



HOW URBAN LOGISTICS CAN CONTRIBUTE TO SUSTAINABLE CITIES



IMAGINE THE CITIES OF THE FUTURE WITH LE GROUPE LA POSTE

**PHILIPPE WAHL,
CHAIRMAN
AND CHIEF EXECUTIVE OFFICER**

E-commerce is maintaining its spectacular growth. More French people are using it, and are doing so more often. As things stand, online sales are growing by over 10% per year and the number of parcels delivered has doubled in seven years. And La Poste contributed its own record to proceedings in December, delivering two million parcels every day!

However, this **increased flow** means new responsibilities and challenges for urban settings, which are threatened with congestion and pollution. Because of our commitment to the ecological transition, Le Groupe La Poste is obliged to seek ideal and responsible solutions. How can we support the e-commerce boom, while making our cities more breathable and attractive?

This is the challenge that La Poste hopes to take up by **cooperating closely with cities**. One of the five priority projects in our strategic plan is to look at how urban logistics can contribute to sustainable cities. The Group works on everyone's behalf to achieve greener logistics, and is

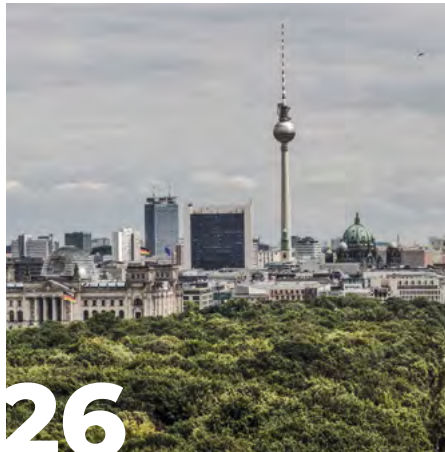
partnering with local authorities who are aiming to reduce urban congestion and return urban spaces to locals. The challenge for the Group is to contribute to the reinvention of cities and the rise in new ways of transporting goods.

We have signed agreements with 15 French cities to implement alternative solutions suitable for each location. We are working with local authorities, businesses and traders **to lay the foundations for a kind of urban logistics** that will be at the very heart of the way cities function in 10 years' time.

In these pages, you will discover how Le Groupe La Poste is embracing this approach in cooperation with major cities.

Happy reading!

Philippe Wahl, March 2019



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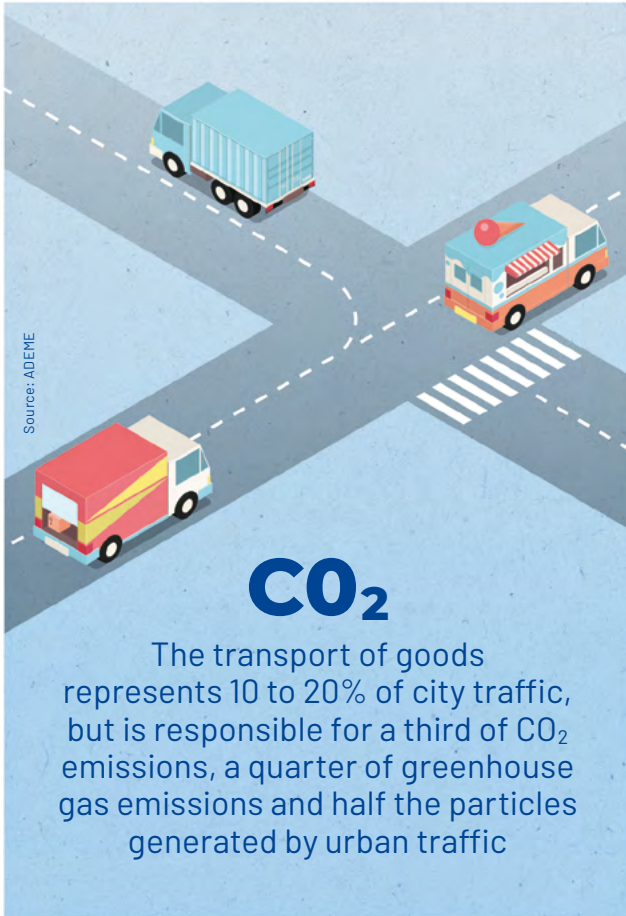
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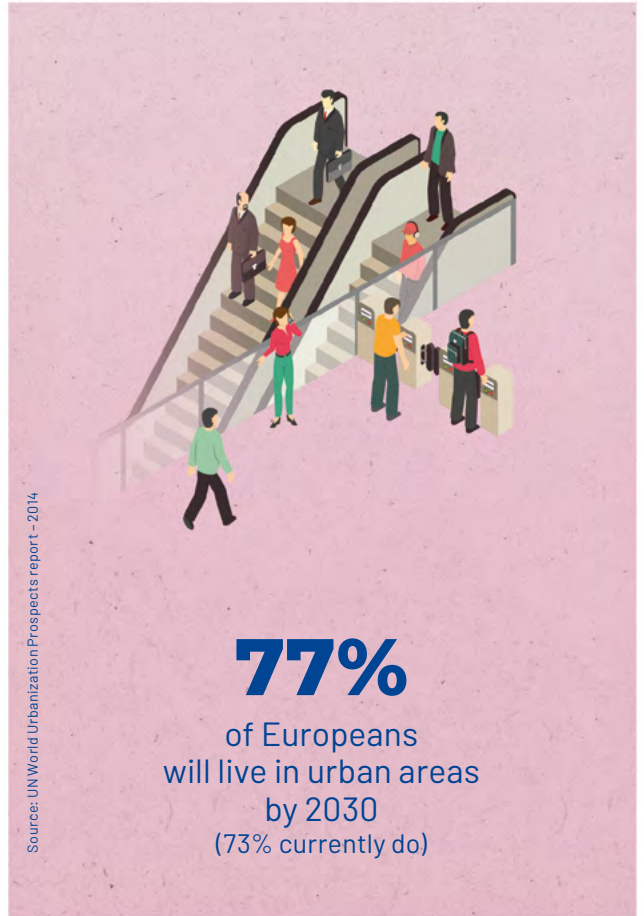
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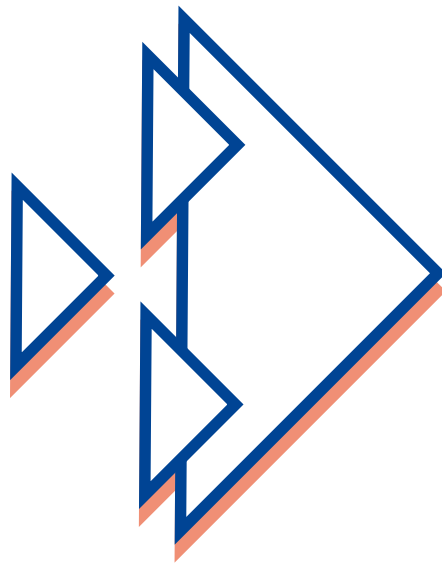






IMAGINE A CITY WHICH...

...reduces pollution
and congestion,
makes the centre
more attractive,
improves the recipient
experience and develops
respectfully.







...REDUCES POLLUTION AND CONGESTION

Air pollution may be responsible for 500,000 premature deaths in Europe a year¹. Every city is now battling pollution and congestion (half of which is likely due to transporting goods). Emission culling season is well underway, not only for public health reasons, but also for a better quality of life. 25% of these emissions are generated by road freight transport².

Citizens are hoping for an energy transition that will make urban areas healthier and reduce the adverse effects of congestion (noise, omnipresent motor vehicles, etc.).

Local authorities are working on two measures in response. One of the most common is new driving restrictions regarding delivery times, permitted vehicle types (to encourage alternative non-polluting vehicles) and routes. Some cities also require a certificate showing a vehicle's environmental class before allowing it to drive in their Low-Traffic Zones (known as ZCR in France).

Taxation is another lever used by some cities. For example, since 2010, London has reduced traffic by 15 to 20% by imposing a toll on vehicles wanting to access the city centre (congestion charge). The city has also been improving its public transport, especially the buses.

¹ 2017 figure from the European Environment Agency

² ADEME figure



...IS MAKING THE CENTRE MORE ATTRACTIVE

City centre traders are facing competition from those on the outskirts and from online sellers.

Various criteria contribute to how attractive a city centre is. Today's traders have to operate in pleasant surroundings and be able to have their goods delivered more easily. Traders must also be able to reinvent themselves and offer extra services to retain customer loyalty, such as product home delivery.





...IMPROVES THE RECIPIENT EXPERIENCE

Major cities are home to a growing proportion of well-qualified high earners who are big consumers of innovative urban logistics services.

Thanks to digital technology, we are fast changing how we do things in cities and this is having an impact on logistics needs.

Requirements are evolving; e-commerce is transforming relationships with consumers. Individuals are demanding a better online buying experience: half of French people are happy to stop ordering products on the internet if the delivery terms are unsatisfactory.

The overall experience is increasingly important when buying: people want their deliveries to come to the location of their choice, when they want, and to arrive as quickly as possible. Consumers are seeking extra logistics services like on-demand delivery, management of return-to-sender items and one-hour delivery slots. At the same time, competition between platforms is driving online sellers to offer quicker delivery times so they can stand out from the crowd.

72% of online buyers believe it's important to find out who the courier will be when making a purchase and 20% are members of a courier loyalty scheme³. However, 84% of online buyers still view in-store purchases as an important part of their buying experience⁴.

³ DPDgroup e-shopper barometer 2018

⁴ UPS European study 2017



...DEVELOPS RESPECTFULLY

Changing demographics are making city logistics flows more complex. Demand is focused on city centres, while depots are located on the outskirts (a concept known as logistics sprawl⁵). As well as these changes, the food trade is being restructured into small franchise stores. Logistics sites are being moved to the outskirts of cities to take advantage of lower real estate costs and this is leading to more urban journeys.

The distances covered when delivering goods to city centres have substantially increased since the 70s. For example, in Paris, the average distance between depots and the city itself has gone from 4 to 10 miles in 30 years.

Urban sprawl comes with a cost because it leads to more journeys. It increases spending on transporting people and goods and results in a poorer quality of life (wasted journey time, air pollution and sound pollution).

What's more, urban sprawl "eats up" natural and semi-natural areas: Between 2006 and 2012, 264,000 acres of land were lost each year⁶: about the same area as Hong Kong annually. The main characteristic of urban sprawl is that these artificial spaces are expanding quicker than the population is growing. One way to contain the sprawl is to make the most of how urban locations are used and encourage a diverse range of activities in buildings.

⁵ "Étalement logistique" in French

⁶ According to a European Union estimate

FOCUS ON EXPERIENCES

All cities are starting to pay more attention to their CO₂ emissions, traffic flow and attractiveness in a bid to give residents a better quality of life.

Five solutions have transformed urban logistics in Grenoble, Bordeaux, Paris, Toulouse and Lille:

- Pooling centre
- Local logistics space and urban logistics HQ
- Wholesale market
- Micro-depots
- Multi-modal distribution platform







Grenoble's Urby pooling centre is located in Fontaine, within 4 miles of Grenoble city centre.



GRENOBLE DECIDES TO POOL RESOURCES

Driven by a desire to make its logistics transport system more efficient and to improve air quality, the Grenoble Metropolitan Area is undertaking innovative new projects. The aim: to boost the image of a young, clean, pleasant and dynamic city, and improve the university campus, its world-class digital technology hub. Its project, Grenoble CapitaleVerte 2022, was launched in 2019 to create

a sustainable future. Grenoble already has a stringent low-traffic goods transport plan and has announced the end of diesel by 2025. The city is surrounded by mountains and is only connected to the main route between Lyon and Marseille by one road. To find solutions and circumvent these location and road issues, the Grenoble-Alpes Metropolitan Area and the SMTC public transport authority decided to launch an innovative urban logistics initiative in cooperation with partners.

This consortium project, known as Urby, was launched by Le Groupe La Poste and built up with the help of local stakeholders. One is a bike courier company called Vélocité. This was the first Call for Expressions of Interest (CEI) launched by a French city for conducting and managing a project of this type. Located in Fontaine, within 4 miles of Grenoble city centre, Urby is this **new pooling centre.** It gathers and delivers goods (pallets and parcels) to companies and traders. It manages returns to sender, including collecting recyclable



items. It also offers city-centre traders storage and home delivery services for their own customers: bikes, kitchens, etc. New services are being tried: evening delivery, reverse logistics for paper and food oils, etc.

All courier deliveries are made by low-emission vehicles (electric or natural gas) or by bike.

The Urby pooling centre at the edge of the city stops lorries with partial loads going into the city and reduces delivery vehicle numbers by making sure each is fully loaded.

urby

**POOLING
CENTRE**

1 AMBITION

To provide a new economic model for urban logistics. How? By reducing the environmental impact of deliveries by pooling complementary professional services.

3 SERVICES

- Urban pick-ups and deliveries
- Storage, order preparation and restocking
- Reverse logistics: returning products to sender, removing products manufactured in the city and picking up recycling (e.g. cardboard, pallets). This means the pooling that goes on at the centre covers activity going into and leaving the city.

5 CENTRES

In 2018, five new Urby pooling centres opened with the same model as the one in Grenoble: Montpellier, Lyon, Toulouse, Saint-Étienne and Clermont-Ferrand.

22 CITIES

The aim is to support each of France's 22 metropolitan areas by installing 22 pooling centres by 2020 to create a network of centres and connected local urban logistics areas.



The riders at the Bordeaux local logistics space deliver to the construction area using bikes with trailers.



BORDEAUX FACILITATES TRADER LOGISTICS AND LIMITS URBAN SPRAWL

This Metropolitan Area has been growing and changing since 1995 and has involved all economic stakeholders in the city's ongoing responsible development process.

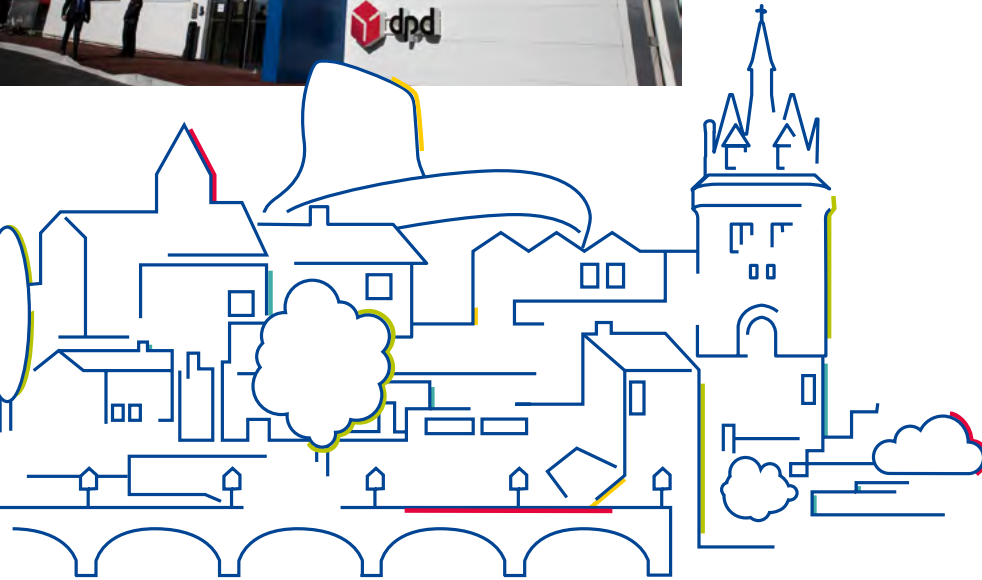
Its 2030 urban project is clear: *"Greater Bordeaux, for a Sustainable Metropolitan Area"*. The aim is to make the city a dynamic economic hub and nice place to live, while controlling urban sprawl.

Three initial tramlines emblematic of a **clean transport policy** and covering 41 miles are already in operation; the fourth, Line D, is under construction. Until it opens in 2020, some construction work will be ongoing in the narrow city centre shopping streets. La Poste is supporting the efforts of the city and the Chamber of Commerce and Industry to curb the negative impact of this and enable businesses to continue their activities. How? By launching a new initiative known as a **local logistics space (ELP)** at the

back of the existing post office and next to the construction area. La Poste is providing deliveries (parcels, pallets, dry and fresh goods) to and from businesses on these roads using bikes with trailers to stop couriers driving and parking in the area. La Poste is also offering an on-demand packaging collection service to declutter businesses and streets. There is also a home delivery service that takes products (bread, groceries, medicine, etc.) from businesses to customers.



The HLU in Bordeaux, the first Le Groupe La Poste site to be shared by its three parcel delivery operators.



13,800 PARCELS RECEIVED A DAY

155 people process the 13,800 parcels received daily by the urban logistics HQ (HLU) in Bordeaux run by La Poste.

166 TRADERS

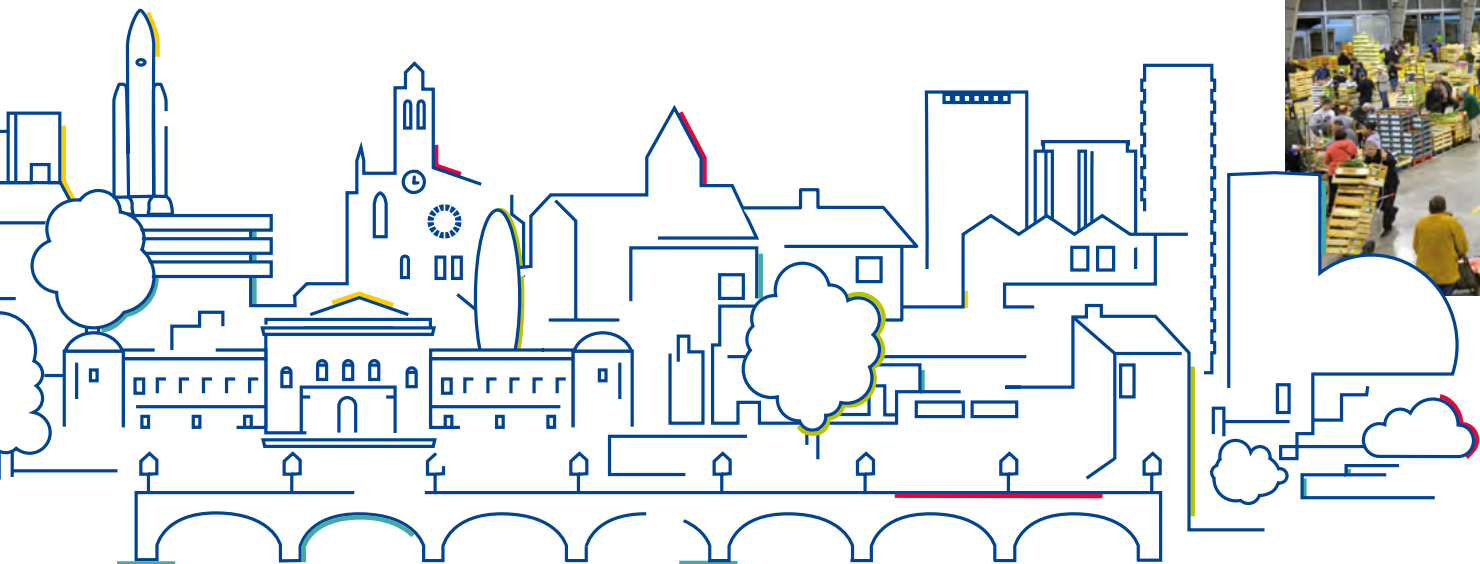
are benefiting from the urban logistics area while the **Bordeaux Line D tramline** is being built.

95% REDUCTION IN PARTICLES AND NITROGEN OXIDE

generated by postal parcel delivery activities thanks to the use of electric vehicles in central Bordeaux.

Estimated reduction in greenhouse gas emissions: - 81%.

To limit urban sprawl and combat congestion and pollution in Bordeaux, La Poste has streamlined its sites. All its activities in the city now run out of a multi-operator **urban logistics HQ (HLU)**. Thanks to the HLU, there is room for optimum collaboration, and pooling can help with Group operator (Chronopost, Colissimo, DPD France) real estate costs and low-emission vehicle deliveries (electric and natural gas). This new infrastructure has benefited from the “future investment programme” set up by the French government to fund innovative and promising investment in the territory.



TOULOUSE

MODERNISES ITS LAST MILE

At the 50-acre Toulouse Occitanie Wholesale Market in Fondeyre, you can buy seafood, meat, fruit, vegetables and plants within 2.5 miles of the city centre.

In 2017, it began operating under a 22-year Public Service Delegation Contract (DSP) run by the **Lumin'Toulouse** consortium.

This group contains **food and logistics experts**: Semmaris (Rungis Market), Caisse d'Épargne and Le Groupe La Poste.

In 2019, the market will become an urban pooling centre thanks to the two components of the Lumin'Toulouse project: **renovating the existing market and launching a new local logistics zone.**

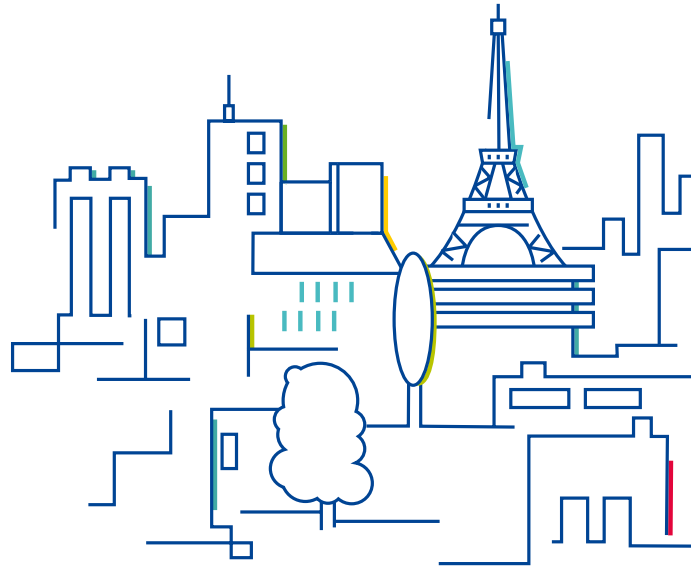
This new **pooling centre** is set to become the first link in Toulouse's last mile chain. Comprising two buildings totalling 18,600 square metres, it will also boast secure HGV parking. By pooling flows, this platform will reduce the number of vehicles inside Toulouse's ring road and the distance covered. This urban logistics initiative is unique in scope for a regional

metropolitan area and involves new goods transport, multi-modal and pooling methods.

It will also enable the Chronofresh express fresh food delivery service already used by Toulouse traders and restaurateurs to develop.



Toulouse Wholesale Market is the second biggest in France by amount of food.



PARIS OFFERS A CLEAN AND CONVENIENT LAST MILE

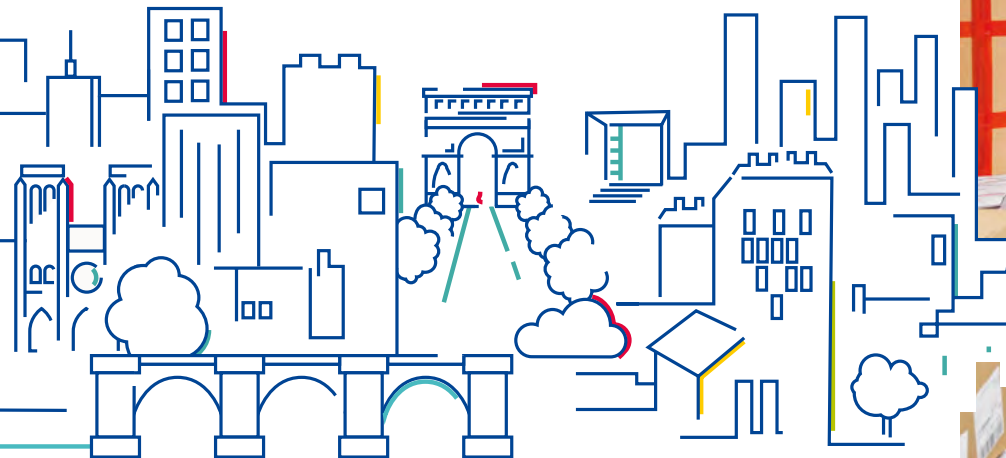
How can we meet the challenges created by the e-commerce boom and deploy an urban policy focused on reducing pollution? In Paris, the Charter for Sustainable Urban Logistics signed in 2013 aims to achieve non-diesel delivery by 2020. This supports logistics industry players in inventing new eco-friendly models featuring more active transport methods (on foot, by bike, etc.).

Paris has also adopted a *Climate Plan*: zero diesel vehicles by 2024, and zero petrol vehicles by 2030. La Poste is working closely with Paris City Hall in these areas. The aim: to make central

Paris more attractive despite booming delivery volumes, while limiting the polluting and congesting effects of logistics activity.

A possible answer: La Poste is looking into launching a network of local **micro-depots** in the capital for parcel deliveries.

These small logistics sites would be the starting point for home delivery rounds done on foot or by cargo bike.



...PARIS

City centre parcel logistics would be transformed and Parisians would have better and more flexible access to their parcels. **Micro-depots**, sometimes with parcel lockers available 24 hours a day, 7 days a week, would give Parisians even more collection options.

To boost the development of “soft” delivery methods in the capital, La Poste has run an on-foot delivery pilot with “robotic trolleys” over six months in the 4th and 14th arrondissements.

COMING CLOSER TO RECIPIENTS

The same local strategy has led to Chronopost opening three Urban Logistics Areas (ELU) in Paris: at la Concorde, Beaugrenelle and Bercy. The operator is massing and pooling its flows, while coming closer to recipients. This reduces the distance covered, as well as traffic congestion. The Bercy ELU covers 3,600 square metres. Opened in November 2017, it runs 44 rounds including fresh and frozen food deliveries.

With these three ELUs, Chronopost will reach its goal of delivering to the whole of Paris with alternative vehicles (natural gas, electric, bikes, delivery tricycles and trolleys) by 1 July 2019 and reducing air pollution. These new

services supplement the DPD France Mister Pasha concierge solution. The latter has been available in Paris since 2015 and is aimed at online sellers wanting to retain customer loyalty by offering a standout delivery service. Customers can choose a delivery time that works for them, including evenings and Saturday mornings, and have several parcels delivered at once.

INVENTONS LA MÉTROPOLE DU GRAND PARIS

To reinstate logistics functions in the city, **Poste Immo – the real estate subsidiary of Le Groupe La Poste, Sogaris and Icade – has come up with an ambitious project involving 50,000 square metres of multi-use space:**

>



Robotic trolley experiment in the 4th and 14th arrondissements of Paris.

Opposite, the Paris Beaugrenelle urban logistics space has enabled Chronopost to halve the distance covered.

**20%
OF VEHICLES
DRIVING ROUND
PARIS**

are transporting goods
(source: City of Paris).

**100,000
PARCELS
DELIVERED
DAILY IN PARIS
BY LE GROUPE
LA POSTE**

**40%
INCREASE
IN GREATER
PARIS REGION
WAREHOUSING
SPACE**

In 40 years, warehousing space in the Greater Paris region has grown by 40% overall, but reduced by 9% in the inner suburbs.

offices, sports facilities, a hotel, businesses and an **urban logistics HQ** covering 17,000 square metres. Having won the *Inventons la Métropole du Grand Paris* call for projects for the Bercy-Charenton site in 2017, the subsidiary is set to transform a plot of abandoned railway land into a major urban logistics hub. Poste Immo and Le Groupe La Poste are investing in and will be future users of the **urban logistics HQ**. Le Groupe La Poste will run half its **multi-modal rail/road/tram logistics zone**. The depot will process 170,000 tonnes of goods a year and reduce logistics chain CO₂ emissions by 82%. This represents real progress for the environment.



The Chronofresh temperature-controlled transport service has been offered by Chronopostfood since the end of 2015.



LILLE ENCOURAGES POOLING AND MULTI-MODAL TRANSPORT

In 2000, the Lille European Metropolitan Area (MEL) launched its first Urban Development Plan (PDU). Since then, it has remained committed to managing journeys in the region and encouraged people to travel without using cars: instead, taking public transport, walking or cycling. In this virtuous context, the Mayor of Lille has signed an agreement with Le Groupe La Poste to launch an evening parcel delivery service that uses low-emission vehicles certified as quiet. The commitment also involves

gradually making all rounds low-emission, eventually stopping the use of diesel altogether.

At the start of 2018, Le Groupe La Poste won the Port de Lille Call for Expressions of Interest and is running the **goods pooling centre** at the edge of Lille in partnership with a start-up called Oxipio.

This **multi-modal distribution platform** covering 5000 square metres is on the railway and waterway networks and will provide new storage space near the city centre and major roads.

This will mean new logistics services can be offered to Lille traders to quickly declutter urban spaces, improve air quality and make the most of retail areas for better customer service. With its experience launching Urby platforms in other French cities, Le Groupe La Poste is the metropolitan area's natural partner for this project. The site is ideally located near the city centre and major roads.



The French can collect their parcels at Pickup Stations in places they already visit daily, such as this railway station.



AND URBY CONTINUES ON...

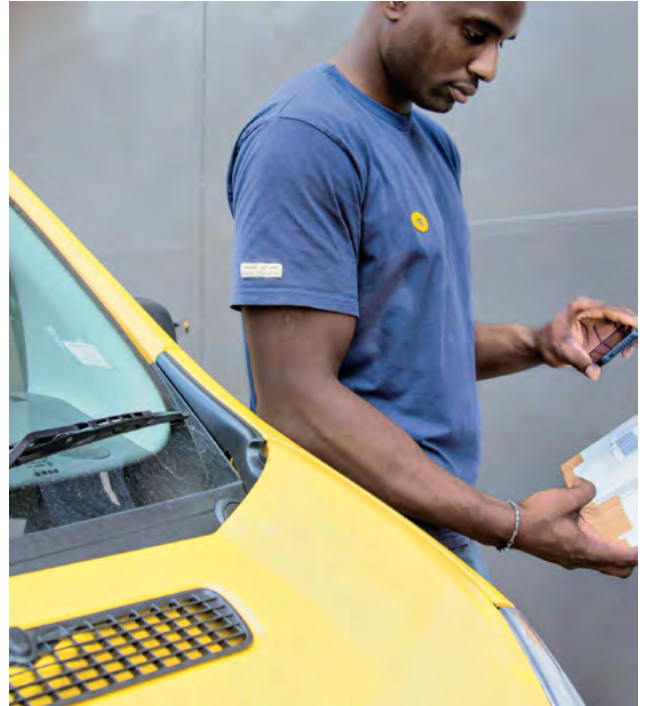
Le Groupe La Poste is supporting other local authorities with this move towards pooling, with partnerships begun in 14 cities to make the locality cleaner and more breathable. La Poste is partnering with **Urby pooling centres** launched in autumn 2018 in Montpellier, Lyon, Toulouse, Saint-Étienne and Clermont Ferrand (p.15). Because La Poste believes that this cooperative approach will give rise to solutions that reduce pollution and traffic, a range of similar projects will be undertaken in 2019 to support as many cities as possible.

57 CITIES AND METROPOLITAN AREAS

In three years, La Poste has become the trusted partner of 57 cities and metropolitan areas in France. It has sowed the seeds for fruitful dialogue with local authorities to support them in tackling congestion, pollution and urban consolidation, and making city centres more attractive. In addition to mobility issues, La Poste has been attentive to their problems, deploying a **fleet of 36,000 low-emission vehicles** for postal activities, including 150 that run on natural gas. It has also gradually installed **350 parcel lockers** in almost 55 cities (13 in the Greater Paris region) and created a network of over **8000 Pickup points** across France (plus over 42,000 in Europe).



01



04



02



05



03

- 01 Pickup Station at Lyon Croix Rousse post office
- 02 Stuart is the Le Groupe La Poste subsidiary specialising in on-demand local delivery, especially by bike
- 03 The Bordeaux urban logistics HQ (HLU)
- 04 A mail carrier scans a parcel barcode
- 05 Electric La Poste vehicles being charged
- 06 Bercy Urban Logistics Space has cold stores and refrigerated vehicles
- 07 Lyon's Urby goods pooling centre
- 08 The robotic trolley tested in Rueil-Malmaison (92)
- 09 DPD delivery in Orléans
- 10 Thanks to the mobile containers used by Colissimo, each lorry can carry 30% more parcels
- 11 Cargo bike in Montpellier



06



09



07



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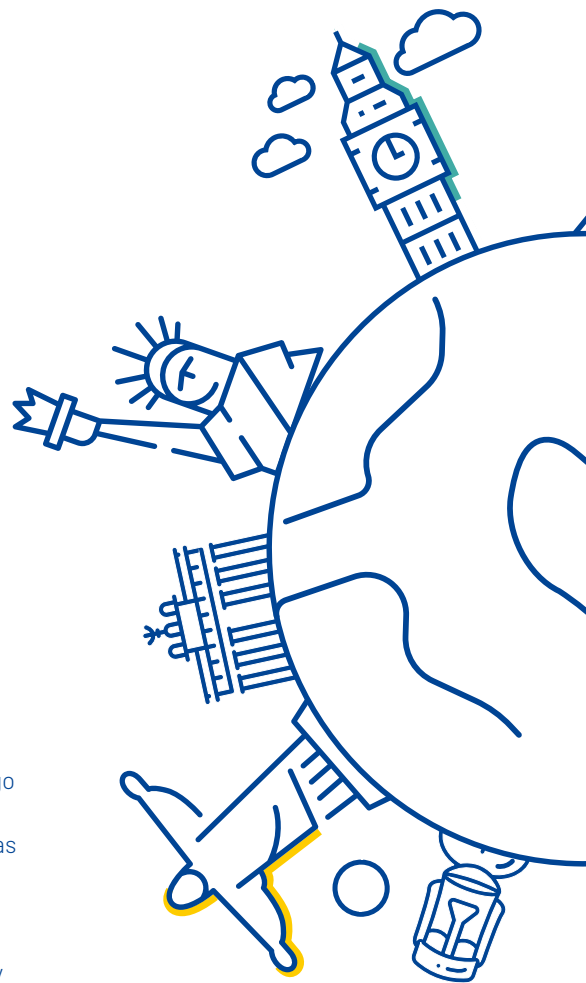


08



11

AND ELSEWHERE?



BANNING THE MOST POLLUTING VEHICLES FROM CITY CENTRES

Some European cities have held referendums asking citizens to have their say on **whether to gradually ban the most polluting vehicles from city centres**. In **Milan**, for example, a referendum on a plan to reduce congestion and pollution was passed in 2012 with around 80% of voters in favour.

TAXING ROAD USERS TO FIGHT CONGESTION

Since 2003, **London** has been fighting congestion with an **urban toll** known as the congestion charge⁷.

It has various aims: to encourage people to use public transport, to reduce traffic jams, to create and maintain an orderly traffic flow and to improve air quality. Since the measure was introduced, London traffic has reduced by around 20%. Three major cities in **Norway** (Oslo, Bergen and Trondheim) are also using this system, as is **Singapore**.

⁷ "frais de congestion" in French

MICRO-DEPOT EXPERIMENTS

One new option in urban logistics is combining **urban micro-depots** and "soft" delivery methods (bikes or cargo bikes). Le Groupe La Poste is set to open 80 more in Paris by 2024 and has successfully experimented with this model in several European cities. In **Madrid**, Le Groupe La Poste's Spanish subsidiary SEUR has already opened five of these micro-depots. In **Nuremberg**, Germany, a pilot project supported by a variety of stakeholders has tested out a new model. This model is unique as it uses **micro-depots** and **deliveries by couriers on bikes or with trolleys**. City centre micro-depots can be containers, vehicles or buildings. Deliveries are made using an equally efficient alternative fleet to circumvent morning traffic jams and reduce pollution.

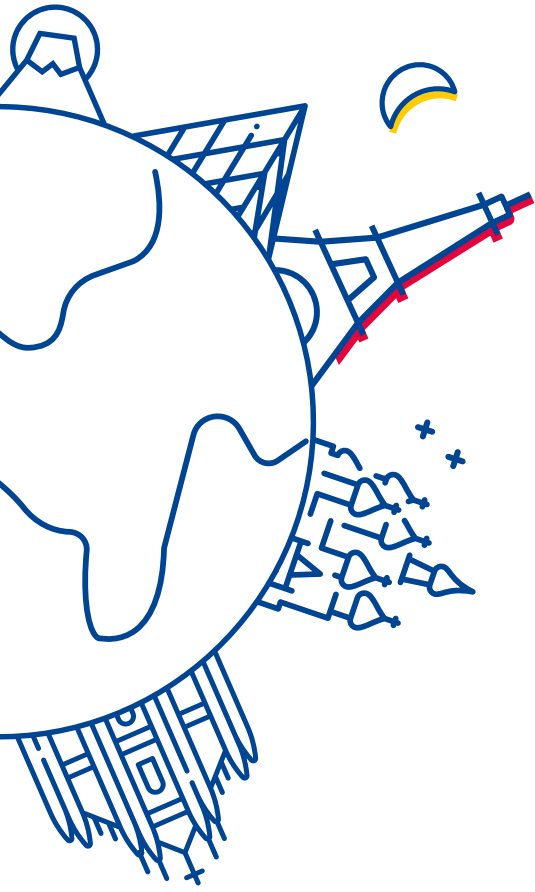
LOGISTICS REAL ESTATE: BUILDING UP AND DOWN

One new line of research at odds with the trends of recent decades is **constructing ad hoc logistics real estate in built-up urban areas**. Multi-level depots are back in the **Far East** and **Asia**: a specialist seven-storey urban logistics terminal opened in Tokyo in 2005. In **Europe**, limited

site availability and high land costs in urban locations are gradually leading to multi-level depots (with access ramps) being considered to make the most of the space available. Of course, e-commerce is helping shorten the order preparation process and already turning depots into production plants. Given the pressure of real estate costs, car parks are also being made into logistics spaces.

PUBLIC PLAYERS IMPOSING A POOLED APPROACH

Some localities are opening **urban distribution centres (CDU)** to regulate the distribution of goods coming into the city centre and these are



sometimes run by a municipally-owned public logistics company. In [Vicenza](#), an Italian city of 120,000 people, city centre urban logistics is now a public service run by a specialist provider. Veloce is 55% owned by the municipality, while the rest is owned by professional organisations in the city. In France, [La Rochelle](#) tested the model between 2002 and 2018.

CITIZENS TAKING THINGS INTO THEIR OWN HANDS

In [Yokohama](#), a group of traders has managed 85% of deliveries to city centre businesses since 2007, **without the municipality being involved or imposing pooling.**

CITIZEN NETWORKS

Citizen or peer networks are another alternative to C2C⁸. The idea of **crowdsourced shopping deliveries** has been taken up by major retailers such as Carrefour in France with its Merci Voisin! platform. People who are in-store anyway can help their neighbours out by taking them their shopping and are compensated for their efforts. In the [United States](#), Walmart has experimented with staff delivering online customer orders on their way home from work.

PARCEL LOCKERS IN APARTMENT BLOCK LOBBIES

There are now fewer letters and more parcels. Hence, the idea of **turning letterboxes into “parcel boxes”** by installing parcel lockers in apartment block lobbies. Amazon has launched the idea in the [USA](#) with its Amazon Hub lockers secured with an electronic code. Meanwhile, ParcelLock parcel boxes can be found across Germany. [German company Renz](#) offers **connected racks** that are both letterboxes and parcel boxes. These can be made private for a delivery using a code, a badge and, soon, a message on the recipient’s mobile phone.

DELIVERY ROBOTS

[Düsseldorf](#) and [Hamburg](#) have been the first cities to test out home parcel deliveries by robot. This has meant locals can **have home deliveries by a robot** from [Estonian start-up Starship Technologies](#). These devices open up new prospects for express local deliveries.

REAL-TIME TRAFFIC MANAGEMENT

Traffic can be regulated and monitored in real-time thanks to the rise of connected objects. [Amsterdam](#) has a Smart Mobility programme that makes it the most proactive city in this sphere. In a bid to **become a smart city** and install an effective Internet of Things, it is developing its wireless infrastructure.

LE GROUPE LA POSTE INTERNATIONAL EXPANSION

Le Groupe La Poste makes 27% of its revenue abroad through the logistics activities run by its DPDgroup network. The Group is mainly active in [Europe](#) under four brands: DPD, Chronopost, SEUR and BRT (plus JadLog in [Brazil](#) and Ninja Van in [Singapore](#)).

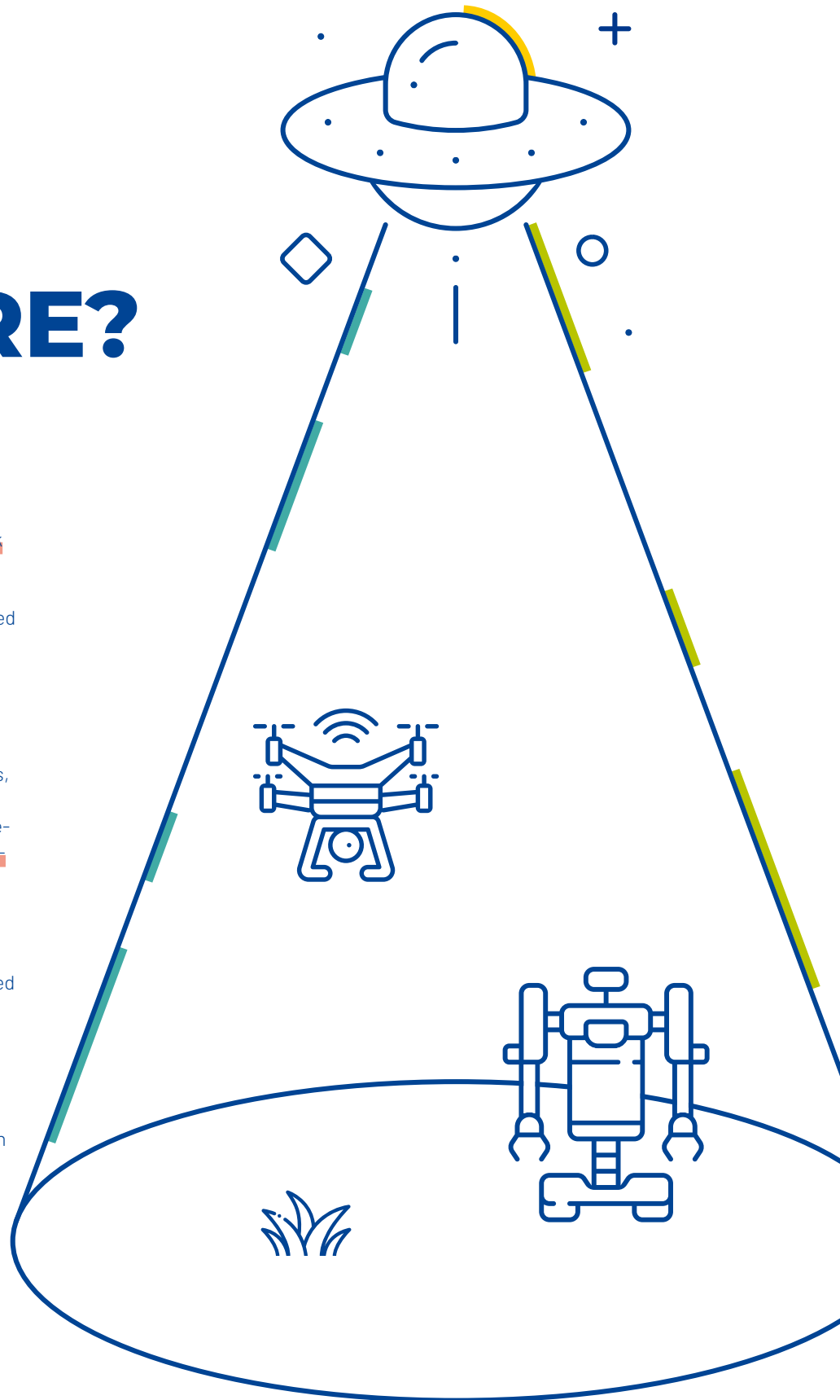
⁸ consumer to consumer

AND IN FUTURE?

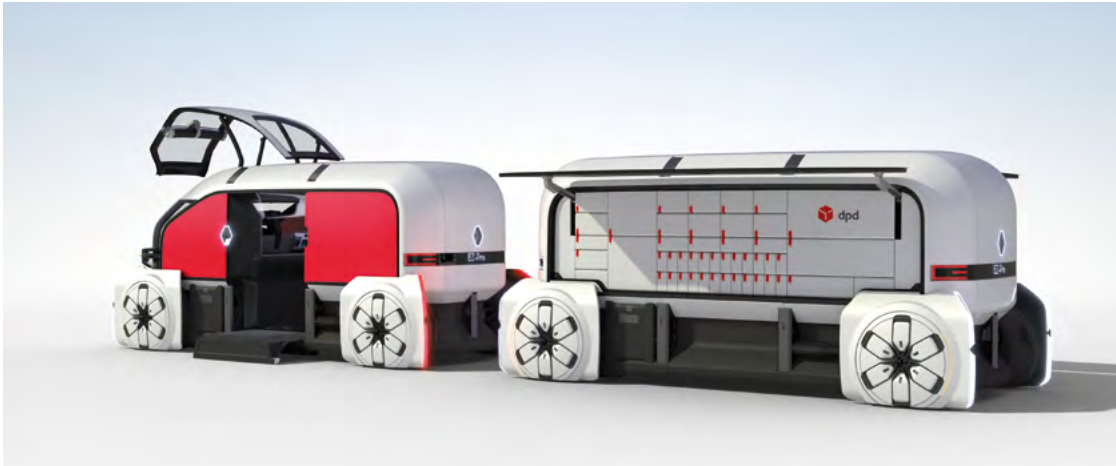
What will transport and logistics look like in future, with parcel numbers projected to double in the next five years? In 2017, e-commerce generated 505 million parcels in France; this number will reach a billion in 2020⁹.

Some trends are already clear. As regards real estate, old depots near cities, often by railways or waterways, are receiving renewed interest. They are being completely re-equipped, re-designed and transformed into multi-modal pooling centres. New mobile and virtual depot models are being considered.

Underground transport is being tested in cities like Northampton (UK) and in Germany, Italy and Belgium. In Switzerland, the Cargo Sous Terrain project involves building 310 miles of tunnels to all the country's major cities for parcels, packages and fresh produce.



⁹ Figure from Fevad (Federation of E-commerce and Distance Selling)



DPDgroup and the Renault Group are designing future last-mile deliveries.

NEW FLEXIBLE HOURS

With the support of local authorities and the advent of quieter vehicles, it is likely that night deliveries will begin; there is already proven demand for fresh and prepared produce.

FROM ROBOTS TO SELF-DRIVING VEHICLES AND DRONES

People's imaginations run wild when it comes to dreaming up what urban last-mile deliveries will look like in future. Suggestions include **guide robots, bikes with trailers, electric delivery tricycles and quadricycles**. Suitable as they are for urban areas and city centres, they are already being tested by La Poste. **Self-driving vehicles** will certainly be a big feature when the technology becomes reliable. By 2025-2030, they will be delivering 80% of parcels. The winning combination for the last mile seems to be mobile lockers on self-driving vehicles managed by a centralised coordination system. These would reduce delivery costs by 40%¹⁰. The Le Groupe La Poste international parcel delivery network, DPDgroup, is looking at how this type of vehicle could be used in partnership with the Renault Group. The use of drones in areas that are sparsely populated or difficult to reach

would also reduce delivery costs and be 100% clean. The world's first commercial use of drones was by DPDgroup in Var.

While advances in technology will mean drones can cope with natural obstacles (wind, rain, altitude, charging ports), legislation remains complex, especially in urban areas.

Finally, **droids** (little land robots) are expected to carry out urban home deliveries in future. They travel relatively slowly (3 to 6 mph) on pavements and also need to be supervised by a central coordination system.

The three key requirements - safety, reliability and cost-effectiveness - will have to be in place for all of these different delivery methods to be successful.



Drone delivery is already underway in Var.

SMART CITIES AND START-UPS

The development of "smart cities" will help to create flow and improve urban logistics and last-mile deliveries. Digital technology will mean city spaces and infrastructure can be better managed to optimise mobility and quality of life. **As it designs the logistics of the future, La Poste is supported by a network of start-ups**. It supports their development in turn and sometimes they join the Group.

La Poste has acquired artificial intelligence specialist **ProbaYes**, which focuses on predictive analysis and works to optimise transport flows. The Group also has a start-up called **Shipup** at one of its incubators which specialises in telling recipients where their parcels are in real time. The Group encourages start-up innovation. In 2018, **K-Ryole**, the first intelligent bike trailer, won the Éclanciers prize.

¹⁰ The future of last mile study by McKinsey (Sept 2016)

TRUE OR FALSE?



“NGVS POLLUTE LESS THAN DIESELS”

TRUE: The natural gas used in natural gas vehicles (NGVs) mainly contains methane and produces CO₂. Compared to diesel vehicles, they emit almost no fine particles (17 times less than a diesel model that meets the European Euro 6 antipollution standard). This means NGVs can help improve public health. Biogas is a natural gas obtained by fermenting organic matter. Unlike natural gas, which is a fossil fuel, it is actually a type of renewable energy. Hence, NGVs are powered by green energy. Biogas refuelling stations remain rare but are expected to become more common in time.



“URBAN CONSOLIDATION BENEFITS THE ENVIRONMENT AND IMPROVES QUALITY OF LIFE”

TRUE: The more a city spreads out, the less efficient the delivery of goods becomes. Yet, almost 80% of the population in France now live in cities, where density has reduced by



“ELECTRIC VANS AREN'T ALL THAT GOOD FOR THE ENVIRONMENT”

FALSE: Electric vans are still rare, but don't emit any CO₂ or fine particles. Their environmental impact depends on the origins of their components (amount of heavy metal, for example), how they were built and can be recycled (especially the batteries) and where the energy they use comes from. Even when not powered by the cleanest European electricity, electric vans have a carbon footprint 25% lower than that of their Euro 6 diesel equivalents over their lifespan (the difference can reach 80% plus in France depending on the energy source). They also considerably reduce noise pollution.



“POOLING CENTRES CAN'T BE PROFITABLE”

FALSE: It is generally thought that to be effective, pooling centres must have a significant share of a city's goods flow. Hence the importance of regional authority regulatory guidance and of partnerships between public authorities and private players. With these things in place, operators should be able to develop new and different services.

more than a third in the past fifty years. Although the “suburbia” model responsible for urban sprawl is valued by the French, it does mean networks, communications channels and transport systems have to be extended. These things come at a cost to the environment and to health. Limiting urban sprawl will be a major future challenge. It will involve better controlling the expansion of cities, towns and villages, and improving city centres. While the latter are more attractive for the young, who can enjoy the leisure opportunities available, and the elderly, who can access services and businesses, they also need to be made more attractive for families. Requisite public policy will give city, town and village centres assets that make localities cleaner and more efficient. The French government and local authorities have various tools to achieve this at their disposal, such as urban planning documentation, fuel taxes and local taxation. Public investment choices are another potential lever.



“DELIVERY IS FREE”

FALSE: Although we are often told delivery is free when we buy products online or via apps, this is not really true. The price is affected by the costs of logistics, storage, transport and delivery driver salaries. All these things have to be paid for. For marketing reasons, the cost of delivery is hidden from consumers, who see free delivery as a key buying criterion (and would be unwilling to cover a separate delivery cost). The true amount is either added to the product price or taken on by the supplier/sender. It is therefore more accurate to talk about delivery being “included” rather than “free”. This cost affects business profitability. Yet, significant investment will be needed in the coming years to support e-commerce market growth and major constraints will be imposed on the industry to avoid creating further problems (emissions, congestion, noise, etc.). Consequently, we can question the current economic model which lays this cost at the door of suppliers.



“COMPETITORS ARE WELL ADVISED TO POOL THEIR LAST-MILE DELIVERY”

TRUE: Current logistics models meet the mass needs of the past. Now, given the environmental impact of more intensive goods movement, it is important to move towards pooled logistics. This is supported by developing technology and shared infrastructure that allows flows to be massed. With this in mind, all players – competitors included – are well advised to cooperate to deliver a form of mobility that is better managed and founded on a local approach that optimises last-mile flow. These new collaborations between competitors are known as “coopetition”. This pooling raises the issue of contact with the end customer.



« LA LIVRAISON NOCTURNE N’EST PAS UNE BONNE IDÉE »

FALSE: Flexible delivery times, including at night, offer a range of advantages: by limiting daytime city congestion, they help traffic flow and reduce the environmental impact of transporting goods. Fewer traffic jams mean less pollution... Night and early morning deliveries are especially suitable for food businesses (restaurants and food retailers), who can access fresh produce this way. Larger vehicles can also be used to deliver at night, which optimises transportation. However, before this delivery method can become widespread, vehicles with new quiet engines are required; drivers need to be trained and equipment adapted (trolleys, forklift trucks, etc.).

GLOSSARY

BREAKING BULK

This is required for changing vehicle or transport method when entering a city and allows for pooling. It is a useful way to optimise city deliveries, but generates significant costs.

A

for... AUTOMATION & AUTONOMOUS

A major logistics revolution in the next 5 to 10 years.

B

for... BIOGAZ

Biogas is a natural gas generated by the anaerobic digestion of organic matter. Unlike natural gas, which is a fossil fuel, biogas is a green fuel used in NGVs.

C

for... DELIVERY CROWDSOURCING

This is where non-professionals are involved in shipping a parcel. This future solution is based on an innovative social model and relies on resource sharing, just like carsharing. Individuals can use their everyday or occasional journeys to help deliver a parcel.

CROSS-DOCKING

Process where goods for delivery are transferred from an arrivals bay to a departure bay.

D

for... DIESEL

In the past, this was the fuel used by delivery vehicles because of its affordability. Diesel engine exhaust emissions contain large amounts of nitrogen oxide and fine particles that damage the respiratory system. They have been classified as carcinogenic by the World Health Organisation. Diesel is heavily taxed in Denmark and Switzerland, and is more expensive than petrol in the USA. In France, diesel has been a tax-efficient fuel up to now, but taxes are currently being adjusted to balance it out with petrol.

I

for... INFORMATION SYSTEM

This is the cornerstone of effective logistics, an industry which now inherently involves multiple players and sites. Information systems ensure complex operations are coherent and well synchronised. They manage physical flows at all stages

of the logistics chain from orders to delivery. They also provide customers with an extra service by allowing operations to be tracked remotely. In future, they will have artificial intelligence and wireless communications features integrated (Internet of Things).

M

for... MICRO-DEPOTS

These small logistics centres have been tested in Paris, Madrid, Nuremberg, Warsaw and London. They are parcel delivery points and departure points for "soft" deliveries: by bike, cargo bike, etc. that stop lorries driving in built-up areas and reduce polluting emissions.

O

for...

OPTIMISING SPACE

Bringing logistics spaces into cities entails a rise in real estate costs.

Urban logistics spaces are therefore particularly tailored to needs.

P

for...

PARTNERSHIP

A desire shared by a local authority and one or more players working in transport and goods delivery brings about new urban logistics solutions. This commitment is expressed in the form of charters, agreements or letters of intent.

POOLING

Activity aimed at reducing the negative external impact of transporting goods (congestion, noise, pollution) by cutting the number of vehicles in an area and maximising their load.

R

for...

RESTRICTED ACCESS

Many local authorities provide access to restricted areas for vehicles that produce low emissions (atmospheric pollutants and greenhouse gases) and are small (tonnage, footprint) in a bid to maintain public health and improve traffic flow (limiting conflicts of use, reducing congestion).

REVERSE LOGISTICS

This service collects recyclable items or materials and product returns from customers and takes them back to the producer, loader or recycling/re-use unit.

U

for...

URBAN LOGISTICS HQ

Urban logistics HQs (HLUs) are located outside city centres, providing a shared depot for different couriers and logistics industry players. Being close to recipients, they are a key element in managing last-mile transport. They provide space for flow pooling, storage, order preparation and dispatching to businesses, shops and private individuals. Urban logistics HQs are an essential tool in logistics resource pooling.

URBY

The network of local logistics sites created by Le Groupe La Poste. Goods are gathered here at the edges of cities so delivery resources can be pooled to avoid partially-loaded lorries going into cities. These sites offer various services, especially to city-centre traders and craftspeople: home delivery for their own customers, management of return-to-sender items, recycling collection, etc.

W

for...

WAVE

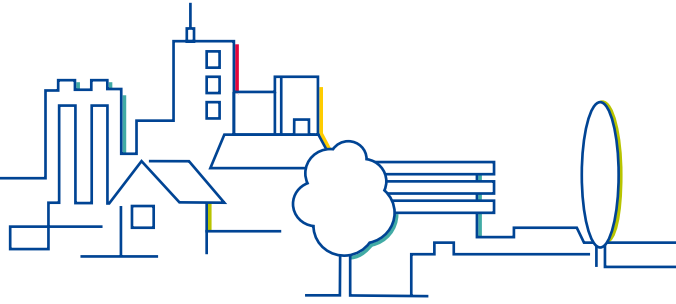
Permanent delivery process whereby rounds follow on from each other to improve profitability and quality of service for customers.

Z

for...

ZERO EMISSIONS

Environmental ideal to aim for, especially when it comes to transport. Zero emissions can be achieved by using any transport method other than those powered by a combustion engine: delivery on foot, by bike or cargo bike, etc.



Thanks

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