Freight transport services and autonomous vehicles

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Potential benefits

• For example...
  – Lower costs – no driver and reduction in fuel cost
  – Increased safety – reduction in driver error
  – Greater opportunity for time shifting
  – The way we can use scarce urban space – for example the kerbside and loading docks/bays/zones
  – ...
# Importance of freight in London

<table>
<thead>
<tr>
<th>% of all traffic by goods vehicle</th>
<th>All day – London Wide</th>
<th>All day – Central London</th>
<th>Central London AM peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trucks</td>
<td>5%</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>Vans</td>
<td>12%</td>
<td>13%</td>
<td>21.5%</td>
</tr>
</tbody>
</table>
Some of the challenges

• Variety – freight traffic is heterogeneous as are the products themselves

• Interfaces
  – Physical
  – Organisational

• Scale – at what scale do some activities become possible?

• Cost – who pays and how do the costs get passed on? Who benefits?
London freight and service traffic: An example of variety

Van traffic by sector – top 75%
(AM peak, Central London)

- General purpose / White van / Unknown: 39%
- Servicing and facilities: 13%
- Construction-related activity: 7%
- Food and drink (includes home deliveries): 7%
- 4%
- 4%
- 4%
- 2%

Truck traffic by sector – top 75%
(AM peak, Central London)

- Construction: 47%
- Food and drink: 18%
- Municipal vehicles: 12%
- 9%
- 5%
- 2%
- 2%

The interface challenge

• Physical
  – Road and kerbside
  – Buildings – origin, destination and in between

• Organisation
  – Supply chain partners
  – Roles of transport and logistics companies
  – Decision-making in an organisation context
Use of street space (road and kerbside)

Physical interfaces and complexity
Compétences spatiales, compétences d’action dans l’espace: La tournée du chauffeur-livreur.

Céline Cholez

Scale and speed of implementation

• Which sectors/areas will be first?
  – Small packages
  – Waste and refuse services
  – Closed/private areas (e.g. campus)

• Will the development be gradual and happen alongside existing freight services?
  – Labour relation issues
  – Disadvantage of parallel systems

• Will some cities lead?
Small vehicles – rapid change in past few years

Reflect on presentation by Anders Grauers – will these survive with the introduction of small autonomous vehicles?
Changes in costs

• Major potential to change cost structures
• What happens if transport costs fall?
  – More transport, more frequent deliveries, exchange transport for inventory
  – Reduced incentive to fully utilise the load space of the vehicle
• Who receives the benefits?
"Det automatiserade transportsystemets effekter på samhället"

Ett projekt inom det strategiska innovationsprogrammet för Drive Sweden, en gemensam satsning av Vinnova, Formas och Energimyndigheten.

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Links and further information

(1) Urban Freight Platform an initiative within Northern LEAD at the Chalmers and the University of Gothenburg supported by the Volvo Research & Educational Foundations (VREF):  [http://www.chalmers.se/en/centres/lead/urbanfreightplatform/Pages/default.aspx](http://www.chalmers.se/en/centres/lead/urbanfreightplatform/Pages/default.aspx)

(2) Center of Excellence: Sustainable Urban Freight Systems (supported by VREF) for webinars and other information available see: [https://www.coe-sufs.org/](https://www.coe-sufs.org/)

(3) METROFREIGHT Center of Excellence (supported by VREF) for more information see: [http://priceschool.usc.edu/metrofreight-the-localglobal-challenge-of-urban-transportation-planning/](http://priceschool.usc.edu/metrofreight-the-localglobal-challenge-of-urban-transportation-planning/)