Recent trends in last mile logistics solutions around the world

Dr. Laetitia Dablanc

Université Gustave Eiffel
Chair
Logistics City
University Gustave Eiffel (IFSTTAR) and Sogaris

Metrofreight
VREF Center of Excellence
Changes worldwide

- Global supply chains, technological changes, consumers’ behavior, societal demands
- Converging urban logistics operations: DHL, iFood, Prologis... brands catering for metropolitan areas worldwide
- Start-ups, urban freight tech everywhere
- Same-Day delivery
- On-demand delivery
- Drones, Remote locations
- Self-Driving cars, Remote locations
- Robots, Gated communities and closed campuses
- Storing packages for buyers to pick up
- Maximizing Delivery
- Not-at-Home & Failed Deliveries
- Gated Communities, Residential Buildings and Office Buildings
- Hospital Campuses, Corporate Campuses, and Universities
- Algorithms and Analytics
- Delivery Drones
- Delivery Robots
- Autonomous Cars
- Autonomous Delivery Vehicle (ADV)
- Autonomous Ground Vehicles (AGVs)
- Autonomous Pods
- Robotics
- Droid
- Robot Delivery Technologies
- Van/Drone/Robot Integrated System
- System of Systems
- Smart Door Lock
- Trunk Delivery
- Parcel Box
- Parcel Locker
- Mobile lockers
- Required Support Structure
- Warehouse Locations
- Unmanned Warehouses
- Platooning
- Tracking Technologies
- Low-Density Cities
- High-Density Cities
- Medium-Density Cities
- Same-day, Instant Delivery or Sunday delivery
Drones and robots for deliveries

- FAA recent approval for UPS on hospitals and campuses, tests from Wing/FedEx/Walgreens
- Swiss Post: delivery of pharmaceuticals in Zurich and Lugano
- JD in rural areas in China
- Flytrex in Rejkjavik, Island for Aha retail
- Nuro robots for Walmart and Kroger
"Home" deliveries, really?

<table>
<thead>
<tr>
<th></th>
<th>Manhattan</th>
<th>Paris</th>
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<tbody>
<tr>
<td>Home and in hands</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>To doorman</td>
<td>28</td>
<td>12</td>
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<tr>
<td>In mailbox</td>
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<td>15</td>
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<tr>
<td>In a store (click and collect)</td>
<td>4</td>
<td>2</td>
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<tr>
<td>In an automated locker</td>
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<td>0.5</td>
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<td>In post office</td>
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<td>5</td>
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<tr>
<td>In a pick up point</td>
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<td>21</td>
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<tr>
<td>At work</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Other</td>
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6T, 2018

- Pick-up points are an increasingly popular option
- Shared delivery lockers: Cubee (Belgium Post)
On-demand instant delivery services

- Deliveries in two hours
- Smartphones and digital platforms
- Gig workers, self contractors
- Firms becoming global, volumes increasing
- Provision of unskilled jobs in city centers of megacities

Kigali

Buenos Aires

Mumbai

London
800 Flex cars per day in and out of each Amazon urban fulfillment center

Median number of departures per facility per day (Sacramento, 2019, from M. Jaller):

- 45 heavy trucks
- 250 delivery vans
- 795 Flex cars
Informal logistics: low tech but efficient urban freight services

Dar es Salaam, Tanzania

Mumbai dabbawallas
Electric vans’ slow but steady uptake

DHL StreetScooters
FedEx and Chanje

Electrically assisted cargo-bikes increasingly popular in Europe

- Main advantage is access to bike lanes
- Berlin’s KoModo, Montreal Colibri, Dutch City Hubs, Belgium’s City Depot
- NYC to test the use of loading zones by cargo-bikes at no fee
Urban warehouse for Amazon Prime Now in Paris

Electric vans of delivery provider on roof
An electric freight barge on the Seine: Fludis

- Since September 2019 new barge from West port to central Paris
- Cargocycles on board
- Delivering parcels and pallets from Lyreco and IKEA on the way in; and Paprec electronic waste on the way back
Micro logistics hubs

• Micro consolidation centers in London for major parcel carriers, operating zero emission vehicles (cargo cycles or small vans): Zedify, Gnewt Cargo, DPD
• Fabric, Tel Aviv: automated micro-fulfillment centers

JD uses 400 micro-hubs in Beijin
‘Logistics hotels’

- Innovative architecture, often on former industrial/rail areas or former parking buildings
- Multi-story
- Multi-use: logistics, retail, residential, offices
- Sometimes multimodal

Hôtel logistique de Chapelle international (18e arr.) inauguré en juin 2018. © JGP
Demand for e-commerce urban warehouses in Europe: a niche but growing
(Cushman & Wakefield, 2018)

Source: Urban Space Model, Cushman & Wakefield
Innovation in public policy

- **London** Low Emission Zone: by October 2020 only Euro 6 trucks and vans
- **Shenzhen’s** 62,000 electric vans by end of 2018 (RMI, 2019): exemption from freight vehicles’ time restriction and strong municipal policy for charging stations’ implementation
- Promotion of off-hour deliveries **NYC**
- Curbside management, Loading/unloading zones AreaDUM in **Barcelona**, Spain, **Seattle** Urban Freight Lab
- RFPs for converting gas stations and car parks into logistics facilities in **Paris**

Porte Champerret Sogaris project
Conclusion

• Smart city logistics solutions not only about technology
• Policies, architecture, infrastructure, informal logistics
• Training, opening job options
• Data collection, data analytics, urban freight models including emissions and carbon footprint forecasts
**Resources**

- **METROFREIGHT**
  www.metrans.org/metrofreight
- Sustainable Urban Freight Systems
- Urban Freight Lab: https://depts.washington.edu/sctlctr/urban-freight-lab-0
- **CHAIR LOGISTICS CITY**: www.lvmt.fr/en/chaires/logistics-city-sogaris/
- Paris instant delivery surveys: https://hal.archives-ouvertes.fr/hal-02374915