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Urban freight policy: recent developments in Paris

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Acknowledgment

• MetroFreight VREF Center of Excellence
• CITYLAB H2020 European project
Four areas of interest

• Urban freight data collection
• Logistics hotels
• Low emission zone
• Promoting innovation
Paris

A city of 2.2 million people
An urban region of 12 million

Every day (metro area):
800,000 deliveries to businesses
240,000 deliveries to consumers
incl. 40,000 ‘instant deliveries’ (est.)
Types of vehicles used for deliveries

- 4% motorcycles
- 26% vans
- 31% small trucks
- 31% medium trucks
- 8% large trucks

Total street area occupied by commercial vehicles at peak hour:
- 27% in traffic
- 12% in parking
Comparing different time periods: Bordeaux 1994-2013

- “Delivery Intensity” of Bordeaux businesses has slightly decreased (from 0.9 to 0.8 /week/job)
- Total number of deliveries to businesses has increased by 12% (as number of businesses has increased)
  - Office activities: from 10 to 18%
  - Small retail: stable at 26%
- If B2C deliveries are included: total increase in number of deliveries and pick-ups in Bordeaux since 1994 = +50%
2013 Paris Charter for Sustainable Urban Logistics

- 80 stakeholders
- General goals for urban logistics
- 16 specific projects with detailed commitments from stakeholders
Los Angeles Times, March 2015

Paris chokes on pollution; City of Light becomes City of Haze

The Economist, July 2016
Air emissions from urban freight

- Freight:
  - 20% of veh-km equiv. cars
  - 25% of transport-related CO2
  - 33% of transport-related NOx
  - 50% of transport-related PM
- Targets: old vans, small trucks and motorbikes
- 20% of Paris commercial vehicles are below Euro 3
- Low emission zone since Sept 2015
- Old vehicles’ access ban
- Step by step approach
Air quality ‘certificates’

**Vans**

- **Euro 2**
  - Between 1st January 1997 and 31st December 2000 inclusively

- **Euro 3**
  - Between 1st January 2001 and 31st December 2005 inclusively

- **Euro 4**
  - Between 1st January 2006 and 31st December 2010 inclusively

- **Euro 5 et 6**
  - From 1st January 2011

**HGVs**

- **Euro 3**
  - Between 1st October 2006 and 30th September 2009 inclusively

- **Euro 4**
  - Between 1st October 2009 and 31st December 2013 inclusively

- **Euro 5**
  - From 1st January 2014

- **Euro 6**
  - From 1st January 2014
Paris Low Emission Zone

• Complicated
• Euro 4 and older trucks and vans banned from the city except at night, weekends; and with exemptions (supply of open markets)
• Only city of Paris – not metropolitan
• Poorly phased for the future
• Poorly enforced
Plan for a network of public CNG stations
Reintroduction of logistics buildings in the city

Concorde

Halle Gabriel Lamé

St-Germain des Prés et St-Germain l’Auxerrois

Pyramides

Beaugrenelle
2016 zoning plan of Paris:
Accommodating urban logistics facilities
‘Logistics hotels’

Chapelle International: 45,000 m²
A “logistics hotel” in Paris opening in Nov 2017
Building programme

Urban farm and tennis courts
Offices and data center
Urban freight rail terminal
Urban distribution terminal
Project’s main partners

- SOGARIS, a logistics real estate developer and manager (main shareholders are city of Paris and other local governments)
- City of Paris
- XPO and Eurorail: 3PL companies
- Potential clients (tenants): wholesalers, large retailers serving Paris, parcel and express operators
- Fire and safety administrations
First lesson: a very long process

2006: New Paris Land Use Plan with land parcels reserved for logistics
2010: SNCF launches a request for proposals for a logistics project
   - with rail freight operations (imposed)
   - not above 7 metres from street level (imposed)
2011: Sogaris project selected
2012 + 19 months: building permit
2013: Special agreement for large industrial buildings
2014 Nov-Dec: Impact Study and public enquiry
2014: ICPE permit (hazardous activities)
2014: Specific Notice for Rail Safety permit
2015 Sept: ownership of the site to Sogaris and start of works
2015 Dec: agreement signed with rail operator and logistics provider
2016 Jan: end of excavation works; agreement signed with wholesaler
2016: ‘Modifying Building Permit’ solicited and granted
2017 Sept: first train tests Nov: inauguration
Second lesson: a risky investment

• Logistics rental price of 100 euros/m2/y
• Total construction costs: 84 M euros, including 30 for rail terminal
• Expected return on investment in 20-25 years
• Expected net creation of 300 new jobs
Beaugrenelle logistics hotel

3,000 m² in the south-west of Paris
Sogaris (investor), Chronopost (Poste Group), City of Paris
• Opened in 2012 out of the transformation of a former parking facility
• 5,000 deliveries a day made by 2 electric vans and 28 diesel vans
• Assessment Jan 2017
• Clean delivery vehicles should have been 50% of vehicle by end of 2016
• Pollutant emissions reduced by 30 to 35% due to reduced total vehicle-miles
• (Includes trips to and from drivers’ homes)
“Reinvent the Seine” program: a future logistics facility in the 16th arrondissement of Paris
Amazon Prime Now: a 50,000 sq ft warehouse in Paris and two 60,000 sq ft in surrounding cities

Amazon warehouse in Paris
Promoting innovation

• 2015 municipal bid for innovative city logistics projects
• Selection of 22 projects

• End of 2017: opening of an ‘incubator’ building for start-up companies in the logistics sector
Delivery robots

- **Dispatch (San Francisco)**
- **Starship (London, Sunnyvale, Redwood)**
- **Marble (San Francisco)**

Domino’s Pizza: in New-Zealand (2016) and Europe with Starship in 2017

- **Piaggio FastForward (Boston)**
Amazon is quietly exploring ways to use self-driving vehicles to deliver packages.
Il s’agit d’un projet partagé par deux entités, Urbismart et Libner qui ont répondu séparément à l’AAP lancé par Paris & Co. En raison de la complémentarité apparente de leurs projets, ils ont choisi de coopérer. Ils proposent aujourd’hui un système logistique hybride basé sur la mutualisation du transport de marchandises à destination d’une même rue ou d’un même quartier de ville. La mutualisation résulte de la commercialisation d’un logiciel spécifique. L’approche se fait en porteur 19 t dans lequel se trouve un petit véhicule électrique. Arrivé à proximité des lieux de livraison, le porteur stationne, devient ainsi une « base intelligente de logistique » (BIL), depuis laquelle le petit véhicule électrique livre les destinataires finaux (commerces, bureaux, particuliers).

**Evaluation interne du projet**

| Faisabilité technique et opérationnelle |
| Dimension humaine |
| Pérennité financière |

**Evaluation du point de vue de la collectivité**

| Impact sur le dynamisme économique du territoire |
| Facilité de mise en œuvre |
| Impact social |
| Impact environnemental |

**Points de vigilance**

Réalité des gains environnementaux ?

**Forces & Faiblesses**

- **Forces** : produit opérationnel donc commercialisable ; conforme au concept d’éclatement (hub & spokes)
- **Faiblesses** : stationnement du porteur ; tare représentée par la BIL Box ; contradiction apparente entre le système Urbismart (système sans moyens) et BIL (maillon concret d’exécution)

NB : Les radars sont susceptibles d’évoluer.
MONOPRIX (Casino) in Paris
train + CNG trucks

90 Paris stores since 2007
30 km rail trip from suburban
distribution center
+14% increase per pallet
Abandoned in 2016

FRANPRIX (Casino) in Paris
barge + trucks

300 Paris stores since 2012
20 km barge trip from
suburban DC and port
No available info on cost
Waterways for urban deliveries

Cargo-cycles for urban deliveries
Off-peak deliveries and night deliveries

- Night deliveries are authorized in Paris (large trucks – over 29 m² – can only deliver at night)
- General restrictions on noise
- Some specific demonstrators have been tested with help from the municipality and use of silent equipment
Conclusion

• Urban freight represents many jobs and an important economic asset for Paris
• Urban freight still generates many environmental impacts
• New logistics services are emerging such as ‘instant deliveries’ and the municipality does not know how to cope
• Local decision-makers are looking for effective policies to address part of the issues
• Many freight and logistics issues depend on the economics or on long-term national/European policies that cannot be properly addressed at the local level
• Increasing knowledge and awareness
Survey on ‘instant delivery’ couriers in Paris (December 2016, Saidi and Dablanc)

• Main challenges:
  – Rain, cold, bad weather conditions (21%)
  – Problems with app, GPS or smartphone battery (20%)
  – Congestion, pollution and traffic (19%)
  – Bicycle theft and bike problems (13%)
  – Lost time waiting for the order at restaurants (12%)
  – Bike lanes (absent or ill-conceived) (7%)
  – Other (8%)
Resources

- http://www.citylab-project.eu/
- www.mettrans.org/metrofreight
- CITYLAB Observatory of Strategic Developments impact urban logistics (http://www.citylab-project.eu/deliverables/D2_1.pdf)
- Dablanc, Morganti, Arvidson, Woxenius, Browne, Saidi (submitted) The Rise of Instant Delivery Services in European Cities Supply Chain Forum an International Journal