Innovative solutions for urban freight transport
Securing efficient and sustainable distribution in European cities

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Growing urban populations will intensify today's challenges

- A majority of the global population is now living in urban areas
- Trend is expected to persist in future years, 22 megacities by 2020
- Increasing number of single households
- Resultant increase in demand for personal and goods mobility in conurbations

Source: UN Population Index 2007
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Current state of urban freight transport

- Deliveries typically account for 50% and more of the total costs in logistics networks
- Professional logistics operators aim to optimise the efficiency of vehicle and driver circulation
  - to save costs
  - to reduce trips and congestion
  - to minimise fuel use and emissions
- Realisation of efficient urban logistics schemes is dependent on supportive infrastructure, policies and commitment of public bodies and receivers
- Commercial vehicles today account for 10% of traffic in cities, but for 40% of related energy use and 50% of local pollutant emissions
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Core elements of comprehensive city logistics

I. Consolidation
   Bundling of individual shipments

II. Feeding
   Collective transfer of consolidated volumes into city area

III. Last mile
   Local distribution from transfer point to end receiver
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Urban consolidation centers

- Shipments are supplied to a strategically located warehouse instead of multiple vehicles making individual direct deliveries to receivers.

- Shipments are consolidated to maximise vehicle utilisation on the "last mile" and make a reduced number of deliveries at agreed times.

- Typical savings of more than 70% of the original delivery traffic across scheme participants; full loads and express items are not consolidated.

- Consolidation before final distribution is common practise for intra-logistics in industrial compounds, e.g. automotive, chemical, construction, airports.
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Airport freight consolidation in London-Heathrow

Highlights

- operated by DHL/Exel since 2001
- now serving 323 retail outlets
- 700 inbound trips consolidated to 300 outbound trips per week
- 218,000 vehicle-km saved in 2008
- 158,000 kg CO₂ saved in 2008
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Urban freight consolidation in Bristol

Highlights

- operated by DHL/EXEL since 2004
- now serving 63 retail outlets
- 76% reduction of delivery trips; half the retailers save 20" per drop
- 227,000 vehicle-km saved in 2008
- 270,000 kg CO₂ saved in 2008
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Urban feedering

- Bundled shipments can be transferred collectively from a consolidation center into the city area with trucks, trams, rail or barges
- Direct delivery of full loads to large receivers such as retail outlets, or drop-off at transfer points from where final delivery is made to small receivers
- Examples for collective feedering to urban areas include Monoprix shuttle train for supermarkets in Paris, and the VW Cargo Tram in Dresden
- Challenges are the generation of steady volumes and availability of urban space for loading ramps and transfer points (prohibitive real estate costs)
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Central rail freight terminal in Cologne, around 1950
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Postal parcel tram in Munich, 1959
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**Last mile solutions**

- Traditional deliveries can be augmented with new practices to cope with accessibility and availability constraints (receiver not present or out of reach)

- Microdistribution with electric carriers piloted successfully in Hannover (EU project FIDEUS)

- Self collection by receiver at attended pickpoints or from unattended lockerboxes (DHL Packstation)

- Combination of the above in local service points (ELP - Espace de Livraison Proximité in France)

- Integration of reverse logistics and shipping, shop-and-drop, internet shops, off-peak/night deliveries
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Electric parcel carrier in Bremen, around 1920
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City logistics requires non-logistics innovation

- The principles for city logistics are well known from current industrial practise and historic applications.

- Time sensitivity of consumers, proliferation of operators and increased value of urban space are drivers for current low degree of organisation.

- Innovation is required in four key areas to enable qualified city logistics; overdesign, lack of buy-in and competition issues are among key obstacles.
Thank you for your kind attention.