in a high share of bicycle trips.

• The City of Münster is strongly promoting non-motorized transport by offering:
  - a dense network of on- and off-street bicycle lanes
  - a unique bicycle ring road around the historical center
  - special left-turn lanes and preferential positioning areas at traffic lights
  - making one-way streets accessible for cycling in both directions
  - combined bus and bicycle lanes
  - opening pedestrian areas for cycling at night
  - a special bicycle station at the central railway station (3,000 supervised parking lots, maintenance services, fees: DM 12,- per month)

A similar concept is applied in various other German cities as well.
What are major leverages for Transport Demand Management?

- Reducing the overall amount of transport and traffic
- Improving alternatives to the use of private cars
- Making the individual car use less attractive
Making individual car use less attractive
– Aspects of parking control and management –

**Restrictions**

- Strict reductions in the number of parking lots in the city centers
- Closing of particular streets or areas for passenger cars (except deliveries and taxis)
- Restricted use of parking areas („Residents only“)
- Bremen: A dynamic park guidance system has been installed to inform drivers of parking availability in parking garages to reduce “searching” traffic.

**Pricing**

- Regulation of all parking areas via parking meters
- Parking fees of at least DM 2,- per hour in most German cities
- Munich: parking fee of DM 5,- per hour
- Bremen: Parking tickets may be used by two persons as public transport tickets for trips within the city center during the parking time
Making individual car use less attractive
– Road pricing and related pricing schemes –

• No congestion pricing schemes in Germany and Switzerland yet

• Many surveys and proposals but no strong political commitments towards implementation (e.g. the cases of Singapore and Trondheim are often referred to)

• Vehicle taxes and fuel prices do not address urban congestion directly. However, I would like to stress that an ecological tax reform has been introduced in Germany consisting of:
  – so-called ecological tax (surcharge on the regular fuel tax) with an annual increase of DM 0.06 per liter of gasoline and diesel between 2000 and 2004
  – vehicle tax reform in Germany, taking environmental concern into account
  – from 2003 onwards additional charge for trucks using German motorways (DM 0.25 per vehicle-km)
## Making individual car use less attractive
– Vehicle Tax in Germany –

### Tax for passenger cars

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*as of 01.12.2000*
Making individual car use less attractive
– Vehicle taxation in Germany –

**Emission Tax Incentives**

EU-Phase 4 (2005-2008):
tax reduction of 600 DM if emission standards are already met today

**CO₂ Tax Incentives**
tax reduction of 1,000 DM if vehicles emit < 90g CO₂/km
Concluding remarks

• Simply improving traffic flows does not solve today‘s challenges in urban transport – it rather attracts more traffic

• Only a combined strategy of
  – improving public transport and
  – restricting individual car use
  can lead to real improvements in urban transport

• There is a wide range of specific instruments to be used both for improving public transport and for restricting individual car use

• The institutional set-up of urban transport policy is of paramount importance. Major aspects include:
  – integration of land-use planning, settlement planning and urban transport planning
  – introduction of regional district associations
  – introduction of integrated transport associations („Verkehrsverbund“)

• The major stakeholders must be involved at all times for to achieve a high level of acceptance (both at the level of planning and implementation)
Appendix:

The case of Trondheim (Norway)
The case of Singapore
Fuel prices in Europe