How can national governments create a supportive framework for a low-carbon urban logistics?

Dr Jacques Leonardi

Workshop II on Urban Freight
Berlin, 20 Sep. 2017
Objectives of the day

• *Understand* the challenges and opportunities for sustainable urban freight solutions
• *Learning* about existing good practices and how to replicate them
• *Participate* and *exchange* (*learning by doing*) on policy instruments of national and local governments
  1. Session 1: National Governments
     • Presentation, introduction of concepts and examples
     • Presentation from partner country
     • Interactive session
  2. Session 2: Local Authorities
  3. Session 3: Learning from case studies
Opportunities and experiences

• Bottom up approach already happened since the years 2000 in many hundred cities, projects, committees, programmes etc.
• Key approach is learning from good practices
• Design trials in small scale → growth → industry scale?
• Private and public sector cooperation
• Multiple stakeholders
• Tests (pilots) and data collection → decision and control
Objectives of case studies on “successful” freight transport operations

• To inform on cases in urban or long distance transport context
  • Trials and demonstrations of technical feasibility and economic profitability
    • Sustainability
    • Decarbonisation
    • Profitability
    • Social acceptance
  • Impacts estimates or assessments
  • Expectation/assumption: Other businesses are going to replicate and scale up the solution on the market
  • Sources, references
  • Contacts, networking
Regulation on traffic and parking, access restriction, environmental standards and permits

- Simple and cheap measures any local government can take
- Large impacts on the city’s environment (if enforcement is working well)
- New standards used: Euro standards (truck pollution level)
- New concepts such as congestion charging, low emission zones, night delivery time windows, time sharing of the roadspace (multi-use)
- New enforcement measures: dedicated brigades, clock stickers, cameras, ITS
Planning, land use, construction code

• Integrating freight into planning policies (urban and/or transport planning) and building codes is an interesting strategy for a local government

• These strategies have both short and long term consequences

• Common concepts: off-street delivery space provision

• New concepts: compulsory storage space in business’ premises, multi-story logistic terminals in urban areas, reservation of logistics land use in urban master plans
Intelligent Transport Systems (ITS)

- Not yet widely used for the management of freight transport in cities but the identified practices have proved very efficient
- Strategies to use ITS to better manage goods transport will develop in the future as ITS become more precise and less costly
- ITS are efficient to enforce access measures
- Crucial in data collection and real time information for truck drivers on traffic and parking conditions
- ITS is tested in several dimensions for routing and scheduling, load optimisation, combination of pedestrian and driving trips
Consultation processes and labelling schemes

• These policies have proved crucial in raising awareness among freight transport companies
• Providing forums for discussion can ensure that a policy targeted towards freight transport is successful
• Giving specific labels to virtuous truck companies (companies using clean vehicles for example) has proved useful in some cities
• Signing “charters” or giving labels is well appreciated but promises must be met
• If not well enforced, the participating truck companies feel frustrated
Consolidation schemes and measures targeting urban supply chains

- Setting up Urban Consolidation Centres and urban logistic spaces can be experimented by cities
- Many experiments failed because of costs
- Some experiments met with success:
  - When consolidation centres are specialized (construction sites)
  - When municipalities provide low cost urban logistic space to innovative companies
  - When retailers are actively associated
Logistics system for deliveries by diesel vans

Logistics system for deliveries by Cargocycles and electric vans
Limits of the system of observations

- infrastructure + vehicle construction + employees
  = transport & logistics sector management

- upstream and downstream suppliers’ and customers’ chains
  = logistics & supply chain management

- warehouse & logistics services = logistics

- vehicle maintenance and repair = freight and fleet management

- fuel supply = freight energy

Vehicle + load = freight transport
Measuring climate change emission efficiency & sustainability of logistics

www.green-logistics.org
Road freight efficiency and CO₂

Road freight trip data from original survey in Germany 2002 (point = group of trips)
Source: Leonardi, Baumgartner 2004: CO2 efficiency in road freight transportation: Status quo, measures and potential, Transport Research D.
# Efficiency measures in transport organisation

Answers from 20 container trucking companies in %, 2003

<table>
<thead>
<tr>
<th>Measures</th>
<th>Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>Semi automatic scheduling system</td>
<td>25</td>
</tr>
<tr>
<td>Route planning software</td>
<td>45</td>
</tr>
<tr>
<td>On-board navigation system in the vehicles</td>
<td>0</td>
</tr>
<tr>
<td>Radio phones in the vehicles</td>
<td>65</td>
</tr>
<tr>
<td>Mobile phones in the vehicles</td>
<td>80</td>
</tr>
<tr>
<td>Coupling of two 20’ containers orders to single freight transport</td>
<td>100</td>
</tr>
<tr>
<td>Sub-contracting with partner companies</td>
<td>80</td>
</tr>
<tr>
<td>Informal co-operation - Co-ordinated order delivery with “friends&quot; companies</td>
<td>90</td>
</tr>
</tbody>
</table>
## Efficiency measures in transport behaviour & technologies

<table>
<thead>
<tr>
<th>Measure</th>
<th>Yes</th>
<th>Partly</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver training</td>
<td>25</td>
<td>5</td>
<td>70</td>
</tr>
<tr>
<td>Fuel use information on board</td>
<td>5</td>
<td>35</td>
<td>60</td>
</tr>
<tr>
<td>Fuel use statistics for the company</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Additional maintenance (higher frequency)</td>
<td>5</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td>Low resistance tyres</td>
<td>0</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Wind spoiler</td>
<td>80</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Biodiesel fuel</td>
<td>5</td>
<td>10</td>
<td>85</td>
</tr>
</tbody>
</table>

**Note:** The table reflects the percentage of measures that are either implemented entirely (yes), partially (partly), or not at all (no).
Summary: role of national government

- Support cities with favourable framework conditions
- Regulation of access to city centres with clean vehicles
- Legislation beneficial for clean vehicles (subsidies, less penalties etc.)
- Funding for trials, tests and pilot programmes (for local authorities such as local development agency and cities)
- Funding for data collection and evaluation (consultancies and industry)
- Funding for research (academics)
- Coordinate and collaborate with multiple stakeholders, at least with the 3 key groups transport industry, cities, research
- No research project on national policies favourable for urban freight in Southern countries, few cooperation, no compendium of good cases