Sustainable urban distribution: challenges, trends & opportunities

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MDS Transmodal & urban freight transport

- Specialist freight transport consultancy, focus on economic & commercial issues (based in UK)

- Completed study on *Urban Freight Transport in Europe* for DG MOVE in 2011-12, working with the Centro di Ricerca per il Trasporto e la Logistica of Sapienza University in Rome

- Study involved:
  - Review of existing practices and measures throughout Europe
  - Policy recommendations for action at EU level

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Summary

- Introduction: definitions & policy objectives
- Challenges posed by UFT
- Key trends in UFT: markets & policies
- Opportunities for the future

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1 INTRODUCTION

What is (urban) freight transport?

- Freight transport:
  - Carriage of **goods** for **commercial** reasons between an origin and a destination
  - Derived demand
  - Generally competitive & cost-focused industry
- Urban freight transport (UFT):
  - The movement of freight vehicles whose primary purpose is to carry goods into, out of and within urban areas
  - Essentially “last mile” deliveries & collections of goods
  - Excludes passenger vehicles carrying goods & service vehicles

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EU policy objectives

- European Commission (Transport White Paper, 2011):
  - *"…essentially CO_2-free city logistics in major urban centres by 2030"*
  - Also focus on:
    - Internalisation of external costs
    - Modal shift from road to rail and water for freight movements >300km

- Strong focus on environmental objectives, while seeking to maintain and enhance economic prosperity of urban areas

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2 CHALLENGES

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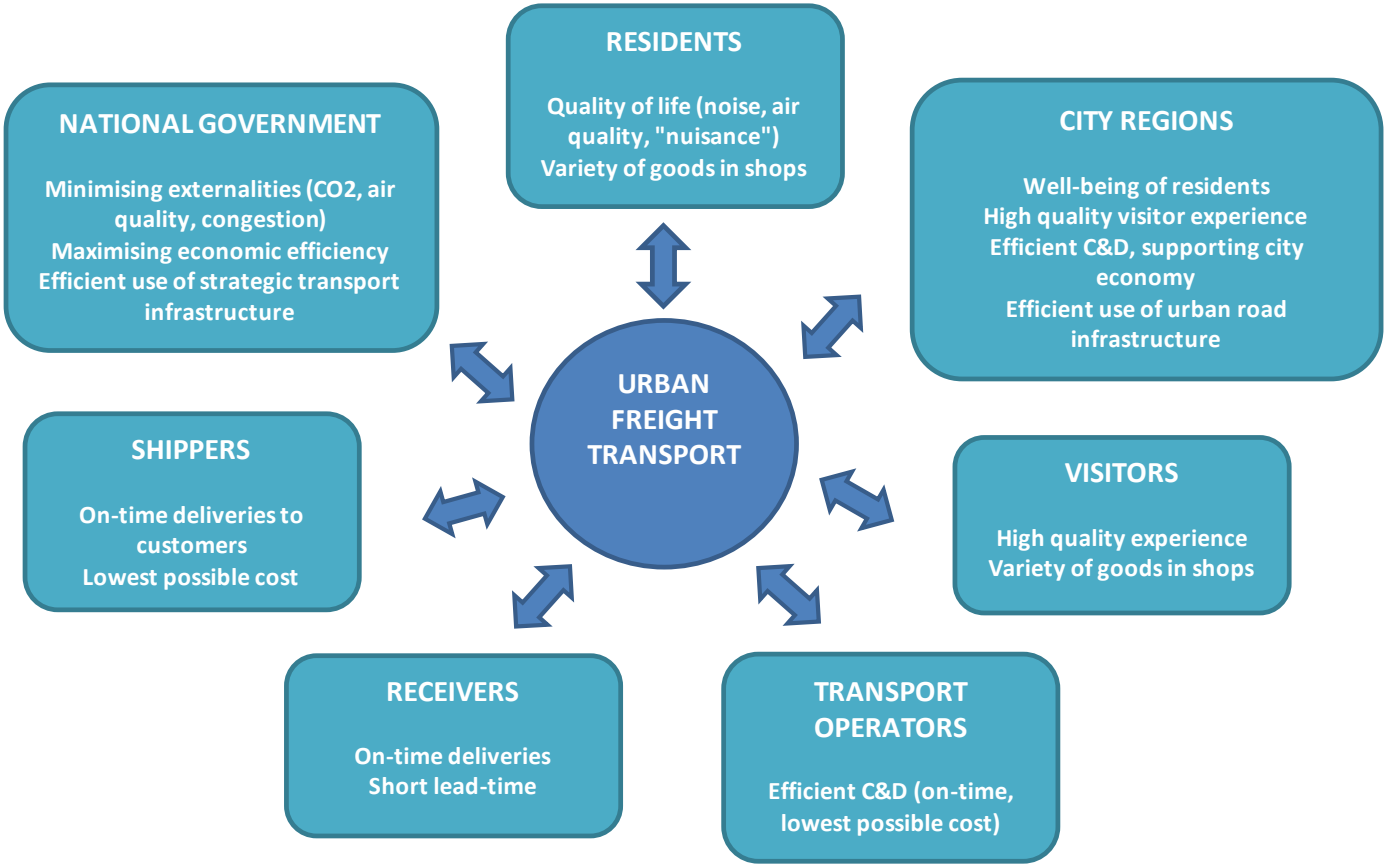
Challenge (1): conflicts between stakeholder expectations



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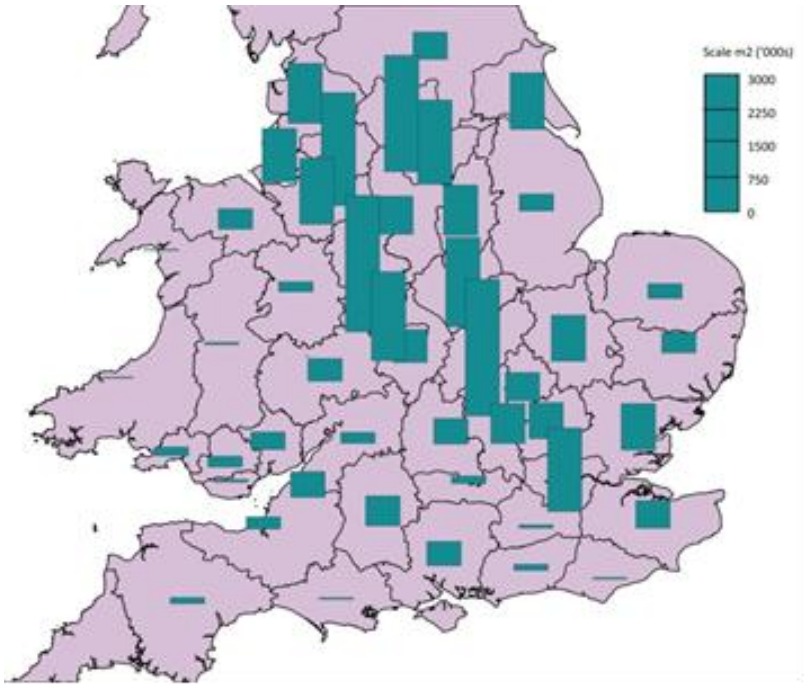
Challenge (2): Taking a strategic view



Location of UK warehouses > 9,000 m2

- Need to avoid excessive focus on freight transport within urban areas
- Freight deliveries come from RDCs
- But prior to that freight comes from NDCs & ports
- Need to consider sustainability of complete supply chain, not just in urban areas

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Challenge (3): environment & safety vs. economy

Environment & safety

- Air quality (EU fines)
- Carbon emissions
- HGV routing
- Safety
  - Cyclists
  - Bridge strikes

Economy

- Economic efficiency
  - Congestion/reliable freight journeys
  - Efficient deliveries
- Economic development/jobs
  - Major distribution sites
  - Port development

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3 TRENDS (1): THE MARKET

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Market trends in UFT: segments

- Market segments:
  - **Retail**
  - **Courier/post/parcels**
  - **Hotels, restaurants & catering (HoReCa)**
  - Construction
  - Waste

- Not necessarily distinct sectors: **e-commerce** is both retail & courier/post/parcels

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Market trends in UFT: traditional retail

- Wide variety of forms, formats, products, legal structures, locations and distribution channels
- Major employer: 17.4 million employees
- 20% of European SMEs in retail sector
- Large-format stores have dominated, leading to relatively efficient UFT (consolidated loads, large vehicles etc.)

- Trends:
  - Increasing interest in smaller store formats, with proximity becoming a key issue for Europeans
  - Zero population growth, number of consumers static
  - Smaller formats allow better service, but may lead to less efficient UFT

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Market trends in UFT: courier & parcels

- Offer a timed door-to-door service to customers at a premium price, generally for shipments up to 30kg
- B2B accounts for 80% of revenues, B2C for 15%, C2C for 5%
- e-Commerce (B2C) is at national level and is growing rapidly
- Use small to medium sized trucks for last mile C&D
- Consolidate large volumes of small, but high value shipments, deploying relatively small number of trucks within urban areas
- Under pressure to optimise C&D due to constraints on delivery time

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Market trends in UFT: e-commerce

- 40% of EU consumers bought goods on the internet in 2010, compared to 26% in 2006
- Reliable logistics is key factor for success:
  - Mostly out-sourced to parcel & courier operators
- Major issue of failed deliveries at residential addresses – highly inefficient for all concerned
- Development of pick-up and drop-off points (convenience stores, public transport interchanges etc.)

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Market trends in UFT: HoReCa

- About 7.8 million people employed in the sector
  - Organised distribution channels (Burger King, McDonalds, large hotel chains)
  - Non-organised (bars, restaurants, smaller hotels) where family-owned companies dominate
- Trend towards consolidation: economies of scale in human resources, regulatory compliance, technology & procurement
- In non-organised sector logistics is specialised & JIT, so difficult to be efficient

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3 TRENDS (2): UFT POLICY

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Categorisation of UFT policy measures

- Categories of measures:
  - Regulation: controlling freight transport for the common good
  - Market-based: changing price of freight transport
  - Land use planning: influencing use of space for freight transport
  - Infrastructure specifically for freight transport
  - Technological: low emission vehicles & “smart infrastructure” for freight
  - Management & other measures:
    - “Urban Logistics Plans”
    - Managing demand-side (e.g. urban consolidation centres)
    - Managing supply-side (e.g. Delivery Service Plans)

- No “one size fits” all solution, so requires bespoke package of measures designed for each urban area

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Trends in types of measure (1)

- Regulation:
  - "Time windows", "closure" of city centres
  - Low Emission Zones
  - Conflict with freight industry
- Market-based/pricing:
  - High profile examples of congestion charging
  - Complex, difficult to design, not seen as "fair"
- Land use planning
  - Cheap & effective over the longer term
- Infrastructure (for freight)
  - Low priority, but focus on dedicated loading bays

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Trends in types of measure (2)

- Technology:
  - Low take-up of low emission vehicles, focused on larger, more profitable private operators (express couriers) & public sector
  - Struggling to find suitable business plans for ITS applications
- Increasing interest in “urban logistics plans”
- Fashion for consolidation of deliveries: mixed results

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4 OPPORTUNITIES

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Policy vision for 2030

- More medium- to long-distance flows by rail/waterborne transport
- Hubs for major urban areas with rail and/or water-connected distribution parks located on outskirts
- Sustainable “last mile” freight movements
  - Consolidated orders & deliveries
  - Use of LEVs (probably electric)
  - Quiet night-time deliveries
  - E-commerce pick-up & drop-off points
- In-line with EU policy vision for freight

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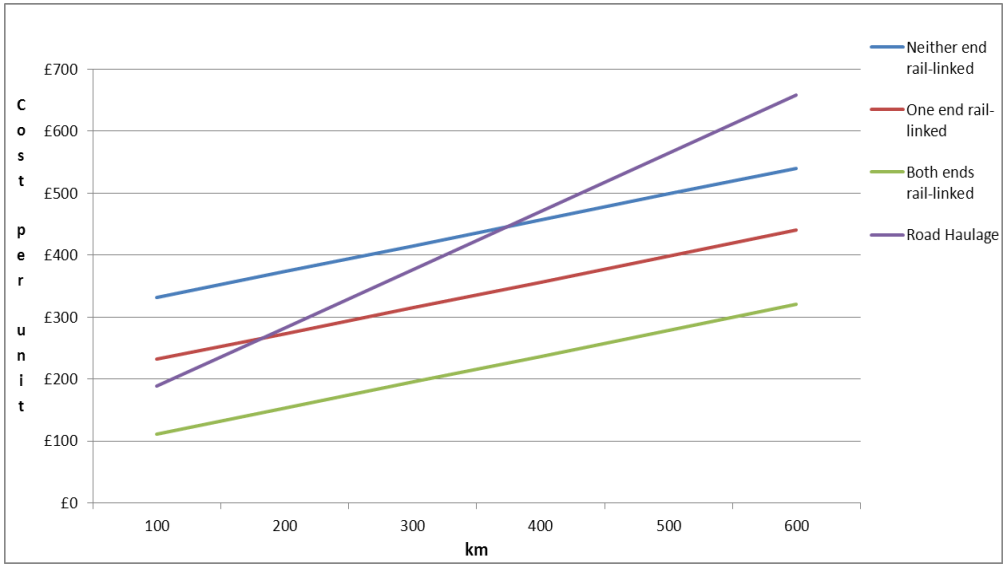
Strategic flows: removing the need for road collection & delivery



- Intermodal rail freight competitive with road at about 375km if road C&D required at both ends
- Break-even distance reduced to 175km if one end is rail connected (e.g. at port or rail-connected distribution park)
- Makes case for Urban Distribution Centres

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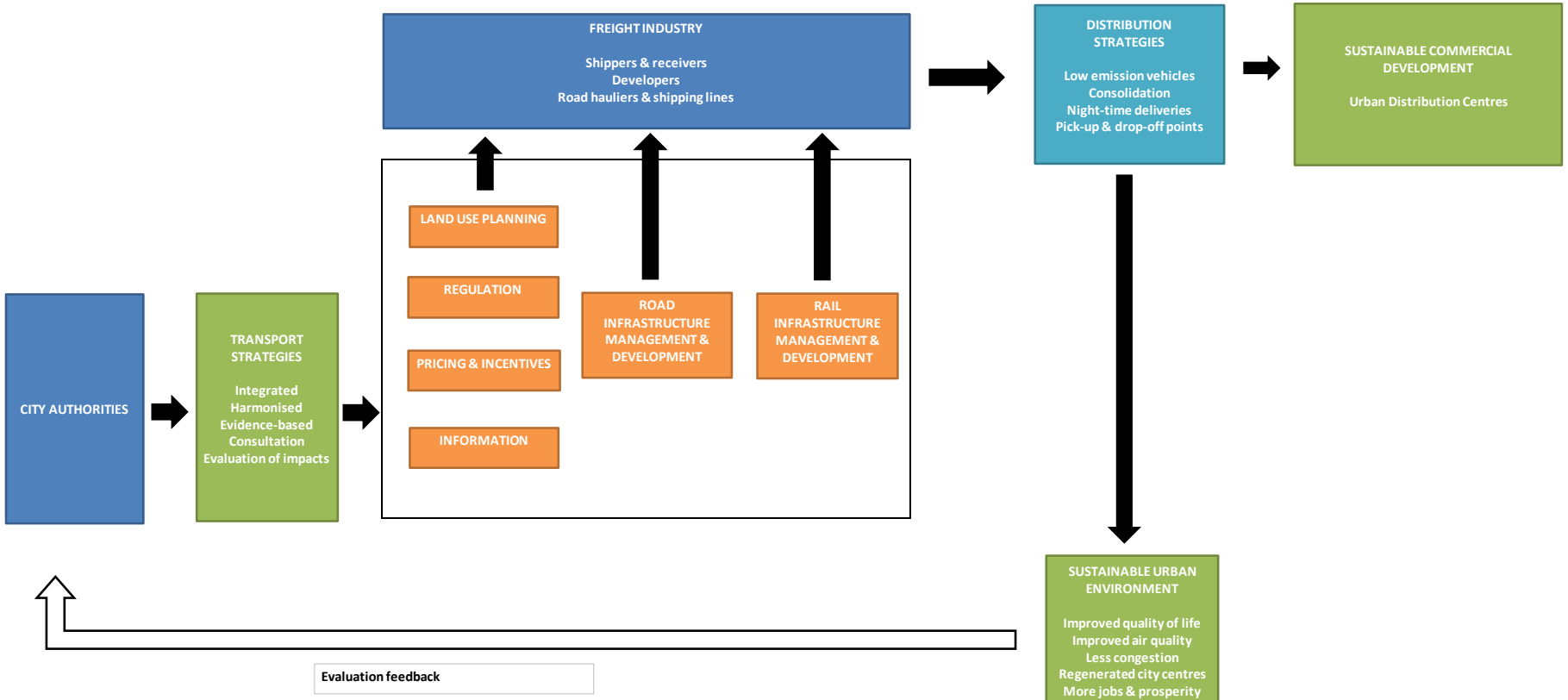
Urban freight policy framework (1)



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Urban freight policy framework (2)

- Strategy-led, **evidence-based** packages of policy measures should be pursued, if necessary in face of industry opposition
- Policy measures need to **incentivise** private sector freight operators by creating appropriate policy & regulatory environment
- Need balance between:
  - Tailored, integrated packages for local situations – there are no "one size fits all" solutions and…
  - Harmonisation of regulations at a national or regional level to help freight transport industry to adapt

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Thank you!

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