ESTIMATING THE CURRENT, EXPECTED AND POTENTIAL MARKET FOR CARGO BIKES

Lessons from The Netherlands

Providing a better understanding of the variety of urban freight transport

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NUMBER OF DELIVERY VANS IS GROWING

“In January, new registrations of vans totalled 142,864 units, 9.3% more than in January 2016”

London Assembly, Transport Committee (2016)
CARGO BIKES CAN BE A SOLUTION

- Though still <<1 % of freight movements in cities is done by cargo bike
- The potential of cargo bikes is often associated with:
  1. Increase of e-commerce parcel deliveries
  2. Development of city hubs

But to assess its potential we need a better understanding of the following:

- Who are driving around freight vehicles in cities?
- What do they deliver? And is this suitable for using cargo bikes?
- What share can be decoupled at a city hub?
HOW DID WE COLLECT OUR DATA?

• LEVV-NL survey
  70 respondents

• Traffic observations
  2200 freight vehicles
WHO OWNES THE VEHICLE?

Ownership of delivery vans
Source: TNO, Buck (based on RDW)

- Natural person
- Legal entity
- Business inventory

Almost half of the delivery vans are owned by a “natural person”
(e.g. private use or self employed)
WHO DRIVES AROUND?

Based on 2200 freight vehicles

- Logistic service provider
- Large supplier
- "Own transport"
- Service delivery
- Other

No company name
Other
WHAT DO THEY DELIVER?

Logistic service providers (21%)
- Parcel (10%)
- General cargo (10%)

Large suppliers (15%)
- HoReCa and food services (9%)
- Retail food (2%)
- Construction/installation (2%)

Own transport (32%)
- HoReCa and food services (13%)
- Construction/installation (12%)

Services (18%)
- Service at customer’s premises

Other (15%)
- Waste
- Municipal services
CAN IT BE DECOUPLED AT A CITY HUB?

Logistic service providers (20%)
- Parcel (10%)
- General cargo (10%)

Large suppliers (15%)
- HoReCa and food services (9%)
- Retail food (2%)
- Construction (2%)

Own transport (32%)
- HoReCa and food services (13%)

Potential, but often local supplier who values customer intimacy

Many already use hub or warehouse

Both supplier and freight need to be at the location

Majority is not suitable

Logistic service provider 21%
Large supplier 15%
Service delivery 18%
“Own transport” 31%
### WHICH CHARACTERISTICS DETERMINE POTENTIAL OF CARGO BIKE?

<table>
<thead>
<tr>
<th>Service</th>
<th>Network density</th>
<th>Parking time</th>
<th>Type of shipments</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcel</td>
<td>High</td>
<td>Short</td>
<td>Small and medium size</td>
<td>Very competitive</td>
</tr>
<tr>
<td>Horeca/food</td>
<td>Medium/high</td>
<td>Medium</td>
<td>• Heavy</td>
<td>Customer intimacy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Time critical</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Controlled</td>
<td></td>
</tr>
<tr>
<td>Construction and installation</td>
<td>Low</td>
<td>Medium/Long</td>
<td>• Diverse</td>
<td>Scattered</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Time critical</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>Low/medium</td>
<td>Long</td>
<td>Small</td>
<td>Operational excellence</td>
</tr>
</tbody>
</table>
CURRENT USE OF CARGOBIKES

Use of LEFVs in The Netherlands, based on LEVV-NL survey (n=40)

<table>
<thead>
<tr>
<th>Type of delivery with LEFV</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcels</td>
<td>18</td>
</tr>
<tr>
<td>Food</td>
<td>16</td>
</tr>
<tr>
<td>Post</td>
<td>14</td>
</tr>
<tr>
<td>Kids/Students</td>
<td>12</td>
</tr>
<tr>
<td>Other fresh products</td>
<td>10</td>
</tr>
<tr>
<td>Service and Construction</td>
<td>9</td>
</tr>
<tr>
<td>Meals</td>
<td>7</td>
</tr>
<tr>
<td>Fashion</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>
GROWTH IN CARGO BIKES PER USER

Expected growth of 300% for current users till 2020

Number of cargo bikes in use in 2016

Expected number of cargo bikes in 2020

average per respondent = 6

average per respondent = 27
When did your company start producing/using/selling light electric freight vehicles? (N=56)
When did your company start producing/using/selling light electric freight vehicles? (N=56)
BARRIERS AND OPPORTUNITIES

What are the main problems with the LEFVs you currently use? (N=30)

- Cargo capacity (in weight): 9
- Battery charging time: 8
- Availability charging infra: 7
- Range: 7
- Maintenance: 6
- Limited possibility to cool/freeze: 6
- Position in public space: 5
- Cargo capacity (in m3): 5
- Turning radius too large: 3
- Not allowed to park at...: 2
- Inapplicable: 5
- Other: 4

Which opportunities do you see to increase the use of LEFV in the future? (N=28)

- Stricter policies regarding conventional vehicles: 21
- Development of environmental zones: 19
- Improvements on technical aspects of LEFVs: 16
- Development of city hubs: 15
- Better cooperation in the sector: 11
WHAT WE DO KNOW

1. City logistics is very diverse in term of delivery characteristics and type of operators. Large operators have their own hubs/warehouses.
2. Many freight movements take place within the network of a single supplier.
3. Many freight vehicles do not deliver parcels.
4. Many deliveries require the supplier to get over the customer’s doorstep.
5. See 2, 3 and 4: these deliveries require a different strategy and a different logistics concept for selling or using cargo bikes.
6. Cargo bikes offer potential for many different deliveries, but current users experience problems with the loading capacity, range and maintenance.

WHAT WE DO NOT KNOW YET

• Detailed route characteristics per flow: including number of stops, number of deliveries a day, load factor, kilometres driven. 30-40% of vehicles is without company name: who are these operators?
• When will policies regarding conventional vehicles become more strict?
**QUESTIONS FOR DISCUSSION**

- Do you have freight data from (camera) observations in your city? Do they give similar findings?

- Which criteria are most important in determining the potential of cargo bikes? (e.g. network density or parking costs)

- We collect different best practices in an online database. Can you provide examples for the various freight flows (food, services, construction)? See: [https://levv-logic.shinyapps.io/dashboard/](https://levv-logic.shinyapps.io/dashboard/)

- How do cargo bikes fit in the urban environment? Do local governments have specific policies regarding cargo bikes?
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