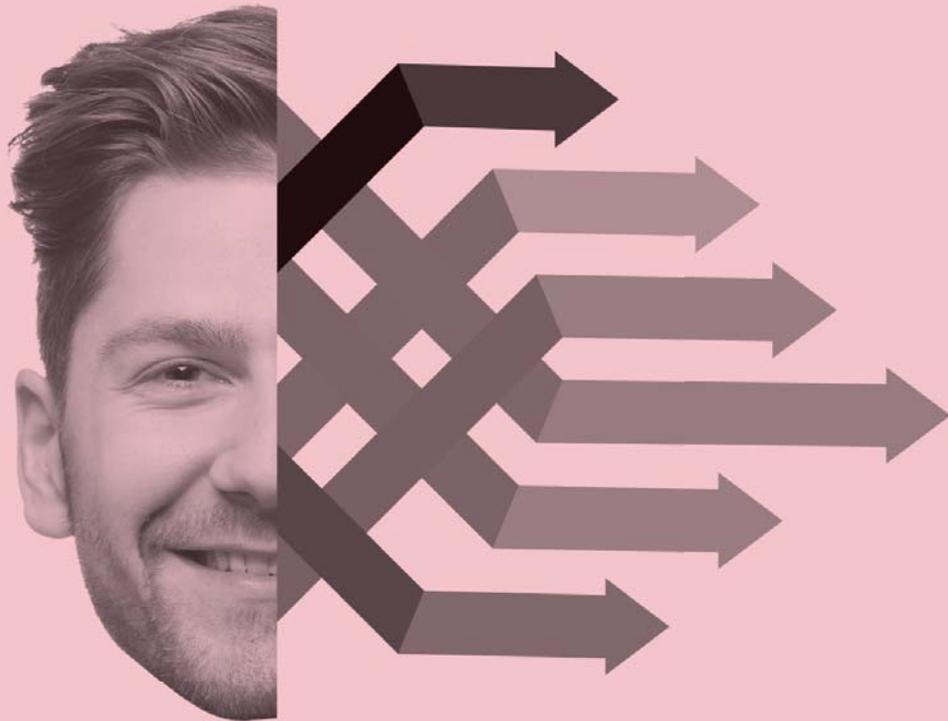


LAST KILOMETRE FREIGHT CASE STUDIES REPORT

FEBRUARY 2015



CITY OF MELBOURNE



A CONNECTED CITY

We manage movement in and around our growing city to help people trade, meet, participate and move about safely and easily, enabling our community to access all the services and opportunities the municipality offers.

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Issue 1 - Last Kilometre Freight

27 February 2015

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INTRODUCTION

Melbourne is growing quickly. This means a busier city with more deliveries to shops, cafes, offices and other places, often on crowded streets and footpaths. In response, the City of Melbourne is taking steps to develop an innovative approach to how we manage freight in the central city.

This Case Studies Report identifies a number of innovative approaches to last kilometre freight and looks to examples of global and local cities and businesses which are exploring innovations to increase the effectiveness, and lower the impact, of last kilometre freight.

These case studies provide us with the opportunity to learn from these experiences by evaluating their benefits, issues and challenges. They also stimulate our thinking about new and better ways to do business and inspire businesses to improve or innovate.

There are several examples of Melbourne businesses leading the way with new and different ways of getting goods into cafes, shops, offices and other destinations.



Delivery vehicle in Bourke Street Mall

CITY OF MELBOURNE CASE STUDIES

Emporium Melbourne

Emporium Melbourne has 225 stores. It offers a range of retail and food experiences in the heart of the central city. The opening of the centre in 2014 signalled a new approach to freight delivery in the central city.

The freight docks at the Emporium have a huge task, servicing and supplying a variety of goods (from artisan bread to high-end designer clothing) to these 225 stores. Emporium receives, on average, 100 deliveries each day. To receive and distribute these deliveries Emporium uses two giant truck lifts which can accommodate six delivery vehicles each. The vehicles drive onto the lift and are lowered two floors from the street level at Caledonian Lane, to the underground loading docks of the Emporium. From here, goods are delivered to individual stores. Drivers have 45 minutes to unload before they must go back up in the truck lift. The Emporium truck lift is the first of its kind in Australia. It was made by STS – Safetech Tieman Solutions, a company located in Bendigo.

Early in the construction phase of Emporium Melbourne, it was apparent that a booking system was required in order to maintain the efficient operation of the loading dock and avoid congestion of the city streets, primarily Caledonian lane, with trucks queuing to enter the loading dock via the truck lifts.

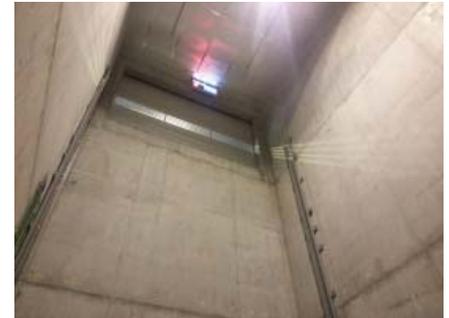
Emporium Melbourne therefore chose to partner with “Bestrane”, industry leaders in Dock Appointment Scheduling. An online booking system ensures all supply chain partners are involved in the process and have visibility into requested, scheduled and rescheduled dock appointments; this solution optimises receiving operations for all shipments to and from a distribution location. Emporium Melbourne also utilises Bestrane’s “MobileDock” application to enable wireless workflow management of dock appointment status.

All freight drivers must book a time to arrive at Emporium and can only access the lift at that booked time. Driver education is a significant part of the Emporium delivery system, as it has

changed the way drivers have made their deliveries by determining the time they will receive access to the truck lift and restricting their delivery time to 45 minutes.

One of the main benefits of the Emporium’s freight system is that the store has saved more than 7000 square metres in floor space that would otherwise have been needed for long ramps inside the building to allow trucks to descend to the loading docks. Because of this efficient use of scarce central city land, Emporium has added a new retail tenant increasing its rent and expanding its retail offer. Another benefit is that drivers know exactly when to arrive at the building and are guaranteed access when they arrive. This means no need to cruise busy city streets adding to traffic congestion while looking for a free loading zone, saving the delivery firms and their customers’ time and money.

The Emporium loading dock also receives the majority of deliveries for Myer Level 4 – Emporium Melbourne and David Jones 310 Bourke Street Store.



Emporium loading dock



Emporium Melbourne

Cargone Couriers

Established in 2010, Cargone Couriers uses cargo bicycles to transport goods around inner Melbourne. This small, owner-operated business has experienced strong growth over the past four years, offering prices and delivery times that compete with those of larger motor vehicle courier companies.

Blane Muntz, the owner of Cargone Couriers, says that it is the door to door service which gives bike couriers an edge - using bicycles allows him and his riders to respond quickly to orders and saves time since there is no need to search for on street parking. On a recent delivery run Mr Muntz picked up a 50 kilogram load of brochures (about vaccinations) from the Town Hall and cycled to the Community Health Centre in Carlton where he was able to wheel his cargo bike inside the building to take the brochures all the way to the shelf where they were to be stored, saving time. Because of the small size and manoeuvrability of his cargo bike, it is able to do the job of a hand trolley as well as a road delivery vehicle. It also eliminates the need to find a car park. Mr Muntz reports that bike couriers are capable of carrying a much wider range of goods than the paper documents people usually expect them to be carrying. His customers include dental clinics, florists and cake stores. One of his bikes is fitted with an insulated box and electronic thermometer that automatically checks the temperature every 10 seconds to ensure cakes are kept at the right temperature for quality and food safety. The thermometer automatically transmits the temperature to computer log which can be checked any time. Mr Muntz also has an agreement with the concierge at the Emporium to run the shopping purchases of tourists back to their hotels so they don't have to carry them around town.

A new client, a national telecommunications firm, uses Cargone Couriers to deliver sim cards to customers in a designated central area within three hours of online purchase. Cargone staff riders carry these sim cards at all times and can quickly drop them off to the necessary address when prompted. Mr Muntz's quickest delivery is 90 seconds. The customer was still

looking at the website where they bought the card when he arrived. The mobility of bike couriers motivated this telecommunications firm to use cargo bikes and their competitive 'under three hour' delivery offer.

Driving through the city to make deliveries can be time consuming and challenging, which makes bicycle couriers an appealing option for the last leg of the journey. Mr Muntz often picks up goods from vans which drive to the edge of the inner city where he collects the goods and transfers them to the bikes for the journey to their final destination. An example of this is Organic Angels, a fruit and vegetable store. Their drivers park near Richmond Train Station and unload boxes bound for the central city into Mr Muntz's cargo bikes.

Though not immune to congestion, bike couriers aren't affected by it in the same way cars, vans and trucks can be. This allows Cargone Couriers to guarantee same day delivery bookings right up until 6 pm, while larger motorised freight companies are often unable to commit to same day delivery after 3:30 pm.

Another benefit of box bike deliveries is that they do not block views in the same way as a larger vehicle can. Views are important in the city. People come to Melbourne to shop and socialise in part because of the attractive buildings and places in the city. Also, retailers, cafes and other buildings put significant effort into window displays or interiors to attract potential customers. Shop frontages also allow interaction to take place between the shop and the street, increasing safety and creating a connection. Blocking views and sight lines undermines this.

Mr Muntz asserts that although bicycles don't consume fuel or produce greenhouse gases, thereby offering an environmentally friendly service which appeals to companies looking to reduce their carbon footprint, the main selling point for his customers is the fast, efficient and personalised service they provide. In future, Mr Muntz hopes to see bicycles taking on a greater role in delivering urban freight and would ideally hope for a consolidation centre - even if just a shipping container in a car park on the periphery of the central city,

where vans could securely drop their goods off for bicycles to deliver to their final destination.



Cargone Couriers delivery bike



Blane Muntz picking up a flower order



Le Petit Gâteau's brownie and passionfruit chocolate gâteau



Head Pastry Chef - Pierrick Boyer

Le Petit Gâteau

With 12 full time pastry chefs and a constant stream of commercial and individual orders to fill, Le Petit Gâteau prides its self on both its quality and efficiency.

Creator and Head Pastry Chef, Pierrick Boyer, says the emphasis is on affordable luxury - they don't compromise on the quality of their products and constantly strive to take a creative and visionary approach to their work. Mr Boyer adds that Le Petit Gâteau places great value on consistency - in their product, their service and their business operations.

Le Petit Gâteau is part of the RACV City Club, and is located on Little Collins Street between Queen and William Streets. Le Petit Gâteau receives its deliveries through the building's loading dock on New Chancery Lane, along with all other freight deliveries to the building.

Le Petit Gâteau uses Cargone Couriers to deliver some of their less fragile cakes by bike. Most other orders are picked up in store by clients. Mr Boyer's experience is that bicycle couriers can make their deliveries in less time than cars can in the central city and has found the couriers to be consistently on time and 'very on the ball'. Mr Boyer's impressive cakes and sweets are created for corporate events, restaurants, and individuals and those to be delivered by Cargone Couriers are transferred into an insulated box installed on the cargo bike. An electronic thermometer is located within the box and set to take the temperature reading every ten seconds - ensuring a consistent and safe environment.

Le Petit Gâteau also uses Cargone Couriers because it reduces the business's carbon footprint and delivers on its commitment to using local produce and working with local businesses. Mr Boyer notes that "[the key to] efficiency is in the whole process. From beginning to end, each part of the process is important".

For Le Petit Gâteau, the day starts with the delivery of ingredients and ends with the delivery of the final product to the customer.



Cargone Couriers riding along Flinders Street

Coles Central loading bay

The Coles Central at the Flinders Street end of Elizabeth Street is constantly filled with people buying things on their way to and from work. With an increasing number of apartments in the surrounding streets the manager, Josh Beshara, anticipates it will only get busier so more and more goods need to be delivered to keep the shelves stocked. However, the central location of the store and the narrow laneway at its rear limits how deliveries can be received.

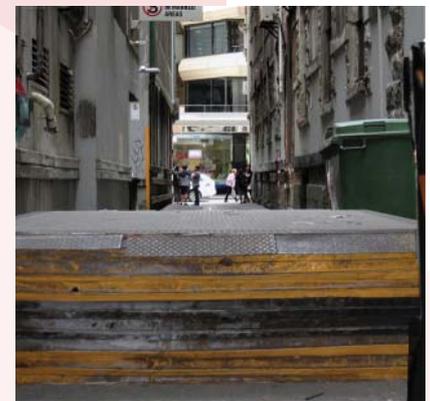
To work around these spatial challenges, Coles uses smaller vehicles to service its Elizabeth Street store and has installed a “leveller” in Rothsay Lane behind its off-street loading bay at the rear of the shop. The truck reverses into the lane and aligns its front end with a line marked on the pavement. The leveller, a 3 metre by 3 metre platform, rises out of the ground to the level of the truck tray. The truck doors are opened and metal flaps attached to the leveller platform unfold to cross over onto the truck – allowing goods to be wheeled out onto the surface of the leveller. The leveller is then lowered back down to ground level where the goods can be wheeled off and into the store. This makes the delivery process easier and safer for all those involved.

This Coles Central receives deliveries about seven or eight times a day and the leveller is used multiple times per delivery – about five or six times per truck. Most deliveries, about 90 per cent, are received at night - this is more convenient as the store is so busy during all hours of the day.

Mr Beshara says that as the city becomes busier with more space given over to people walking, his store will benefit due to greater trade. However, he also comments that consideration of freight is needed; how will the changes impact the ability of stores to receive deliveries?



Coles Central loading bay and receiving bay entrance



Images of Coles Central loading bay as it rises to truck level

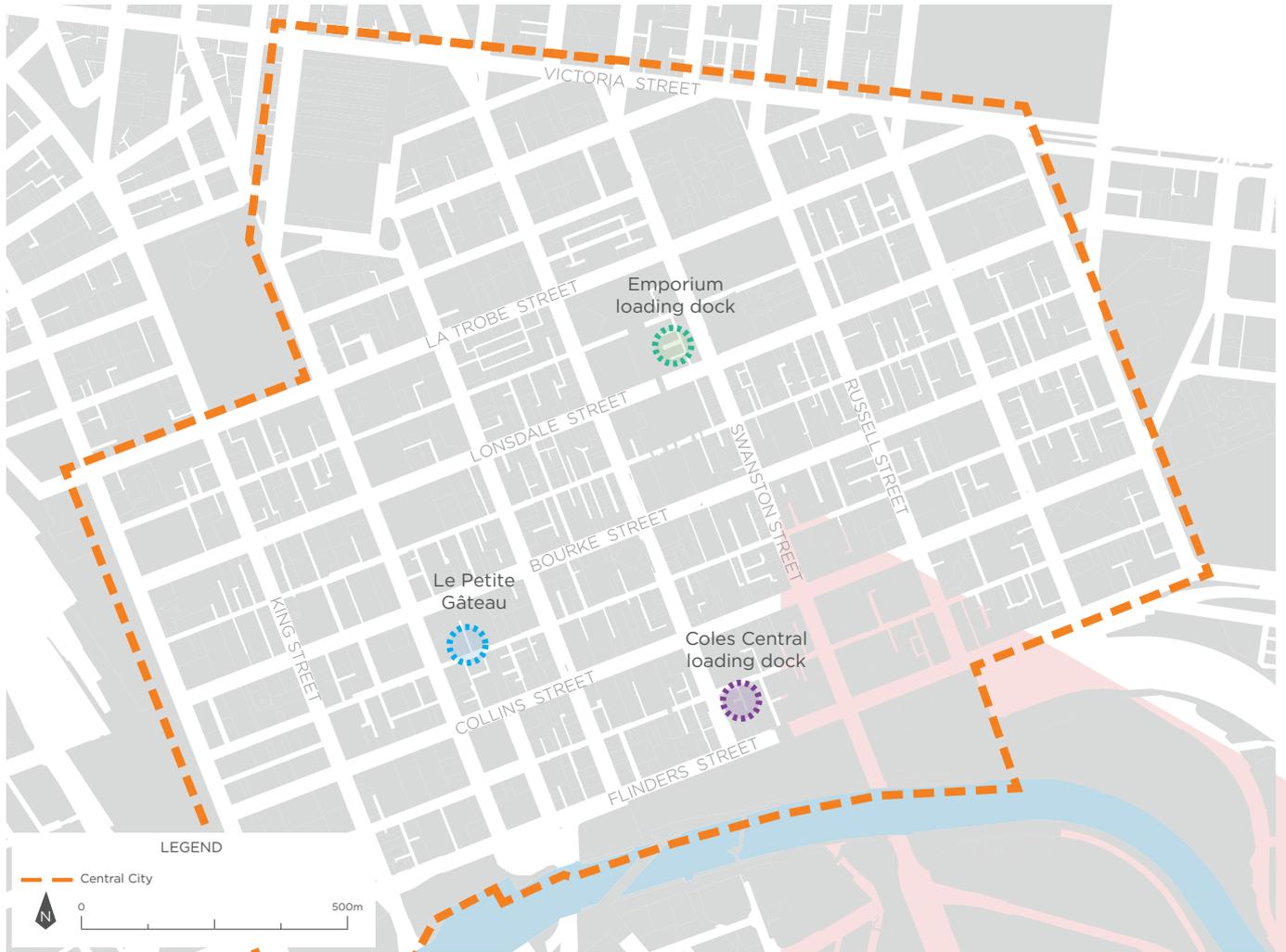


Figure 1 - Location of City of Melbourne case studies

INTERNATIONAL APPROACH TO FREIGHT INNOVATION

Urban distribution centres

An urban distribution centre is a centralised site for larger freight deliveries. Upon arrival goods are redistributed to smaller scale delivery vehicles. Ideally, this leads to consolidated and more efficient deliveries with smaller vehicles.

Benefits

- Reduced congestion due to fewer large scale vehicles needing to enter the central city or distribution area.
- Potentially less pollution due to the consolidation of deliveries (leading to fewer under-capacity vehicles on the road).
- Less noise due to fewer trucks circulating in the central city.
- Potential to use large vehicles to make drop offs to the distribution centre at night lowering transport costs for delivery firms.
- Potential to support bike/electric cargo (with further benefits of noise, congestion and pollution reductions).

Issues and challenges

- Financial viability - how is the land for the distribution centre acquired (initial and sustained investment).
- Time and cost of the extra handling stage.
- Customer relations - businesses may need to change suppliers - affecting longstanding relationships that have been formed (as an example of this refer to the Gothenburg case study).
- Business resistance - garnering support and being able to convince businesses to adopt this model.
- Publicly operated distribution centres have sometimes been poorly received in the past from a commercial perspective - low throughput volumes, ongoing public funding needed and poor service levels.
- Benefits to carriers may be limited if they have already consolidated deliveries within the company.

Additional time and money costs may not be viable.

Examples

Interporto Padova - Padova, Italy

- <http://www.interportopd.it/en/>
- http://www.bestfact.net/wp-content/uploads/2013/10/BESTFACT_Brussels_12_12_07_Cityporto.pdf

Binnenstadservice - Nijmegen, Netherlands

- <http://www.sciencedirect.com/science/article/pii/S1877042810010645>

Gothenburg, Sweden

- http://www.bestfact.net/wp-content/uploads/2014/02/CL1_QuickInfo_Gothenburg-21jan2014.pdf



Binnenstadservice - Nijmegen, Netherlands

Cityporto

Padova, Italy

Cityporto is an urban logistic scheme for the consolidation and distribution of 'last kilometre' freight in central Padova (Padua), Italy, near Venice. Operating since 2004, Cityporto gives member freight operators easier access to the city centre; avoiding the restricted delivery times that apply to non-members of the scheme.

Freight operators deliver their goods to a centre at the edge of Padova where they are consolidated into low-impact (low emission) vehicles that cover the 'last kilometre' of the trip. The aim of the system is to reduce the number of trucks entering the central city by consolidating their loads into Cityporto delivery vehicles. These vehicles are loaded to full capacity, meaning fewer trucks are needed. Reducing air pollution is also a target of the consolidation centre scheme and this is achieved through the use of low emission vehicles.

A range of incentives were used to encourage freight companies' involvement in Cityporto. The 10 Cityporto vehicles in operation are permitted to use reserved public transport lanes, enter the city at any time of the day and have dedicated loading bays for their operations. The fleet is a mixture of methane and electric vehicles and in 2012 there were 55 operators using the 10 Cityporto Padova vehicles.



Cityporto consolidation centre



Cityporto truck in central Padova

Restricted delivery times

Restricted delivery times limit delivery drop off times to given hours of the day; usually late night or early morning. It is intended to reduce traffic congestion during the day and make the most of underused roads at night. Night time delivery vehicles should use low-noise technology.

Benefits

- Reduced congestion.
- Faster and more efficient delivery times for freight companies.
- Low cost and few infrastructural changes needed – potential to trial program rather than establish as permanent.
- Night delivery vehicles should be 'low noise vehicles' (new technology available).
- Can consolidate larger deliveries at night so that fewer smaller trucks are needed during the day.

Issues and challenges

- Receiving goods – items left on the street or businesses need to be open or able to receive goods after hours (staffing cost/inconvenience).
- Inconvenience to freight companies – additional cost of late night staffing.
- Increased traffic at night a risk to vulnerable late-night visitors.
- Resistance from stakeholders.
- Noise disruptions and complaints.

Examples

London Olympics freight strategy, UK

- <http://www.tfl.gov.uk/cdn/static/cms/documents/olympic-legacy-freight-report.pdf>

Glasgow Commonwealth Games, UK

- <http://www.glasgow.gov.uk/CHttpHandler.ashx?id=19528&p=0>

Barcelona, Spain

- <http://www.eltis.org/discover/case-studies/silent-inner-city-overnight-deliveries-barcelona-spain>

New York Off-hour Delivery Program, USA

- <http://www.nyc.gov/html/dot/html/motorist/offhoursdelivery.shtml>
- <http://news.rpi.edu/content/2013/09/16/hour-truck-deliveries-manhattan-reduce-traffic-empower-business-owners>



Signage - London Olympics

Off-hour deliveries

New York City, USA

Trialled in Manhattan in 2010 with a research team from Rensselaer Polytechnic Institute (RPI), the Restricted Delivery Times pilot worked with eight delivery companies and 25 receivers to make deliveries between 7 pm and 6 am. The intent of the pilot was to increase efficiency (reduce delivery times) and lower traffic congestion.

Receivers needed incentives to participate as there were additional costs associated with either after-hours staff (to receive deliveries) or building a secure delivery area for carriers to leave stock. RPI research estimated that the costs saved from reduced congestion outweighed the cost of receiver incentives.

Positive feedback was received from delivery companies and their drivers. Conducting after-hours deliveries was evaluated to be about 30 per cent cheaper than delivery in regular hours (Holguin-Veras, J. et al, 2010).

The program also contributed to reduced traffic congestion and greenhouse gas emissions. Noise emissions were initially a major concern for shifting to off-hour deliveries due to their potential impact on sleeping residents. The trial mitigated the noise effects of these deliveries through improved technologies, behaviour change and the use of electric vehicles. Companies that joined the program participated in a webinar on noise reduction.

New York City adopted after-hours deliveries as part of its 2011 sustainability strategy. The New York Department of Transportation launched DeliverEASE in 2011 which enlisted 150 businesses to receive freight deliveries between 10 pm and 6 am



Late night deliveries in New York City

Drop off points

Drop off points refer to secure storages boxes or lockers to which freight companies make deliveries. The goods are then collected by the receiver at a desired time. This is particularly useful in aiding night time deliveries. Lockers may be refrigerated to better accommodate perishable goods.

Benefits

- Limits parking congestion by reducing the number of stops delivery vehicles have to make to complete their delivery runs.
- Potentially less disruptive to business day – staff are not required to be on site to receive a delivery. This lends greater flexibility to drivers.
- Prevents goods being left on the street – protect against the damage/spoilage of goods and tripping hazards on footpath.
- Useful for residential freight – delivery of online orders.

Issues and challenges

- Logistics of who has access at delivery and receiving end.
- Scale, location and obtrusiveness of storage lockers.
- Costs – who pays for it?

Examples

Amazon Locker

- https://www.amazon.com/gp/feature.html/ref=locker_hp_fd?docId=1000841451
- http://www.amazon.com/gp/help/customer/display.html/ref=hp_left_v4_sib/181-3342181-7539928?ie=UTF8&nodeId=201530900

TNT mobile depot

- <http://www.tnt.com/corporate/en/data/press/2013/05/tnt-express-introduces-mobile-depot-in-Brussels.html>

BentoBox

- <http://www.city-log.eu/lyon/bentobox>
- <http://www.youtube.com/watch?v=O1Y3urNNWyk>

Freight bus

- <http://youtu.be/9Kh1C2Q6U-w>



Amazon Locker



BentoBox

Lyon, France

The BentoBox system was trialled in Lyon for six weeks in 2012 as a joint initiative of TNT Express and Citylog - a European freight research body.

Compartmentalised trolleys were filled with goods and loaded onto a delivery truck. The truck then delivered these trolleys to a centralised location where compartments - or the whole trolley - could be picked up by the recipient at their leisure.



This process is intended to limit the number of trucks operating in the central city and reduce congestion as well as offering increased flexibility for recipients who were able to collect their packages when it was most convenient for them. Because customers do not need to be present when the delivery is made, drivers can avoid peak traffic hours and make their deliveries at a time that is most convenient for them.

The results of the trial indicated that this system was successful when applied to smaller shops, but much less suited to medium and large stores which required large volumes of stock. From the driver's perspective the Bento Box saved time delivering to drop off locations rather than individual stores. However, some stores felt that having to go and collect the stock was an inconvenience to them.



BentoBox

TNT mobile depot

Brussels, Belgium

The TNT mobile depot was a privately funded trial between June and August 2013 intended to increase the efficiency of its parcel deliveries to customers in the central city and contribute to a better city environment through reduced noise and emissions. The mobile depot was a large truck which contained a loading bay and small office for administrative duties. This mobile depot transported deliveries from the airport or from another large freight terminal and parked within close proximity to the targeted delivery district. Electric tricycles and electric vehicles then collected stock from the parked depot and made their deliveries.

The mobile depot is appealing as its location is flexible and the need for an expensive permanent inner city distribution centre is avoided. The depot was reported to have decreased truck kilometres, reduced costs per stop, reduced Co2 emissions and at a minimum, maintained delivery times and punctuality. However, operating costs during the trial were twice as expensive as the standard van method of delivery.



TNT mobile depot

Low emissions zones

Low emissions zones are areas of the city that prohibit or limit access to high emission vehicles. More than 100 cities throughout Europe have established low-emission zones in a bid to improve urban air quality.

Benefits

- Reduced emissions and improved air quality.

Issues and challenges:

- Potential concern over limiting vehicle access to the city.
- Transfer of high polluting vehicles to areas surrounding the low emissions zones.

Examples

London, UK

- <https://www.tfl.gov.uk/modes/driving/low-emission-zone>

Copenhagen, Denmark

- http://www.miljozone.dk/vognmand_english.php

Berlin, Germany

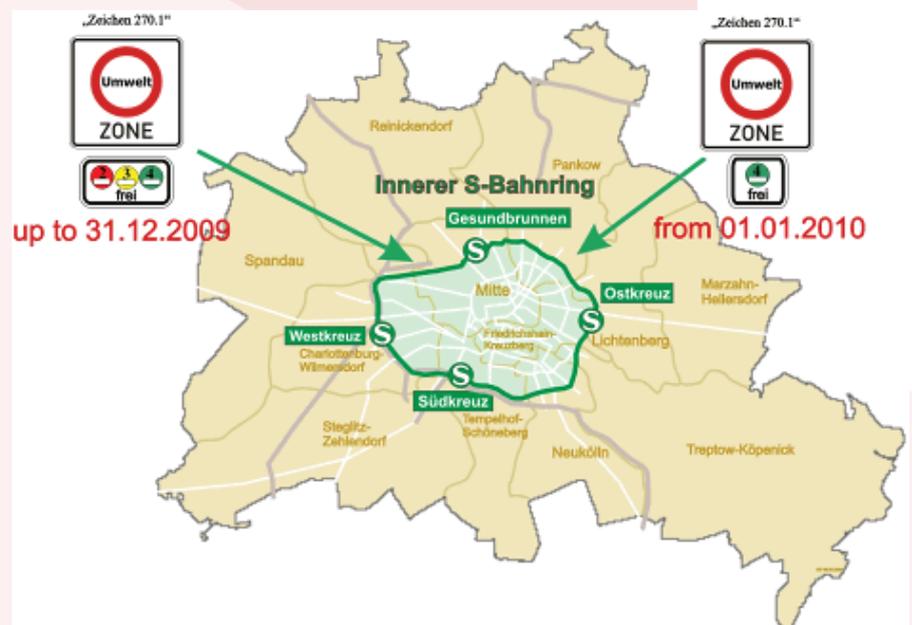
- http://www.stadtentwicklung.berlin.de/umwelt/luftqualitaet/umweltzone/index_en.shtml

Umweltzone - environmental zone

Berlin, Germany

Berlin's environmental zone came into effect in January 2010 and limits entry into central Berlin exclusively to low-emission vehicles in an effort to reduce air pollution, particularly oxides of nitrogen and particulates. This zoning applies 24 hours a day, 365 days a year.

Low-emission vehicles are identified by a green sticker displayed on the front windscreen. All vehicles must register with, and be certified by, the local vehicle registration authority in order to qualify as a low-emissions vehicle and receive the sticker. The penalty for parking or driving a vehicle without a valid sticker is 80 € (about \$117 Australian dollars).



Map of the Umweltzone (environmental zone) in Berlin

Technological advance

This broadly refers to the use of technology to aid low impact deliveries; including the use of electric and hybrid vehicles and the use of technological information systems to provide information. For example, the creation of an app that tracks the availability of loading bay spaces in city or matches deliveries with available drivers.

Benefits

Electric/hybrid vehicles:

- Lowered emissions.
- Reduced noise pollution.

Information systems:

- Increased efficiency and reduced pollution as less time is wasted looking for car spaces.
- Reduced number of service vehicles circulating the streets, looking for parking.
- Ability to coordinate deliveries.
- Ability to coordinate drivers and appropriately match deliveries.

Issues and challenges

- Expensive to change fleets over to electric/hybrid.
- App establishment and running fees, responsibility of keeping the app up to date etc.

Examples

Australia Post

- <http://auspost.com.au/about-us/transport-program.html>
- <http://auspost.com.au/about-us/renault-electric-van.html>

Streetline - A parking app that could be replicated for loading bays

- <http://www.streetline.com/>

Transfix, USA

- <http://transfix.io/>

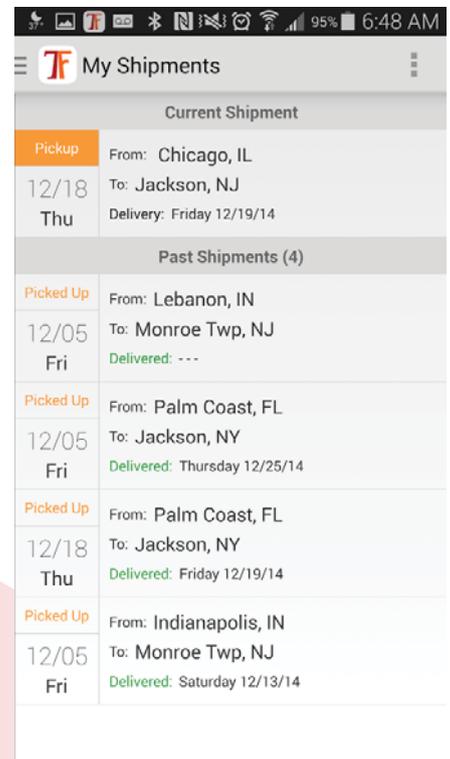
Transfix

Various cities, USA

Empty trucks which travel out of their way to collect or deliver goods accumulate 'wasted' kilometres and contribute to road congestion and pollution - in the U.S. some 20 billion miles per year are driven by empty trucks (Gannes, 2014). Transfix is a start-up company which offers a smartphone app designed to reduce the amount of wasted kilometres and improve overall efficiency.

The Transfix app matches shipments with nearby available drivers, registers a digital shipment contact, and tracks driver progress. The app also navigates the driver to the destination where they then take a photo and upload it as proof of the delivery. Once the delivery is confirmed the app triggers payment to the driver - to be received within 24 hours.

For both long-haul and last kilometre freight journeys, Transfix is reducing fuel consumption, pollution and truck congestion from wasted kilometres. By allowing the customer to track their order in real time, the app also offers peace of mind and saves time wasted on trying to work out where a shipment is and how much longer it will take to reach its destination. This process cuts down on inefficiencies with arranging deliveries, collecting them, confirming their arrival and receiving payment - making life easier for all parties involved.



The screenshot shows the 'My Shipments' screen of the Transfix app. It features a header with the Transfix logo and the title 'My Shipments'. Below the header, there are two main sections: 'Current Shipment' and 'Past Shipments (4)'. The 'Current Shipment' section shows a pickup on 12/18 Thu from Chicago, IL, to Jackson, NJ, with a delivery date of Friday 12/19/14. The 'Past Shipments' section lists four previous shipments, each with a pickup date, location, destination, and delivery date. The app interface is clean and uses a color palette of orange, grey, and white.

Current Shipment	
Pickup	From: Chicago, IL
12/18 Thu	To: Jackson, NJ Delivery: Friday 12/19/14

Past Shipments (4)	
Picked Up	From: Lebanon, IN
12/05 Fri	To: Monroe Twp, NJ Delivered: ---
Picked Up	From: Palm Coast, FL
12/05 Fri	To: Jackson, NY Delivered: Thursday 12/25/14
Picked Up	From: Palm Coast, FL
12/18 Thu	To: Jackson, NY Delivered: Friday 12/19/14
Picked Up	From: Indianapolis, IN
12/05 Fri	To: Monroe Twp, NJ Delivered: Saturday 12/13/14

Screenshot of Transfix app

BIBLIOGRAPHY

Amazon Locker (Image): <http://i.huffpost.com/gen/1477251/thumbs/o-AMAZON-LOCKER-facebook.jpg>

BentoBox (Image): <http://cms.ukintpress.com/UserFiles/Image/TTT%20images/2012/08%20august/09.08.12/City-Log-loading.jpg>

BentoBox (Image): http://www.wk-transport-logistique.fr/actualites/upload/transport/transport_actu52681_photo.jpg

BentoBox (Image): http://www.city-log.eu/sites/default/files/images/lyon/TNT1_134.jpg

Berlin Senate Department for Urban Development and the Environment (n.d). The Environmental Zone. Senate Department for Urban Development and the Environment, retrieved from Senate Department for Urban Development and the Environment

Bestfact. (2014). Gothenburg city logistics initiatives. Bestfact, retrieved from http://www.bestfact.net/wp-content/uploads/2014/02/CL1_QuickInfo_Gothenburg-21jan2014.pdf

Binnenstadservice - Nijmegen, Netherlands (Image): http://www.doen.nl/upload_mm/c/0/d/245_binnenstadservice_624x354.jpg

Cargone Couriers: <http://cargonecouriers.com.au/>

Cityporto consolidation centre (image): <http://www.interportopd.it/en/>

Cityporto truck in central Padova (Image): <http://www.interportopd.it/en/>

CityLog (n.d.), CityLog Lyon - Bentobox, CityLog, retrieved from <http://www.city-log.eu/lyon/bentobox>

Emporium Melbourne (Image): <http://www.thatmelbourne.com.au/Shopping/RetailCentres/ShoppingCentres/PublishingImages/19073Large.jpg>

Emporium Melbourne: www.emporiummelbourne.com.au

Gannes, L. (2015, January 20). Transfix brings the Uber model to the \$800 billion trucking industry. Recode, retrieved from <http://recode.net/2015/01/20/transfix-brings-the-uber-model-to-the-800-billion-trucking-industry/>

Holguin-Veras, J. et al (2010). Integrative Freight Demand Management in the New York City Metropolitan Area. Available: <https://www.tfl.gov.uk/cdn/static/cms/documents/nyc-dot-off-hours-deliveries-final-project-report.pdf>

Late night deliveries in New York City (Image): http://news.rpi.edu/sites/default/files/styles/large/public/2013-0917-offhours_0.jpeg?itok=SEp2DVk6

Le Petit Gateau: <http://www.lepetitgateau.com.au/>

Map of the Umweltzone (environmental zone) in Berlin (Image): <http://urbanaccessregulations.eu/countries-mainmenu-147/germany-mainmenu-61/berlin>

Rensselaer (2013). Off-hour truck deliveries in Manhattan reduce traffic, empower business owners (2013, September 16). Retrieved from <http://news.rpi.edu/content/2013/09/16/hour-truck-deliveries-manhattan-reduce-traffic-empower-business-owners>

Safetech Tieman Solutions: <http://www.safetehtieman.com.au/> (Emporium truck lift)

Screenshot of Transfix app (Image): <https://play.google.com/store/apps/details?id=io.app.transfix&hl=en>

Signage - London Olympics (Image): http://news.bbcimg.co.uk/media/images/57844000/jpg/_57844722_ornsign.jpg

Solomonow, S & Gastel, S. (2012, July 1). NYC DOT Pilot Program finds economic savings, efficiencies for truck deliveries made during off-hours. New York City Department of Transport, retrieved from http://www.nyc.gov/html/dot/html/pr2010/pr10_028.shtml

Straightsol (2014). Project results booklet. Straightsol, retrieved from <https://drive.google.com/file/d/0ByCtQR4yIfYDY2FMRjVINKVRTzQ/edit?pli=1>

TNT (2013, May 29) TNT Express introduces mobile depot in Brussels, TNT, retrieved from <http://www.tnt.com/corporate/en/data/press/2013/05/tnt-express-introduces-mobile-depot-in-Brussels.html>

TNT mobile depot (Image): <https://tntexpressturkiye.files.wordpress.com/2013/08/1.jpg>



How to contact us

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