The use of Taxis for Special and Integrated Public transport in Sweden and the Netherlands

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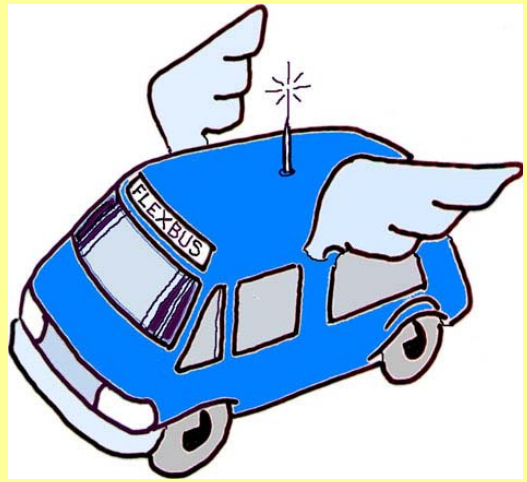
- DRT background
- The Swedish Model
- The Dutch Model
- Future Requirements
- Conclusion



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Special Public Transport

- Mobility services for people who have difficulty using regular public transport.
- Often performed by Demand Responsive Transport services (DRT)
  - Prebooked from 14 days before - up to 30 min before pick-up
  - Shared-ride (with unknown people)
  - Door-to-door, door-to-stop or stop-to-stop

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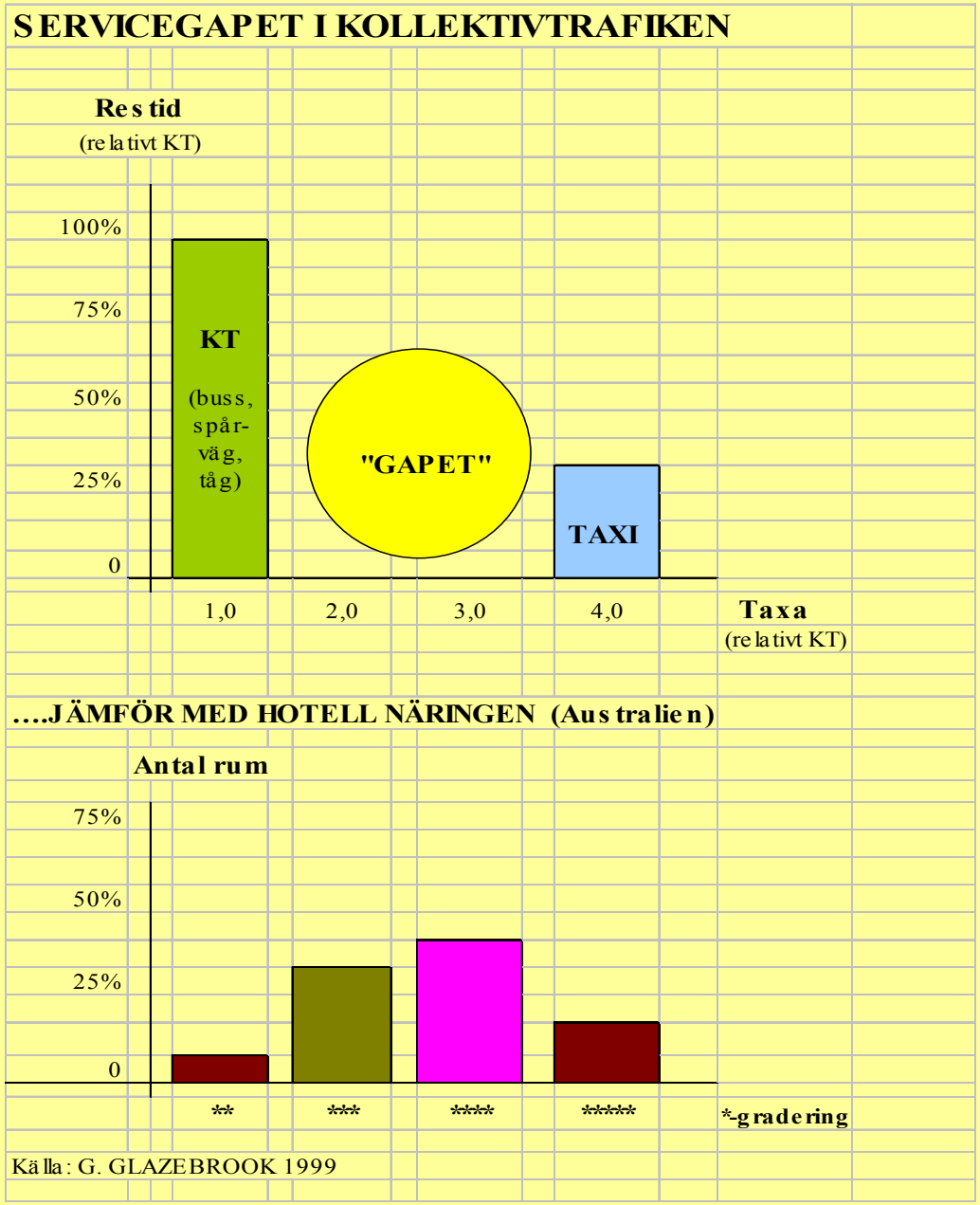
Open DRT

- Demand responsive public transport that is open to the public,

  - *not for the restricted use by certain categories of passengers with special needs*

- When a taxi service is offered as a shared ride service, it is an open DRT service,

  - even if some passengers are carried on contract with the authorities and mixed with users from the general public



Filling the Gap…

Glazebrook:

”It is not a matter of Trabants or Cadillacs –

or youth hostel or Hilton.

The bulk of products and services are in the middle segments. ”

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Integrated Public Transport

- Combination of two or more different transport modes
  - E g taxi feeder service to bus or train
- Coordination of passengers of different categories in the same vehicle.
- Rather both-and…like in Holland

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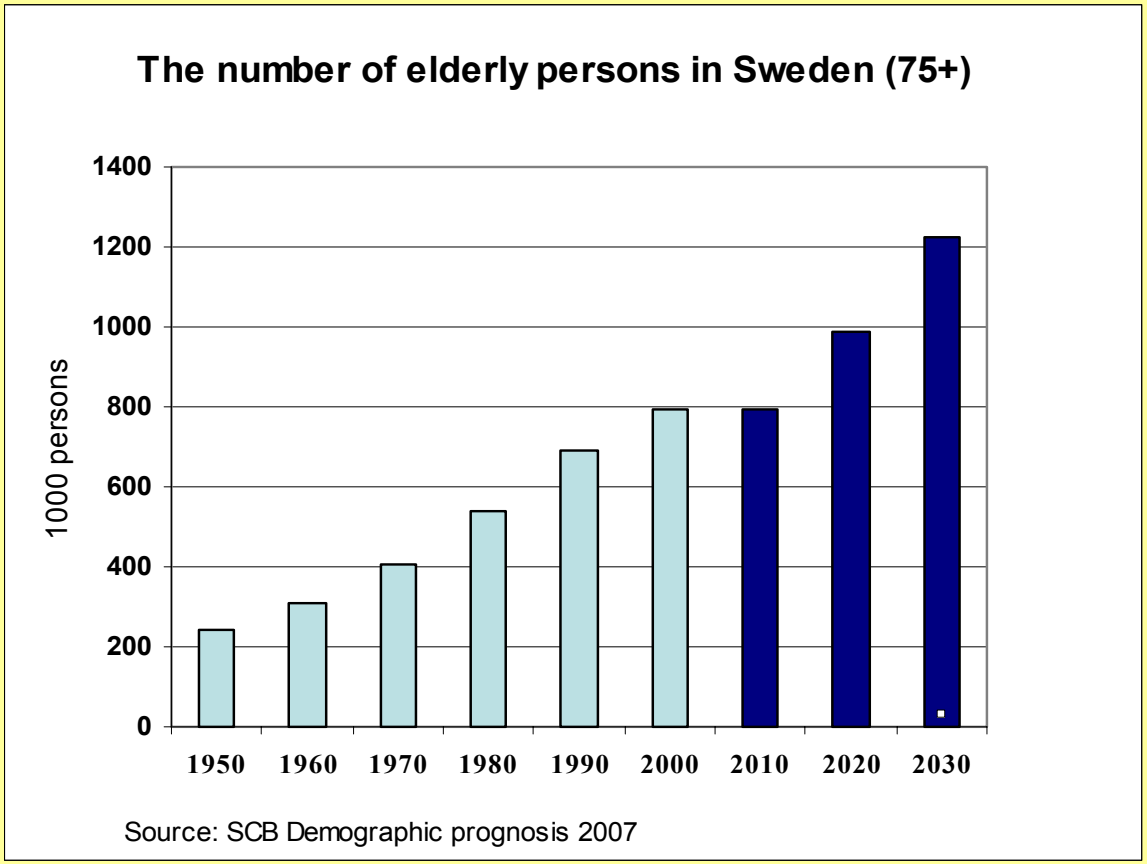
Aging populations require extended Mobility Services



Special Public Transport in Sweden

- Law about municipal Special Transport Service in 1975
- First fully computerised shared ride taxi system in Borås 1984:
  - System by Volvo and Ericsson
  - Combined Booking, Control and Information (BCI) Centre
- Installation of new version (PLANET) in Göteborg 1992
- About half of taxi industry revenue from contract work
- 4 % of population have STS – not a single model
- Current efforts to integrate STS users into mainstream PT

Mainstreaming and Conflicting Goals

- Market segmentation à la YWK
  - **Turbo**
  - **Svensson**
  - **No Hurry**

- Integration of ”Turbo” and ”No Hurry” in same vehicle is generally no good solution

Large DRT Service Providers

Preliminary data for 2002

	Stockholm (County)	New York (City)	Los Angeles (County)	West Midlands (B-ham)	Chicago (CTA)	Pittsburg (County)	City of Göteborg
Population	1,85M	8,0 M	11,8M	2,55M	3,80M	1,75M	0,5M
STS/ADA Permits	84000 (4,5%)	73000 (0,9%)	60000 (0,5%)	46000 (1,8%	38000 (1,0%)	N A	27000 (4,8%)
DRT trips	**4,5M**	**2,2M**	**2,1M**	**2,0M**	**1,9M**	**1,9M**	**1,7M**
DRT costs	95M€	108M€	45M€	18M€	35M€	24M€	32M€
Cost/trip	21€	48€	21€	9€	18€	13€	19€
Subsidy/ capita	43€	12€	4€	4€	8€	10€	40€

Source: YWK Survey and US National Transit Database

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Special Transport in Göteborg

- Provided 1,5 million trips in 2006
  - In-house TDC - 4000 calls per day
  - Global ”top-ten” organisation
  - About 50 % - municipal STS
  - Manages Flexlinjen (27 minibuses)

- Tax subsidy for municipal STS ca 18 M€

Contracting with private operators

- About 80 special vehicles procured on a daily basis
- Plus some 200 taxis on the ”spot market” from a contracted fleet of 350 cars
- Special 3 day driver training course

Procurement Model

- Unit price (€ per vehicle hour)
  - Quoted in bidding process
  - Used in each assignment of transport tasks (together with other scheduling parameters)
- Guaranteed minimum availability
- Quality of service is important factor
  - Minimum level in bidding process
  - Barometer ratings are used for bonus and as a scheduling parameter

The National Quality Barometer

- Initially only for regular public transport
- Organised by the national public transport association (SLTF)
- Extended to DRT in 2004, now 12 agencies
- Sampling from data base in TDC
- Customers are interviewed about yesterday's trip
  - What taxi company was used
  - Overall performance
  - Ratings of service details

Results 2006 (N=11000)

Factor	Satisfied users 12 sites in Sweden	Göteborg
Overall trip rating	93%	91%
Waiting for TDC (to book the trip)	86%	80%
Courtesy of TDC operator	94%	94%
Courtesy of driver	95%	92%
Driving characteristics	96%	92%
Finding destination	96%	93%
Vehicle accessibility/design	91%	83%

The Dutch Model

- Almost same subsidy levels for mobility services as in Sweden
- 60 % of taxi revenues from public sector
- A new law on municipal STS in 1994 spurred development of major DRT systems
- In 1997 possible for regional PTA's to consider DRT as part of total PT system

Regiotaxi characteristics

- Open DRT shared taxi door-to-door
  - Prebooking 60 or 30 min before travel
  - Time window +/- 10 or 15 min
- Differentiated fares
  - PT fares for eligible users
  - 3-4 times more for others
- 60 regional DRT systems today
  - 23 % of taxis revenue (250M€)
  - Focus on regional/rural areas

REGIOTAXI

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RegioTaxi KAN

- 21 municipalities in Arnhem-Nijmegen region
- Ca 1 million trips/year
- Ca 50 % open DRT
- Contractor ConneXXion (bought Novio)
- Strong demand (+10% /year) is forcing some rethinking

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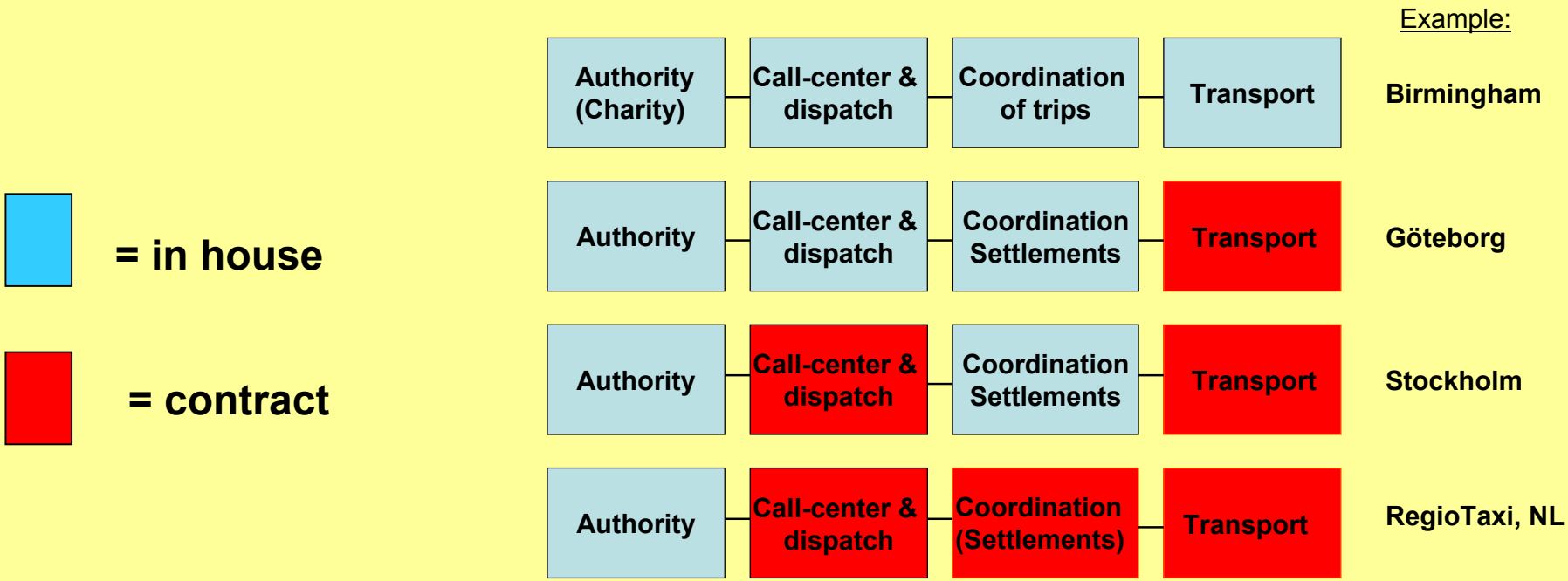
The Dutch Procurement model

- Public bodies set requirements but have limited involvement in service development
- One step open tender - problematic changeovers
- 3-5 years contracts

Strategies for Service Management



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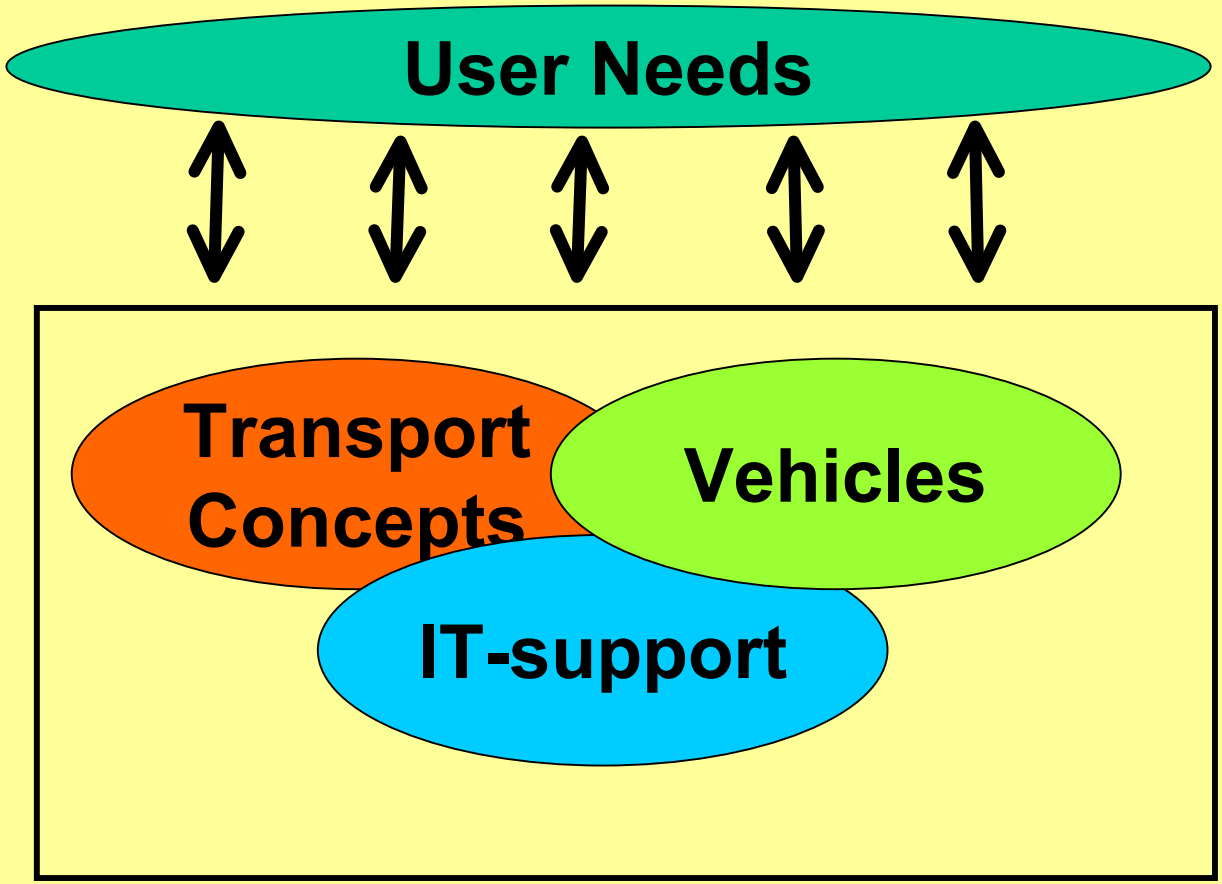
Assessing Quality

- 95 % ”service level” = on time performance
- Analysis of the transport data base
- Audits in the TDC
- Group discussions with users
- Mystery guest trips
- Customer satisfaction surveys

Customer satisfaction Comparison

Factor	Haaglanden 2004	Göteborg STS 2006
Waiting at TDC	77%	80%
Driver courtesy	84%	92%
Find destination	77%	93%
Vehicle	80%	83%
On time arrival	58%	95%

Future Requirements



Example: Numbered Meeting Points

… to provide walking distances < 200 m,
Door-to-door as needed

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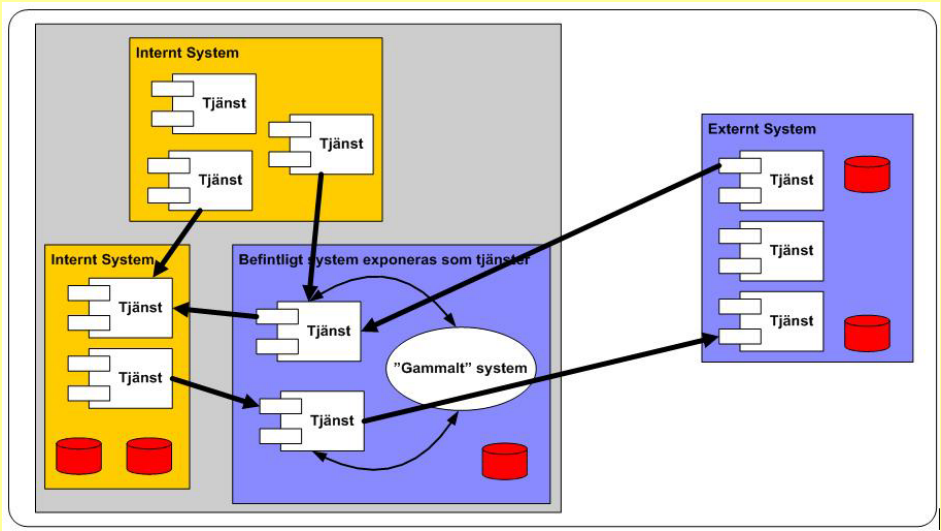
Automatic call-back to user..,

...to verify previously given pick-up time or to notify of any planned delays in order to fit more passengers

Need for globalisation

- DRT is by its nature a very complex concept.

  Large systems require highly skilled staff.
- Cost effective systems development by streamlined concepts and standards for system architecture and interfaces (also vehicles)



Environmental vehicle design

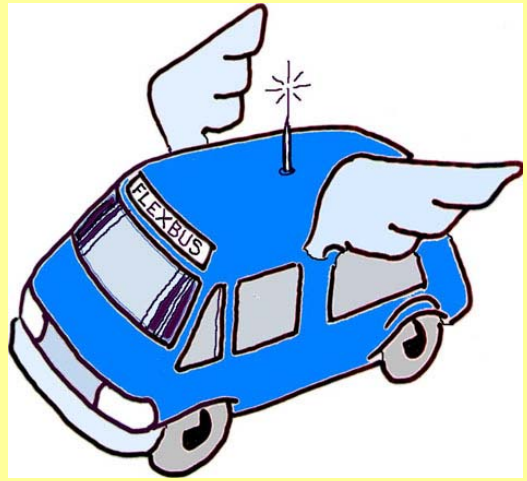
- Eco-drive line (bio-diesel-hybrid) for urban fleets
  - Bio = ”clean” fuel
  - Diesel = efficient engine
  - Hybrid = efficient drive line (power train)
- Light weight body
- New York 12 000 cabs to be hybrid by 2012

Accessible vehicle design

- Taxi-for-All concept
- ECMT/IRU report
- Requirements
  - Universal design
  - Low floor
  - Interior space
  - Air/gas suspension
  - Ramps

Conclusion

- Increasing need for mobility services
- Taxis play large role in public transport in Sweden (STS) and Netherlands (Regiotaxi)
- Differences in procurement models and quality management
- We need more international collaboration
  - Bench-marking, standards, interfaces and vehicle design
- Tremendous opportunity for a modernized taxi business to participate in the development of cities world-wide



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