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Laboratoire d'Economie des Transports
Unité Mixte de Recherche du CNRS n° 5593
Université Lumière Lyon 2 - ENTPE

FINAL DELIVERIES FOR ONLINE SHOPPING

PICKUP POINT NETWORK SYSTEMS IN FRANCE

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ECTRI
European Conference of Transport Research Institutes

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Road Safety Research

Presentation outline

- Background on ecommerce delivery system
- Research question
- Methodology
- Case study: pickup point network in France
- Conclusions

Ecommerce impact on city logistics

- Increasing number of online shoppers in EU and online sales

- Increasing volume of goods to be delivered to the end consumer

- Fragmentation of flow in the “last mile”



End-consumer delivery services:

- Traditional
  - Home delivery
  - Post office

- Alternative
  - Pickup point (or reception point)

Network of local shops where packages are deposited for collection.
Open six days a week, during the opening hours of their host business
e.g. tobacconist, laundromats, florists, etc.

  - Locker bank

Networks of automated locker banks,
Open 24 hours a day from locker boxes
Located in shopping centres, petrol stations, train stations or on the street

Collection networks in Eu

Name	Service type*	Country	No. sites 2008	No. sites 2012	Growth rate 08-12	Parcel volumes 2012
ByBox	LB	UK	1.000	1.300	+30%	N.A.
Collect Plus	PP	UK	N.A.	5.000	N.A.	N.A.
PackStation	LB	Ger.	1.000	2.500	+150%	N.A.
Paketshop (Hermes)	PP	Ger.	13.000	14.000	+7,7%	N.A.
ByBox	LB	F	N.A.	105	N.A.	N.A.
Cityssimo	LB	F	20	31	+55%	N.A.
Kiala	PP	F	3.800 (with M.R.)	4.500	+18%	15 million
Pickup Services	PP	F	3.100 (à2pas)	5.200	+68%	9 million
Point Relais (Mondial Relay)	PP	F	3.800 (with Kiala)	4.300	+13%	12 million
Relais Colis	PP	F	4.000	4.200	+5%	23 million

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Source: own elaboration

➡ Trends on capillarisation and intensification of the networks

Rapid growth in France

Pick up points 20% of distance selling parcels
60 millions parcels in 2010
4 big PP networks
18.200 aggregate number of shops

Trends on density rate of pickup points France 2008- 2012

Nom	PP per 100.000 inabitants 2008	PP per 100.000 inabitants 2012	PP per 10.000 e-shoppers 2008	PP per 10.000 e-shoppers 2012
Kiala	6,1	7	1,7*	1,4
Pickup Services	5	8,1	1,4	1,7
Point Relais (Mondial Relais)	6,1	6,3	1,7*	1,3
Relais Colis	6,4	6,6	1,8	1,4

Research question

How the pickup point networks contribute to the freight mobility movements at the urban and periurban level?

Specific questions:
- structure of this type of delivery services
- ICT and organizational tools
- constraints and criteria on network implementation

Methodology

Qualitative methodology with an explorative approach

The investigation was structured in two parts:

1. Bibliographic search and data collection;

2. Interviews with representatives operating in the ambit of shipping services.

11 face-to-face individual interviews, semi-structured questionnaire.

➡ Case study: France

Questionnaire – Main topics

1. *Description of delivery service* parcel flux, # embedded shops, services offered, territories covered;

2. *ICT tools an operational process:* technology support and information platforms, operational procedures;

3. *Constraints on network implementation:* pickup point managers' perceptions of physical, operational, regulatory constraints and barriers;

4. *Network implementation criteria:* Sensitivity topic for its partial association with corporate strategies. Focus the existing network;

5. *Urban/Periurban/Rural areas and the case of Seine-et-Marne*: geographic classification and a case study in France.

Structure of pickup point network

Economic viability

Achieving economies of scale by computerising the system data

Scope

To attract a sufficient volume of goods:

- to reduce the unit cost of delivering parcels
- to reduce the proportion of fixed costs generated by the structure.

Network implementation process

Identification of macro-zones and“catchment areas” with regard to the potential flow of parcels.

Recruitment of local businesses

Selection of convenience stores and corner shop to be integrated in the network. Remuneration per parcel

ICT and organizational tools

Complex system of information flows:

parcel origin and destination, transport segments, location of loading warehouses, location of hubs, agencies and pickup points, business opening and holiday times, etc.

IT platform
To organise data and to maximise flows using optimisation algorithms.
operations to track parcels all along the delivery.

Integration

Constraints on network implementation

I. *Availability of local businesses* interested on entering the network

Local business as logistics chain operators
Convenience shops, florists, news kiosks, etc. actors in the last mile distribution chain and play a decisive role in activating and maintaining the network

Shop owners offer reception services for:
- extra revenue
- in the hope of generating more in-store traffic.

II. High dependency of the end-consumer delivery sector on *road transport and road infrastructures.*

Network implementation criteria

Locational criteria:
- population density factors;
- nodes for spatial mobility, i.e. public transportation nodes and main road gates.

Additional data are provided by:
- the adoption of trip generation models, i.e. purchasing trips model,
- screening data on housing patterns in land-use
- data on internet penetration and/or ICT household equipment

Urban & periurban areas

Network operators classified the territory in 3 on population density :

1. Hyper and very dense areas i.e. big cities
2. Low dense areas (rural)
3. Medium dense

- Administrative boundaries and urban/periurban classification are not relevant.

- Distinction on land use and housing type : *high rise buildings* and *detached houses*.

Conceptual framework

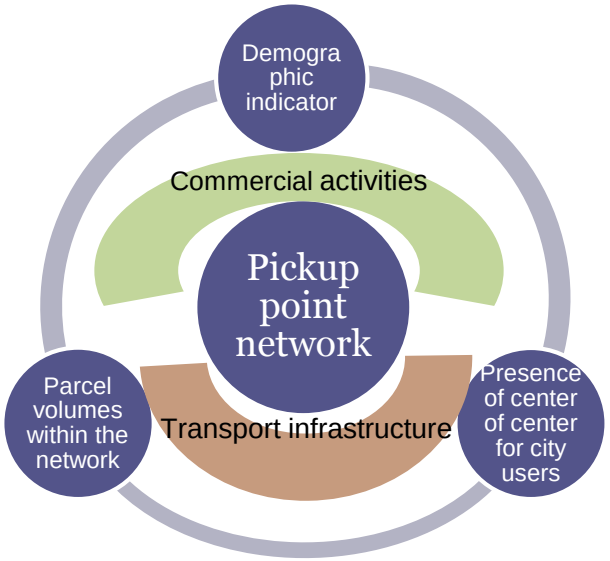
Three main **variables** for network implementation:

- demographic indicators;
- presence of gravity centers for city dwellers and city users;
  network parcel volumes at local level.

Constraints :

-Availability of retail activities and local shops;

- Infrastructures, road networks and/or public transport networks.



Conclusion

Ecommerce end-delivery shipping sector is evolving fast.
Fragmentation of parcel flows for home delivery.
Rapid growth pickup point networks in EU and in France

Potential growth of goods movements related to pickup point schemes and potential impact on urban freight mobility.

Identification of the main criteria and constraints to investigate PP network implementation in order to better evaluet the effets of this delivery scheme on city logistics operations

Thank you

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