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Challenges on Urban Logistics

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City

A complex system with numerous functions

RESIDENTS			ACTIVITIES
Private individuals consumers employees professional associations…	*Needs of exchanges*	**Industry Shops, Craftsmen Services**	
Management regulation	***Interactions Needs of exchanges Needs of regulation Concertation***	*Arbitrage choice*	
INSTITUTIONALS			
Services • Police • technical	*Needs of exchanges*	**Regulators :** Local authorities Chambres of Commerce Public Functions	

Challenges for Urban logistics

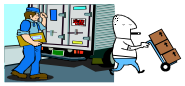
✓ **Functional**

✓ **Town planning**

✓ **Socio-economic**

✓ **Environnemental**

Functional challenges



Consultation and Private-Public Partnership

Adapted urban logistics

- regulation in accordance with needs and harmonisation,
- to manage person and goods transport harmoniously,
- To share road in terms of time and space equitably ,
- To combine constraints of space rarity and urban logistics,
- To promote the setting up of adapted logistics place.

Town planning challenges

- To **Preserve:**
  Inheritance
  balance between business area, and outlying area
- **To bring closer :**
  places of consumption and residence
  places of urban distribution
- **To promote:**
  mixed nature of activities
  location of platform *(industrial wasteland use or new urban logistics places*
- **To intensify the dynamism of city center:**
  Keep proximity shops and accessibility

Socio-economics challenges

- Accessibility for all
- Mixed nature of residence
- Mixed nature of shops, help for modernisation (Internet)
- Safety
- Quality of life
- To fit offer to new demand (new services, private or public initiative)

ex : proximity new services : delivery at home (Nanterre, Versailles),
Services boutique (Bordeaux, Chambéry). points relais (mail order to be delivered in shops, petrol station, boutiques Kiala,
shops7j/7, 24h/24,
Chronodrive, LAD, electronic lockers (consignity, e-box, homeport..),

Environnemental challenges

Concertation and Private/Public Partnership


- To Reduce nuisance while carrying on economic development
- To avoid congestion
- To encourage modal shift from road to rail or waterway in urban area,
  ex : tram cargo in Dresde or Amsterdam, Monoprix in Paris…
- To support new concepts

ex: the last mile on foot, by electric assisted bicycle, by un pollutant vehicles

- To support initiatives in favour of person modal shift

ex : free shuttle in city centre in Bayonne, Vélov ' and velib in Lyon an « parkings relais »

- To help innovations, perpetuate experiments

Heavy goods vehicles perception in city

Truck has often been «unwanted» in city

- Local councillors : image of the city, safety,
- Technicians : road sharing, parking place
- Residents : congestion, noise, safety, pollution,
- Shopkeepers, Craftsmen, Tertiary: necessary evil,

Unawareness of light commercial vehicles and trucks use in city

Common modes of action

- Restrictive Regulations
- Banning (size, surface, weight, place)
- Time windows constraint for delivery
- Keep away logistics on the outskirts of cities
- Legislative system not very used (SRU…)
- Few control

An approach for urban logistics knowledge

French national UGM programme:
surveys carried out by LET in Bordeaux, Dijon, Marseilles

… in order to identify how the traffic is generated

- To estimate road occupancy rates for goods vehicles, by type of activity and the congestion they cause.
- To analyse the way of UGM organisation and management
  - To identify pickup and delivery conditions according to business's operating methods.

Urban Goods Movements in urban traffic

- From 9 to 15 % of vehicles movements
- From 13 to 20 % of Vehicles*km
- 18 % in vehicules*km unit individual car
- From 20 à 25 % of road occupancy (with household purchasing)
- 25 % of greenhouse (CO2) gas emission in urban traffic

The components of Urban goods transport

PART in vehicules-km équivalent-particular vehicle

Deliveries and pickups, private sector (industry, commercial, tertiary establishments) *Source : LET, Bordeaux survey, 1996.*	39 %	
Individual purchases (individual moving of household for shoping). *Source : household moving national survey, 1990 and 1998, handling by E.SEGALOU, LET.*	51%	
The others flows 1. **Construction sites (**estimation, specific survey) 2. **Wastes transport** (estimation from a specific survey). 3. **Mail service (**estimation from a specific survey) 4. **Removals (**households and firms**)** 5. **Home deliveries (**estimation from 95 commercial establishment**)** 6. **Hospitals** (estimation from a specific survey)	10%	5 % 3% 1,2 % < 1%

LET, Bordeaux survey, 1995

Main characteristics of UGM

Essential role of the **activity**

Trade is >30% of deliveries/pick ups

> 50 % Light commercial vehicles for deliveries

Time of road occupancy : Parked vehicles =twice as moving vehicles

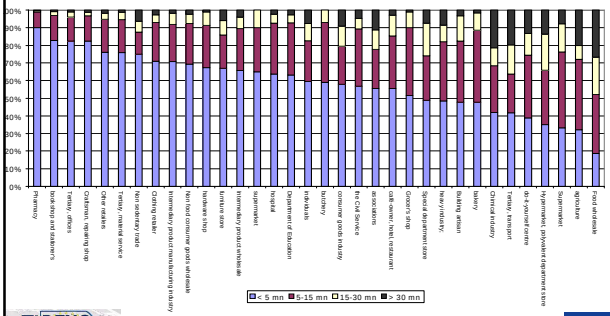
Not much handling means for deliver

Illicite parking **for deliver** :

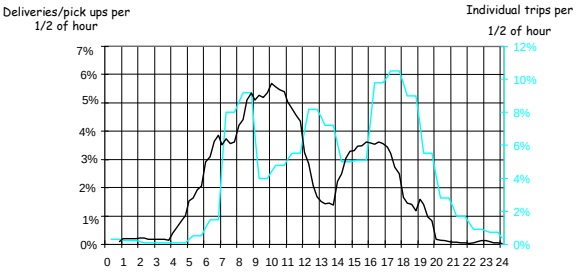
Double park > 50 % in hyper-centre,

Increases with the density of activities

Deliveries duration: >50 % of the deliveries between 1 to 5 mn 83 % in less than 11 mn



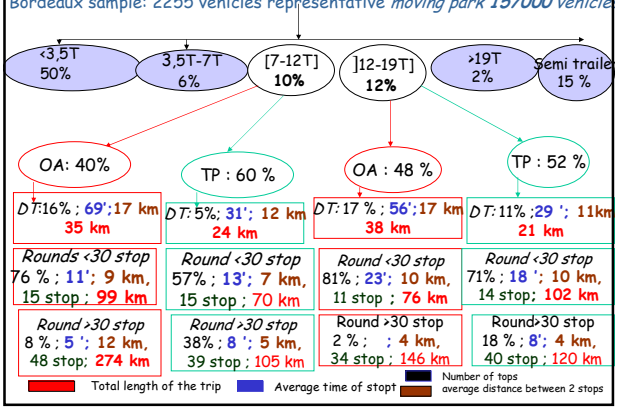
Hourly rhythm for deliveries/pick ups and individual trips in Bordeaux area



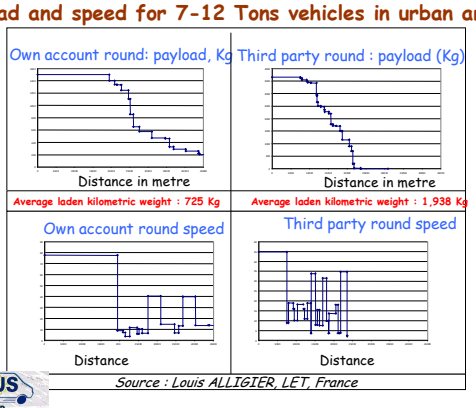
Hour for an ordinary day

Vehicle use in urban area

Bordeaux sample: 2255 vehicles representative *moving park* ***157000*** *vehicle*

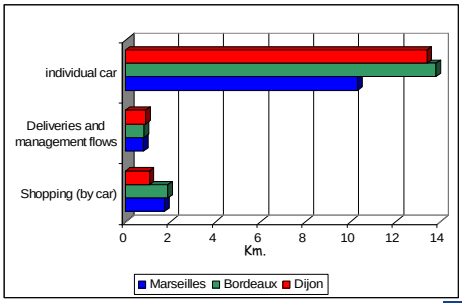


Payload and speed for 7-12 Tons vehicles in urban area



Source : Louis ALLIGIER, LET, France

Number of km generated in the town per inhabitant per day



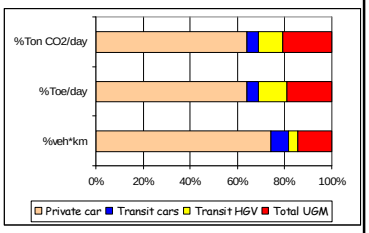
echnologie, Systems Consult, 2000, according to urban freight surveys results,

vehicles*km, consumption and pollutant emissions per inhabitant per day

Urban traffic in Bordeaux

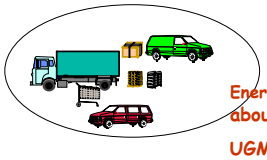
A large part of congestion, energy consumption and CO2 emissions caused by private cars

A low rate for the urban goods movements



ons oil equivalent, Source : LET, Aria Technologie, System consults, 2000.

Environnemental effect of UGM



Energy Consumption for UGM
about 20% of motorised traffic

UGM share in Marseilles:
deliveries/pick ups and urban management : 16 %
purchasing deplacement: 13 %

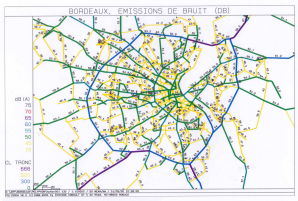
Part of goods in pollutant emissions

CO	NOx	HC	SO2	particules	CO2
13 %	37%	16 %	33%	48%	27%

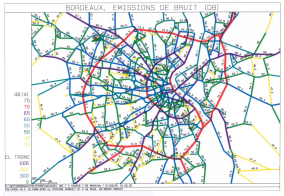
Source : LET-Aria Technologie, Bilan Marseille, 2000

The emissions of noise caused by the traffic on the road network in Bordeaux

Individual cars only



Total traffic (with UGM)



Sources: LET, Aria Technologie, Systems consult, 2000

Lever: road management

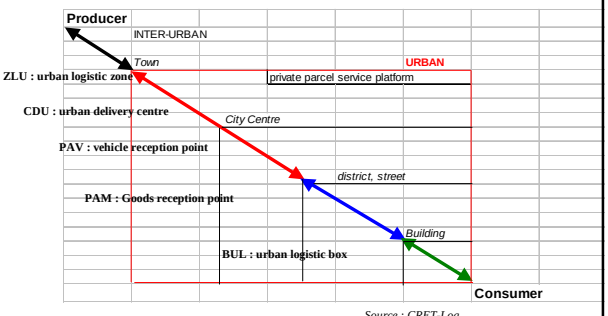
- To control access in city center with « high tech » innovation (camera in Italian cities, London …)
- To redefine the road sharing between bus, trucks, others users (multi uso way in Barcelone, Lincoln and bus lane in Paris)
- To offer more professionnal reception for deliverymen (Vehicle Reception Point in Bordeaux and Rouen)

Lever: experiments

- To incite, to promote and to develop experiments in accordance with evaluation standard: new vehicles, new technologies, new management
- To help private or public Local initiatives in Europe
- To help creation of structure in order to support the planer to perpetuate (financial help for data collection, follow up, evaluation, pay, premises), to help for administrative approache for dialogue with partners (difficult exchanges between public and private sphere)
- To adapt the legislative and regulation framework

B.Gérardin, PNMV

ELU : Urban Logistics Area



Source : CRET-Log

guide méthodologique pour la mise en œuvre d'Espaces Logistiques Urbain

All experiments :

- Aim at decreasing the impact of the truck in the city
- Lead to consolidate goods flows
- Cause expensive load brake (to be offset)
- Require public/private partnership
- Require to adapt regulations
- Need planer and financial help, punctually.





Thank you for your attention

Specific surveys

The methodology was based on tracking vehicle movements attributable to pick ups and deliveries in urban area.
Surveys have been carried out in Bordeaux, Dijon, Marseilles.
Tracking was carried out by means of three interlocking surveys:

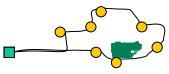
To establishments:

- 4,500 establishments
- 11,500 type of deliveries and pick ups/1week
- 10,000 type of parcels described

To deliverymen:

description of round and way of deliveries and pick ups to establishment

2,200 rounds
14,000 stops

- direct trips and rounds
- own account and third part
- all types of vehicles, included empty return

To carrier:

Fuel consumption and CO2 emissions per inhabitant, per job

Bordeaux	Fuel consumption (goe/inh.)	Fuel consumption (goe/job)	CO2/inh. (g)	CO2/job (g)
Shopping (by car)	132	297	420	944
Deliveries + management	163	368	518	1,170
Other (private car)	812	1,827	2,582	5,810
Total	1,107	2,492	3,520	7,925

Sources: d'après LET, Aria Technologie, Systems consult, 2000