The impact of e-commerce on final deliveries: alternative parcel delivery services in France and Germany

Mobil Tum
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Comparing French and German end-delivery options

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Project DISTRANS
Research on recent evolutions in the supply chain
2013 - 2015
E-commerce’s impact on final delivery sector

Delivery services:

Traditional
• Home delivery
• Post office

Alternative
• Automated pack station (APS)
• Pickup point (PP)
• Pickup point for e-grocery (at the supermarket): Drive

In 2012, 20% of e-commerce’s parcels are delivered in PPs

Preferred delivery options, France

Source: FEVAD, 2013
Alternative options to home delivery

**APS**  24h lockers located in shopping centers, gas stations, train station, on the street, etc.

**PP** Network of local shops where parcels are deposited for collection. Examples of host businesses are florists, tobacconists, etc.

Source: Augereau & Dablanc, 2008
Trends for reception point networks in Europe

<table>
<thead>
<tr>
<th>Company</th>
<th>Service type</th>
<th>Country</th>
<th>No. sites 2008</th>
<th>No. sites 2012</th>
<th>Growth rate 08-12</th>
<th>Parcel volumes 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>PackStation</td>
<td>APS</td>
<td>Ger.</td>
<td>1,000</td>
<td>2,500</td>
<td>+150%</td>
<td>N.A.</td>
</tr>
<tr>
<td>Paketshop (Hermes)</td>
<td>PP</td>
<td>Ger</td>
<td>13,000</td>
<td>14,000</td>
<td>+7.7%</td>
<td>N.A.</td>
</tr>
<tr>
<td>GLS</td>
<td>PP</td>
<td>Ger.</td>
<td>0</td>
<td>5,000</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>UPS</td>
<td>PP</td>
<td>Ger.</td>
<td>0</td>
<td>0 (2,000 in 2013)</td>
<td>2000%</td>
<td>N.A.</td>
</tr>
<tr>
<td>DPD</td>
<td>PP</td>
<td>Ger.</td>
<td>3,000</td>
<td>4,300</td>
<td>+43.3%</td>
<td>N.A.</td>
</tr>
<tr>
<td>DPAG/DHL offices</td>
<td>PP</td>
<td>Ger.</td>
<td>14,000</td>
<td>16,700</td>
<td>+23.7%</td>
<td>N.A.</td>
</tr>
<tr>
<td>ByBox</td>
<td>APS</td>
<td>F</td>
<td>Not implemented</td>
<td>170</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Cityssimo</td>
<td>APS</td>
<td>F</td>
<td>20</td>
<td>33</td>
<td>+55%</td>
<td></td>
</tr>
<tr>
<td>Kiala</td>
<td>PP</td>
<td>F</td>
<td>3,800 (with M.R.)</td>
<td>4,500</td>
<td>+18%</td>
<td></td>
</tr>
<tr>
<td>Pickup Services</td>
<td>PP</td>
<td>F</td>
<td>3,100 (à2pas)</td>
<td>5,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mondial Relay (Point Relais)</td>
<td>PP</td>
<td>F</td>
<td>3,800 (with Kiala)</td>
<td>4,300</td>
<td>+13%</td>
<td></td>
</tr>
<tr>
<td>Relais Colis (Sogep)</td>
<td>PP</td>
<td>F</td>
<td>4,000</td>
<td>4,200</td>
<td>+5%</td>
<td></td>
</tr>
<tr>
<td>La Poste offices</td>
<td>F</td>
<td>F</td>
<td>17,082</td>
<td>17,000</td>
<td>-0.0</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Source: the authors from various companies' data sources, 2013

18,200
The French system of PP

Atypical features of Point relais system:
- Early development, 30 years ago;
- 4 mayor players;
- Medium-sized network providers.

PP density over population and e-shoppers. France 2008-2012.

<table>
<thead>
<tr>
<th>Firm</th>
<th>PP per 100,000 inhabitants 2008</th>
<th>PP per 100,000 inhabitants 2012</th>
<th>PP per 10,000 e-shoppers 2008</th>
<th>PP per 10,000 e-shoppers 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiala</td>
<td>6.1</td>
<td>7</td>
<td>1.7*</td>
<td>1.4</td>
</tr>
<tr>
<td>Pickup Services</td>
<td>5</td>
<td>8.1</td>
<td>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Point Relais (Mondial Relais)</td>
<td>6.1</td>
<td>6.3</td>
<td>1.7*</td>
<td>1.3</td>
</tr>
<tr>
<td>Relais Colis</td>
<td>6.4</td>
<td>6.6</td>
<td>1.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Average</td>
<td>5.9</td>
<td>7</td>
<td>1.6</td>
<td>1.5</td>
</tr>
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.* Shared network until 2012
Source: Morganti with data from interviews. FEVAD and INSEE 2013.
4 PP networks cover the department with an aggregate of 391 parcel reception points. Each network offers a wide frame of PPs (from 70 to 134 sites each).

PPs networks have targeted shops and commercial outlets around train stations. One station out of two is within a 300 mt range from a PP.
Target areas for pickup points

Pick-up point locations in an urban area (City of Meaux)

PP network operators all target the same type of location for new PPs: the most densely populated areas and transportation nodes (main train and subway stations, road intersections).

→ Potential lack of partner stores for hosting PP
Pickup point network locations, Seine-et-Marne
Comparing urban and rural areas

PP density is high in urban areas and, as one would expect, tends to decline in rural regions. However, the coverage of rural areas by PP networks is not proportional to their population: 7% of PPs are located in rural areas, where lives 17% of the population.
E-commerce in Germany

- 60% of Germans is shopping online regularly
- Turnover in e-commerce grows considerably
- 55.9 Billion € turnover mail-order-business (48 Billion € with physical goods) in 2013
- 750 Million parcels in 2013 in Germany
- 48% Business to Consumers

Turnover in mail-order business (48 billion €) in 2013

High rate of returns (Fashion sector)

Data Source: Bevh.de (2013)
Recent trends in alternative delivery options - Germany

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Development of Packstations in Germany (DHL, 2011)

<table>
<thead>
<tr>
<th>Year</th>
<th># APS</th>
<th>Customers</th>
<th># municipalities with APS</th>
<th># of lockers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001/2002</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>2002</td>
<td>24</td>
<td>2,500</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>2009</td>
<td>2,500</td>
<td>1.4 Million</td>
<td>&gt; 1,600</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>2,500</td>
<td>2 Million</td>
<td>&gt;1,600</td>
<td>200,000</td>
</tr>
</tbody>
</table>
B2C Deliveries preferences - Germany

- 54% home address delivered to
- 3% packing station delivered to
- 22% work delivered to
- 11% central pick-up point delivered to

Source: AT Kearny (2012)
On-going research

PPs deployment in:

✓ Rural areas
✓ Suburban areas
✓ Urban areas

- High densely populated areas, i.e. Paris

Households car dependency

Shopping travel:
67% by walking
24% by public transportation
7% by car

Which is the impact of PP deliveries compared to home deliveries on Paris’ congestion and pollution?
Thank you for your attention
Amazon deliveries in California
Paris – ongoing research
Paris – ongoing research
PP network partner stores

Shop owners provide parcel reception services both for additional revenue and to generate more in-store traffic.

Local stores play a logistics role in the final delivery system.

Type of partner store in pickup points network, Seine-et-Marne

- Bar - Tobacco shop: 28%
- Stationary - Bookshop - Press: 14%
- Local supermarket: 12%
- Florist: 12%
- Dry cleaning: 8%
- Computers - Household appliances: 7%
- Gas station: 5%
- Clothing: 5%
- Optician: 5%
- Others: 4%

The development of PP networks in the end-delivery sector
Definitions and methodology
Pickup point network operators
Identifying the spatial patterns of PP network
Drafting a conceptual framework for PP networks
Average access distances to the nearest PPs:
- 1.6 km in urban areas
- 6 km in rural areas

Average access times by car:
- 4 minutes in urban areas
- 8 minutes in exurban/rural areas.

Network D, having a larger number of PPs sites, performs better than the others.
Location of the PP in the suburban areas

Pick-up point locations in an suburban area (Gretz and Ozoir)

In suburban areas: concentration of PPs in close to regional train stations

Map by Fortin, 2013
Location of the PP in the rural areas

In rural areas, the concentration of PPs reflects the structure of the village.

Map by Fortin, 2013
Conclusions

• PP network operators all target the same type of location for new PPs: the most densely populated areas and transportation nodes (main train and subway stations, road intersections).

→ Potential lack of partner stores for hosting PP

• PP density is high in urban areas and, as one would expect, tends to decline in rural regions. However, the coverage of rural areas by PP networks is not proportional to their population: 7% of PPs are located in concentrate in rural areas, which contain 17% of the population.

→ Disparities in PP accessibility between rural and urban area

• PPs carry a lower risk of missed deliveries and provide better shipment consolidation than home deliveries, which explains their recent large-scale deployment.

→ B2C delivery in PPs has same features then B2B deliveries