Can urban shopping centres be a solution to cities’ e-commerce mobility challenges?

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According to EY, shopping centre customers optimise their trips by buying more than six items on average and by trip chaining, making it more environmentally friendly than e-commerce.
The impact is positive for urban or suburban shopping centres from the purchase of 4 products, 9 products for out-of-town shopping centres, justifying a journey of 20 kilometres.

Beaugrenelle, an urban shopping centre

Val d’Europe, a suburban shopping centre

Reference: Bicard, 2021
As retail becomes omnichannel, do shopping centres provide sustainable solutions for goods mobility as well? Example from Nordstan in Gothenburg

Underground goods delivery facility to accommodate approximately 300 freight trips per day

Incoming flows, for store replenishment

Project planned to use underground facility as micro-hub for cargo-bike deliveries to other establishments

Outgoing flows, for local delivery

Reference: Brettmo & Sanchez-Diaz, 2021
We conducted surveys and observations, mid-2021, on omnichannel logistics operations at two shopping centres: Beaugrenelle in Paris (1/14) and Val d’Europe outside of Paris (1/14)

31/99 retailers surveyed, observations on July 9 (8AM-9AM), 15 (9AM-10AM) and 23 (9AM-10AM)

33/81 retailers surveyed, observations on August 4 (9AM-10AM) and 6 (9AM-10AM)
Beaugrenelle: despite recent renovations, considerable difficulties in accommodating incoming flows during 6AM-10AM time window, too strict according to 9/31 retailers.

- Only access for incoming flows via narrow street and two gates, only left one used during observations.
- Three trucks unloading while others wait in street or on sidewalks.
- On street unloading activities to avoid delays, risking theft, fines and traffic obstruction.
- Delivery worker carrying boxes through main entrance.
Beaugrenelle: from a theoretical model for incoming flows to three alternative practices
Beaugrenelle: storage space too limited according to 16/31 retailers, resort to renting additional space in or nearby shopping centre and frequent store replenishment, the majority unconsolidated.

Storage in a retailer’s fitting room.
Val d’Europe: less frequent and more consolidated incoming flows, night deliveries and less dissatisfaction with storage space.

Replenishment frequency

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>Once a week</td>
<td>9</td>
</tr>
<tr>
<td>Two times a week</td>
<td>7</td>
</tr>
<tr>
<td>Three times a week</td>
<td>4</td>
</tr>
<tr>
<td>Four times per week</td>
<td>10</td>
</tr>
<tr>
<td>Five times a week</td>
<td>0</td>
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<tr>
<td>Daily</td>
<td>0</td>
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</tbody>
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Consolidated deliveries

- Yes: 12
- No: 21
Omnichannel operations organised separately from store replenishment with specialised companies, for click-and-collect (although mostly storage) and ship-from-store (although little used)

Worker carrying out a delivery for click-and-collect
Some concluding remarks…

- At shopping centre level, optimisations required for managing incoming and outgoing freight flows, especially urban
- At retailer level, optimisations required for managing omnichannel operations
- Brettmo and Sanchez-Diaz (2021) recommend collaboration, consolidation and optimisation initiatives
- Other concepts include “Common Logistics” (CITYLAB, 2018), “Shopping Fulfillment Center” (JLL Retail, 2018), urban consolidation centres (e.g., by URBY), shared storage areas (e.g., by Sogaris)