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Reporting of project symposia, workshops, meetings and other events

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Author(s)	Fraser McLeod (SOTON)
Co-author(s)	
WP Leader	SOTON
Internal Reviewer	All research partners

Project Manager	Andrea Arcelli (INEA)

Citylab consortium by Living Lab			
Living lab	**Municipal partner(s)**	**Industry partner(s)**	**Research partner(s)**
Brussels	Brussels Mobility	Procter & Gamble Services	Vrije Universiteit Brussel
London	Transport for London	TNT Gnewt Cargo	University of Westminster University of Gothenburg
Oslo	Oslo kommune	Steen & Strøm	TOI
Paris	Mairie de Paris		IFSTTAR DLR
Rotterdam	Gemeente Rotterdam	PostNL	TNO
Rome	Roma Capitale	Poste Italiane MeWare SRL	Università degli studi Roma Tre
Southampton	Southampton City Council	Meachers Global Logistics	University of Southampton
Networking and outreach partner			
POLIS			

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Executive summary

This deliverable provides in depth reports of events organised by the Citylab project, including detailed independent feedback from the project's advisory panel, the Living Lab Advisory Group. The events comprised three project symposia (large-scale events) and five local workshops. In total these 8 events were attended by around 600 people (average = 75), representing over 300 different organisations from a range of different sectors, with an approximate breakdown by participant type of freight industry (~20%), local, regional or national government agencies (~18%, of which 5% Citylab follower/transfer cities), research community (~27%), consultants (~6%), Citylab advisers (~6%) and Citylab partners (~23%).

Project symposia

- Innovative Urban Freight Management Systems in Paris, 26 May 2016, Paris
- Innovative Solutions for Urban Freight Transport and Environment in the Circular Economy Era, 20 October 2017, Rome
- CIVITAS Urban Freight Conference, 23-24 April 2018, Brussels

Local workshops

- Making freight consolidation centres work - Experiences from Southampton', 27 January 2017, Southampton
- Growth of Electric Freight and Consolidation in Urban Logistics, 12 May 2017, London
- Logistics strategies for shopping centres - how to improve the efficiency of delivery and service vehicle activity, 7 June 2017, Malmö
- City deliveries using micro-hubs and innovative freight bikes, 8 March 2018, Amsterdam
- Sharing Economy Logistics: Access over Ownership, 28 March 2018, Brussels

In addition, Citylab partners have been highly active in co-organising or participating in other events, including 3 CIVITAS Forums and around 160 conferences, workshops, seminars or webinars.

1 Introduction

This deliverable provides in depth reports of events organised by the Citylab project, including some detailed independent feedback from Living Lab Advisory Group (LLAG) members in attendance. It is structured by type of event (Section 2: Project symposia; Section 3: Local workshops; Section 4: Other meetings and events) with events within each section covered in chronological order. Where an event was a combined project symposium and local workshop it is covered in the former section. It excludes dedicated meetings and workshops associated with WP6 activities, such as meetings with Transfer Cities and Followers and MAMCA workshops, as these are reported in separate deliverables:

- D5.4 - Sustainability analysis of the CITYLAB solutions (incorporating local stakeholder (MAMCA) workshops)
- D6.1 - Report on living-lab transferability activities
- D6.3 - Report on transferability to non-Citylab cities
- D7.3 - Dissemination to follower cities and regions
- D7.4 - Business-targeted dissemination

Edited versions of the reports in this deliverable were made publicly available soon after each event from the project website (http://www.citylab-project.eu/workshop_reports.php) and also included in project newsletters.

2 Project symposia

The Citylab project has organised three large-scale events ('project symposia'):

- 'Innovative Urban Freight Management Systems in Paris', 26 May 2016, Paris
- 'Innovative Solutions for Urban Freight Transport and Environment in the Circular Economy Era', 20 October 2017, Rome
- 'CIVITAS Urban Freight Conference', 23-24 April 2018, Brussels

The first two events included both a focus on local implementation actions, to cover the needs of a 'local workshop', as well as consideration of broader urban freight transport issues to widen the scope and attract a larger audience.

2.1 Paris, 26 May 2016, Innovative urban freight management systems in Paris

This combined Citylab regional symposium and local workshop was organised in association with the SUCCESS project and attracted 89 people from city authorities (29 people, of which 16 were Citylab followers), industry (13), consultants (5), research organisations (7), Citylab Living Lab Advisory Group (6) and 29 others representing the two projects hosting the event (Appendix A - Table 1). The event was reported, in full, soon after the event in:

- Newsletter #2 - http://www.Citylab-project.eu/newsletters/Citylab_newsletter2.pdf
- Presentations - http://www.Citylab-project.eu/presentations.php#Paris.

Presentations were made by:

Mr. Jean Louis Missika (Deputy Mayor for Urban Planning in the City of Paris) – who claimed Paris to be one of the first cities in the world to have developed a clear strategy on logistics land use and logistics urban planning. The zoning ordinance of 2006 identified areas for future logistics development, out of which the Chapelle International project was born. Innovation in sustainable city logistics and logistics start-ups is a key city strategy. The first logistics charter

was signed by more than 90 partners and the second charter has also had a good response from companies. The 'no diesel' objective has strong political will and the mayor was convinced that a technical solution will be feasible and put in place before 2025.

Jardar Andersen (TOI) and ***David Evaristo*** (LIST) introduced the Citylab and SUCCESS projects, respectively, and ***Hervé Levifve*** (City of Paris and a Citylab LLAG member) presented sustainable urban logistics and planning in Paris. ***Hervé Levifve***, ***Elisabeth Charrier*** (National Federation of Road Transport) and ***Christophe Ripert*** (Sogaris) took part in a panel debate led by Citylab partner ***Laetitia Dablanc*** (IFSTTAR). In the debate it was stated that the Charter for Sustainable Logistics of 2013 is the foundation for freight consultation in Paris and it's considered to be quite cooperative, given that stakeholders could hold very different and potentially confrontational attitudes on issues such as the impending plan to prohibit access for older more polluting vehicles. Freight operators cooperate well with the city and other public agencies through GATMARIF, a carriers' business group formed in 1970, and the sharing of information has been educational on all sides. Some interesting viewpoints from the speakers included:

Elisabeth Charrier (FNTR): We cannot immediately discard a century of diesel-based technology; however, there have been no great protests about the older vehicle ban as the industry is prepared for it. A move towards increased use of motorbikes and cycles would be socially regressive, in my view, given the vulnerability to accidents and as cycling all day is very physically demanding. Major supply chains (e.g. food) won't go intermodal just for the sake of it and they won't use consolidation centres; companies need some inducements (e.g. promotion or subsidy) to 'play the game'.

Christophe Ripert (SOGARIS): The image of the city is at stake and careful negotiations for new urban developments are needed. The urban logistics market is maturing and growing – we receive increasing demand for estate and it can be difficult for us to find suitable places to meet our customers' needs. The zoning regulations have helped us install the many small urban distribution centres we are providing for our customers in and around Paris.

Hervé Levifve (City of Paris): While we don't actively advertise the Charter, it has become well known and many companies are interested to join. We need consistent rules about what constitutes a 'clean vehicle' and rules that can be controlled well. Most of Paris is long-established and won't change radically any time soon; we need to consider a wider area (e.g. Greater Paris) and a zoning plan for that within 15 years, say, could be an aim.

Michael Browne (University of Gothenburg) led a session on ***CO_2 reductions from a range of initiatives*** in which he presented his thoughts on what can be learnt from previous urban freight initiatives and invited debate from the audience. His first point was that too many projects want to invent a new evaluation framework and we should settle on a more consistent approach. With this in mind, he highlighted the work done in the US, which includes a 'freight initiative selector', a tool designed to help municipalities decide what types of initiative might be suitable for their cities (for details, see report at:

http://onlinepubs.trb.org/onlinepubs/ncfrp/ncfrp_rpt_033.pdf

Key points that were raised in the presentation and discussions included:

- We need to focus on generators of transport and encourage 'smart procurement' - procurement teams should understand that there is no such thing as free delivery.

- Cities should aim to standardise their low emission zone regulations as otherwise fleet operators will have problems meeting them.
- The freight industry prefers to have targets rather than instructions.
- Perhaps cities (with some brave politicians) should adopt more radical solutions – most are tinkering at the edges with little impact.
- Night-time deliveries really need to be unattended to work. Cities may consider some funding for security systems to support such activity.
- Many technologies offer innovative solutions but with some negative externalities. The difficulty is to convince users and politicians not to take the easy way and not to return to former solutions.

Three site visits ran simultaneously:

Chapelle International – Logistics hotel

Undergoing construction since September 2015, it is due to be completed by September 2017. The project is led by Sogaris, a public-private corporation involved in designing, developing, and managing logistics facilities. The building is 45 000m^2, 390m long and 57m wide. It will house an urban rail terminal and a goods delivery centre and a range of other functions such as a data centre, offices, restaurants and City of Paris community facilities such as sports grounds and allotments. It has an exceptional location in the 18th district of Paris, and the railway terminal will be branched with the north rail network. There will be two urban rail shuttles per day to be operated in cooperation with Eurorail and XPO Logistics.

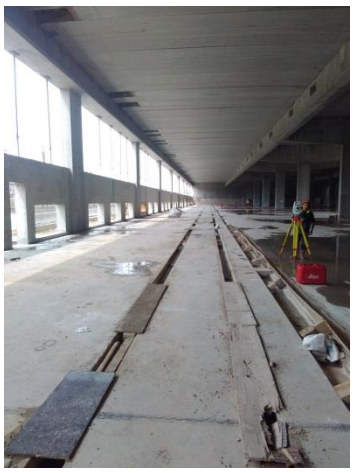

Figure 1. Rail terminal construction at Chapelle.

A key factor of the project is the urban integration of this type of logistics facility in terms of architectural quality, the treatment of noise, the movement of vehicles and access for pedestrians. The economic viability of the project was a challenge. It was made possible thanks to the sharing of the cost of land (the zoning ordinance was adapted locally). The building has been adapted to house the different logistics operators with space being sold to them. The Chapelle International logistics hotel was made possible thanks to the work in the two Charters (2006 and 2013) which built trust between stakeholders. Without this, no logistics hotel would have been possible. Also, people matter: when a politician gets truly involved, surrounded by a good team, and for a sufficiently long period of time, projects such as Chapelle can be achieved.

Beaugrenelle – Urban logistics terminal

The urban logistics terminal at Beaugrenelle (just south of the Eiffel tower) has been in operation by Chronopost since April 2013. It is located in a two-level car park underneath a hotel complex. Eleven members of staff work in the depot alongside 50 drivers, most of whom are self-employed or contractors.

Figure 2. Beaugrenelle urban logistics terminal.

The delivery area covers the 7th, 14th and 15th arrondisements of Paris serving a population of around 200,000. The implementation was not easy due to the cost of being in such a dense and central area of Paris with significant investments needed to upgrade to latest technical and safety standards. Current operations are considered to be smooth and volumes are increasing, partly due to increasing e-commerce. The terminal handles the highest share of home deliveries over all France for Chronopost.

Deliveries to the depot are handled by rigid vehicles and five of them visit the depot between 5am and 7am. A vehicle fleet of 50 vans undertakes the final deliveries most of these (44) using diesel fuel. Only six electric vehicles are being used, the main reason being their limited carrying capacity. Although larger electric vehicles exist they are too expensive. Another issue is that vans need to stay in the terminal for overnight charging which means that drivers cannot use them to go back home anymore. So Chronopost will turn to CNG vehicles in the near future. The nearest gas station is some 4km away but gas is the preferred fuel for the city council and so more and more gas filling points are being installed at local fuel filling stations.

The depot has reduced the environmental impacts on the surrounding area and has also allowed local people to call in and collect parcels. The depot has allowed the vans to collect their parcels from this central point and so reduces the stress for the van drivers as they are straight onto their delivery routes just outside the depot gates.

L'Îlot Fontenoy-Ségur (SUCCESS project)

The visit focused on the logistics activities taking place at the Fontenoy-Ségur complex which has been under construction since March 2015. The Fontenoy part (10,000m²) is due to be delivered very soon (June 2016) while the Ségur part (45,000m²) is due in August 2017. The initially separate buildings have been physically linked to create a single business-oriented complex with 2,300 offices, a 450-seater auditorium, a press room, as well as a childcare centre, a sports hall, restaurants and green spaces. The total estimated building cost is 145 million euros.

The visit was led by the director for logistics operations of the construction site company (VINCI Construction France), working with 30 logistics staff alongside around 400 construction staff in total. He explained that the site faces high logistics constraints due to its location in a very dense and congested area of Paris with little space on site. The site is close to several

environmentally-sensitive buildings and the developers were required to sign a charter to reduce potentially harmful inconveniences (noise, dirt, etc.). To permit the installation of temporary delivery zones and offices, the main contractor had to rent public space from the city of Paris.

For the deliveries, the subcontractors have to book time slots between 7am and 4pm, with access by two entrances located in two different streets. However most of the trucks are typically received between 7.30 and 9am with return logistics activities mainly between 12 and 2pm. The dedicated logistics team is in charge of handling the complexities involved.

2.2 Rome, 20 October 2017, Innovative solutions for urban freight transport and environment in the circular economy era

This combined Citylab regional symposium and local workshop, with participation from the Novelog project, attracted 70 people from city authorities (13 people, of which 3 were Citylab followers), industry (21), consultants (4), research organisations (19), media (1), Citylab Living Lab Advisory Group (5) and Citylab partners (7) (Appendix A -

Table 5).

The event was subsequently reported via the project website at:

- Presentations - http://www.citylab-project.eu/presentations.php#Rome
- Article - http://www.citylab-project.eu/171020_Rome.php

and an independent press article appeared soon after at: http://www.abitarearoma.net/al-campidoglio-workshop-city-logistics-living-laboratories/

The chairman, ***Edoardo Marcucci (Roma University Tre)*** opened the event, welcomed the participants and introduced the speakers.

Linda Meleo (City of Rome) described freight transport policy in Rome, the current situation and the road ahead, emphasising the need for more sustainable approaches to reduce the use of private cars, increase use of electric vehicles and encourage walking and cycling (e.g. through bike sharing schemes). In 2018, Rome will publish its Sustainable Urban Mobility Plan which will include consideration of cargo and logistics taking advantage of the European projects where the city of Rome is directly involved in (e.g. Citylab).

Jardar Andersen (TOI) introduced the Citylab project and summarised the activities taking place in the six other cities: Amsterdam, Brussels, London, Oslo, Paris and Southampton. Link to presentation

Andrea Campagna (Sapienza University of Rome) introduced the Novelog project's approaches to engage and support industry and city stakeholders in urban freight strategy development, echoing similar challenges faced by the Citylab project, for example: working with stakeholders who may have conflicting interests; lack of mutual understanding; sparse amount of available freight data and not commonly shared between private companies and public authorities. Four areas of innovation were described:

1. Substantiating a SULP methodology – to make them easier to understand and use in practice
2. Multi-stakeholder engagement and pilot action
3. Organising data and information and integrating planning processes
4. Developing tools for public and private actors for practical and usable guidance

The tools developed by the Novelog project (see links for details) are aimed at:

1. Understanding cities
2. Evaluation – formulating a multi-criteria multi-stakeholder decision making process
3. Toolkit - aimed at helping cities identify measures implemented in other similar cities, with a database of around 250 previous examples
4. Guidance – aimed at developing a common framework to support cities incorporating urban freight solutions Link to presentation

Q&A session 1

Q: Do you foresee living labs as a long-term approach?

Jardar Andersen: Yes, that is the ethos of the concept – longer term planning is needed in urban freight. The concept is new to the Citylab cities so we have little practical experience of how effective we will be in maintaining long-term partnership of 5-10 years, say. Our different

experiences over the three-year period will be summarised when the project ends in April 2018.

Q: has Rome considered consolidation of small food suppliers through consolidation facilities?

Andrea Campagna: this is rather challenging due to specialised foods with differing storage and handling requirements. We can't control or reduce the frequency of demand unless we can somehow get customers (e.g. cafes and restaurants) to jointly purchase; however, we may be able to reduce delivery distances by using micro-hubs closer to the city centre.

Marco Surace (Roma Servizi per la Mobilità) highlighted Rome's context with some 6 million vehicle journeys made each day and 160,000 goods vehicles circulating. Freight distribution is supported by access rules (e.g. the Limited Traffic Zone (LTZ)) with incentives (e.g. reduced or no fees) for environmentally-friendly vehicles. For sustainable mobility, the city approved the Urban General Traffic Plan in 2015 and a programming tool to rationalize existing systems and mobility services, including consideration of how to contain impacts of circulating freight vehicles. As freight vehicle loading bays are not always respected there is a planned new booking system and new freight bays are being identified across 20 neighbourhoods of the city centre. In terms of opportunity, the CITYLAB implementation will allow us to tackle and evaluate increased recycling and reduced transport-related negative externalities by improving and optimizing waste collection and reverse logistics. The work in Citylab will provide a useful further contribution in developing these programming tools, the Urban General Traffic Plan and the Sustainable Urban Mobility Plan (SUMP). Link to presentation

Valerio Gatta (Rome University Tre) described the living lab in Rome and their implementation involving combining forward and reverse logistics. Urban waste management and recycling is a key area of interest in Rome. The idea of the implementation is for Poste Italiane to collect recyclable materials at the same time as their normal mail deliveries. The Living Lab partners have decided to perform several Living Lab rounds starting from a small-scale implementation later to be upscaled. By doing so, it was possible to practically implement such an innovative solution in a real-life context and discover all the possible organisational problems as well as market opportunities to upscale it. In the first round, the implementation was undertaken at the University of Roma Tre where Poste Italiane collected caps from plastic bottles from existing collection points within the university. Important design considerations were the sizes of containers used and how quickly they would be filled. In this way they were able to reduce empty running and increase recycling rates: the evaluation estimated savings of 40kg CO_2 per month and a 153% increase in recycling but the scheme was not financially sustainable (as expected due to the small-scale implementation). The second round of the Living Lab (on-going) is exploring the opportunity to extend the implementation in terms of flows involved, sites and alternative recyclable/reusable waste by including the solution tested in the first round within the actual logistics process for urban waste management of the city of Rome according to the guidelines recently announced by the Mayor. Link to presentation

Fabrizio Caradonna (Poste Italiane) expressed their interest in using electric vehicles and increasing load factors, especially in return trips. He described their delivery network in Rome which comprises 1300 postmen with 19 delivery centres serving both the densely populated centre (~900 people per km^2 to the extra-urban areas (~33 people per km^2). A video was shown to illustrate their work in the Citylab implementation. Link to presentation (Italian)

Roberto Di Giulio (Meware) has provided the software underlying the Rome implementation carried out by Poste Italiane which includes systems integration for last mile deliveries and collections and tracking. Meware previously worked in the related MODULUSHCA project

which involved the use of modular boxes and physical internet concepts for interconnected logistics. They are excited about the opportunities for optimisation of systems processes associated with new channels for last-mile logistics such as crowdshipping and automated parcel lockers, enabled by IT technology. Meware have invested heavily in gamification which aims to change individual or organisational behaviour for the better by using gaming apps with incentives that encourage players to become 'micro-carrier of the month' or 'best seller', for example. Link to presentation

Pinuccia Montanari *and* ***Massimo De Maio (City of Rome)*** emphasised the city's keen interest in the circular economy to better manage 'post-consumption materials' (avoiding calling it 'waste') and the need to reduce, re-use and recycle. Some 17 million tonnes of waste are produced in Rome each year. They want to rationalise and improve some currently inefficient working practices associated with waste management. They expressed their desire to continue to collaborate with innovative projects such as Citylab and, in line with the Living Lab implementation in Rome, they are planning to open centres for 'creative recycling' where people, typically youngsters, can experiment.

Q&A session 2

Q: What happens to people entering the LTZ without permission?

Marco Surace: There are penalty charges ranging from €50-€100

Q: Are the B2B locker systems open or not and how much do they cost? Also, can you explain crowd-shipping reward methods?

Roberto Di Giulio: We have no practical experience of either these yet; I was talking about future possibilities from an IT perspective. I think lockers would be more suited for B2C applications.

Q: Does Poste Italiane see a future in reverse logistics?

Fabrizio Caradonna: At the moment, the Citylab implementation initiative was shown not to be profitable but we are looking at other markets (e.g. different recyclable/reusable materials) which might have a better economy of scale.

Alan McKinnon (Kühne Logistics University, Hamburg) shared his views on the possible impact of innovative technologies and business practices in last mile logistics, focusing on crowdshipping, drones, droids and 3D printing. This was a thought-provoking review of the current state-of-the-art and analysis of pros and cons of each technology, stripping away the hype that is often associated with them. By way of introduction, he observed an increasing trend in food deliveries and a significant increase in same-day deliveries being offered (51% of U.S. online retailers have same-day delivery capability).

Crowdshipping was originally defined as enlisting the service of people already travelling from A to B and willing to deliver your goods, in the spirit of sharing and networking, but with ever increasing commercialisation and giants such as Amazon and Uber entering the marketplace Alan questioned whether this ethos remained true and was uncertain how crowdshipping networks integrate with traditional ones (e.g. in transfer of parcels between agents) and whether there would be any noticeable effect on traffic levels.

Drones have been proposed and tested for making deliveries (typically for items up to 2.5kg) by various companies such as Amazon, Swiss Post, DPD and Domino's Pizza and the EU is promoting their use ***(see Warsaw Declaration).*** Transport perhaps only represents about a 10% share of total market potential for drones, with infrastructure (36%) and agriculture (26%) likely to have greater potential. A fundamental concern is the possibility of collisions with

aircraft with 70 near misses reported in the UK in 2016; the EU's ***U-space Blueprint*** seeks to address such concerns. Another concern is the security of packages. The estimated cost of drone delivery varies wildly with perhaps the most realistic (€10 per delivery) being made in a report by ***SESAR***; this relatively high cost suggests suitability for the premium same-day delivery market only. A logistical issue is how drones with a delivery radius of 15-20km can serve distribution centres with a 100-300km radius; a fanciful proposed solution patented by Amazon is an aerial fulfilment centre (although perhaps this was done as a publicity stunt!); a more realistic proposition is a drone support truck but then it would face the traffic delays that drones are aimed to avoid; alternatively, can smaller micro-hubs be used closer to cities? Other issues and futuristic solutions included drone landing and charging points (e.g. on top of lampposts). Analysis suggested that drones would have a negligible effect on urban traffic congestion.

Droids, or delivery robots, travel along pavements to make the final delivery to the customer. Typical use is for food deliveries and other low-end items. One of the leading providers is Starship Technologies who claim to have made 60,000kms of deliveries in 100 cities in 17 different countries, with a delivery range up to 3km, payload up to 15kg, travel speed of 6kph and delivery cost of €1.5-3.0 per delivery. Public acceptance will be essential as they may conflict with other pavement users and their onboard video cameras (for security) may raise privacy concerns, while their alarm systems may cause a noise nuisance. Like drones, droids can have their delivery range extended by the use of a specially-designed van (in this case nicknamed 'Robovan').

3D printing is a revolutionary technology with much associated hype about it replacing need for deliveries; however, currently, its use is limited to enterprises with no real penetration of the consumer market. The main reasons for this are very high costs and limited functionality of present systems. While costs may reduce and functionality increase over time, home-based 3D printing still would seem to be a niche market for a very limited range of products. Suggested areas with market potential include mass customisation of sports shoes and home-made toys***. Link to presentation***

Xavier Cruzet and Simon Hayes (Barcelona Mobility Services) described the pilot of using micro-platforms (= micro-hub) and cargo-bikes in Barcelona within the Novelog project, work that came out of the SMILE cargo bike project in 2013. The municipality in Barcelona has conceded some public spaces to allow Last Mile Operators to set up micro-platforms to allow overnight storage of bikes, on conditions that they are neutral (i.e. open to work with all carriers) and that that they share their data with the municipality. Two micro-platforms were established in 2016: El Ninot Market, operated by ECOPOL, part of a group managing an out-of-town consolidation centre; and Estació França, operated by vanAPEDAL. During the period January to May 2017, 14 delivery tours were made daily, averaging 56 parcels per tour and 16,301 parcels per month, and growth was reported since then, including the opening of a third micro-platform (private) serving Ciutat Vella. It was also mentioned that cargobikes are being used as air pollutant sensors in the GrowSmarter project. Link to presentation

Luca Bedoni (Ponyzero) described their zero-emission urban freight distribution company, founded in2009, making use of electric vans, cars, bikes, scooters, working in Torino, Milano, Bologna. They claim to be one of few companies able to provide a 30-minute time window notification of delivery (by SMS text) enabled by a cargo-bike routing app, and they also offer temperature-controlled services, including those made by bike. Practical design issues include being able to separate cargo from the bike by using trailers, as punctures would otherwise cause problems; 'click and change' wheels for speedy replacement; quick battery swap-outs

to make charging easier. They are currently working with the Citylab team to investigate opportunities in Rome. Link to presentation (in Italian)

Francesco Demichelis (TakeMyThings) described the crowdshipping same-day and one-hour deliveries they have been undertaking in Turin since he founded the company in 2015. The business is growing year on year and he predicted having 13,000 customers by the end of the 2017, across a broad range, for example, working with start-up e-commerce companies, artisans and professionals sending documents. Their final deliveries are typically made on bike or by public transport. They are currently working with the Citylab team to investigate opportunities in Rome. Link to presentation (in Italian)

Q&A session 3

Q: You mention zero-free emissions but have you calculated whole life cycle environmental cost bearing in mind the carbon intensity of Italian electricity production?

Luca Bedoni: We (by Ponyzero) have not performed such analyses and I believe they are not so easy to do. Improvements may be available in the industry, e.g. through solar energy production.

Q: Can you briefly outline your vision of the future?

Alan McKinnon: the freight industry is not known for step changes. In the short term (5-10 years) I don't think much will change; in the longer term who knows? The future will also depend on how serious the zero emissions targets are.

Q: Can you say a bit more about the crowdshipping market – for example, you mentioned use of public transport in crowdshipping – how often is this done?

Francesco Demichelis: Some user needs (fast delivery) are not met by normal methods which is where crowdshipping comes to the fore. I would estimate that 80% of deliveries are by walking or bike and 20% using a vehicle emitting CO_2, including buses. There is great participation from students wanting to earn extra money.

LLAG feedback

The event was attended by five LLAG members: Frans de Keyser, Jolyon Drury, Graham Ellis, Nicoletta Ricciardi and Bjarte Grostøl; with written reflections from four of them:

Frans de Keyser:

1. Project timescales

A fundamental concern with any bottom-up initiatives (e.g. Citylab implementations) is that their timescales are completely different from those of the rollout of larger mobility plans. The incoherent timescales of the different policy levels can make the integration of specific projects difficult or even impossible. In fact, an experiment has only a temporary impact or real value. Examples of collaboration in the bottom up approach of Citylab can only have an enduring impact on cities where they are developed, when a follow up of the larger integration in the city is put in place. The Living lab method with a city, where the experience must be integrated in the practice of city logistics, needs repetition in time. One reason is that the project has possibly to be changed when more actors are integrated (main logistic players, administrations of other communes etc.). Another reason is that an integration on higher levels, mainly a coordination with the city mobility plans, is never a simple operation. I see here a parallel with the presentation of the Novelog projects. We can consider them as mere top down projects,

where the working out of plans and the installation and use of tools to organize city logistics are tested. There also we see that the contact with the reality is difficult. There are many more "possible" situations than a plan, model or tool can address. A living lab must continue during the following stages of the integration of a project.

2. The Poste Italiane implementation action

The idea to use the post service for reverse logistics is in principle a very good one, for the same obvious reasons as for all initiatives in logistics: optimize empty space in transport devices and optimize return trips. Three remarks: (i) The procedure shown in the video may be improved by clearly distinguishing between the collection of goods at the client's place to the post office and the shipment of the goods to the operator, which will further process the goods. Those are two clearly different operations and the project should show more clearly that they must be organized differently; (ii) A real question is if "waste recuperation" is the best target to set out for reverse logistics operated by a post office. In fact, waste recuperation is a vast domain of activities, where a lot of services and initiatives are already in place. The project could be improved in real terms, if a list of possible other applications was added that are closer to the function of a person who goes to individual houses and customers; (iii) The introduction of this kind of service is much more complicated than integrating a simple technical operation. In fact, for the introduction of this new service, some serious management problems need to be addressed, associated with the shift in job content and the working habits, development of new products and services, commercial and market positioning of the company, reorganization of flows etc. These issues touch the core activity of a post company and cannot be successfully rolled out without a thorough strategic plan and a general change management that lies deep it the functioning of the office. Some parallels can be drawn with the kind of changes and the management problems faced by postal companies such as Bpost in Belgium in introducing e-commerce operations (i.e. delivering parcels as well as letters).

3. Parcel distribution by electrical vehicles.

Despite all the technological and IT applications that Ponyzero integrates to improve its efficiency, the price of electric vehicles remains a competitive disadvantage compared to diesel or gasoline cars, Luca Bedoni told me. Here the price of electrical batteries is a key element. Even if the price is decreasing seriously – as we have seen in past years - a same level playing field with diesel or gasoline cars is not probable in the coming years. To bridge the difference in cost a kind of preferential system for zero CO_2 emission vehicles is still necessary. Local city distribution plans, largely in favour of electrical vehicles, are crucial. A counterexample can be found in Budapest, where I contacted the Chamber of Commerce some weeks ago. An important condition of the European financing of a new metro- line was the elaboration and realization of a mobility plan for the inner city and the promotion of electrical vehicles. The fact that this condition was not fulfilled has put a brake on the development of starters in the field of low emission last mile delivery.

Jolyon Drury:

The choice of speakers was excellent. Of particular note was the City of Rome's commitment expressed by their senior officers particularly Mrs Montanari for the implementation of the circular economy, a programme to be announced as integral with Rome's new transport

access strategy. This level of commitment will be needed from all EU cities if the emissions and waste recovery targets are to be met. I understood that a logistics sustainability index is being developed (by Novelog) to compare and cluster cities in terms of their history, administration, topography, socio-economic and logistics structures which highlighted – I hope this will be shared although I think it will prove challenging to obtain compatible and comparable data.

The postal recycling presentations were very interesting and well-illustrated. It was indicative that it was the health and safety authority who dissuaded the extension of the recovery service to collect toner and ink cartridges although these are generally able to be resealed in return mail packaging supplied with the original refill. This highlights the need for cross-agency cooperation towards compliance.

Several presentations alluded to "crowd shipping"; this is a key potential development to combine the reduction in emissions by dramatically cutting vehicle numbers by maximising load volume and minimising delivery dwell times to raise productivity. Various "multi packer" optimisation packages are in development. There is some concern about future reliance on an unregulated public concierge network in terms of security, but the advantages for the circular economy are clear to see.

The well-researched statistics in Alan McKinnon's presentation were thoughtful. He clearly differentiates realistic enterprise from technology trials. External delivery automation trends risk running a parallel stream as was experienced in in- plant automated guided vehicle systems some thirty years ago. Many were installed as fashionable technology and discarded shortly after. The enduring systems were simulation tested against several operating scenarios to ensure flexibility and adaptability against a changing demand environment. There are lessons to be learned still. For example 3D printing - additive manufacture - offers the promise of sophisticated cottage industry bringing local employment to post-industrial communities. But similar exercises even with less sophisticated communications more than thirty years ago highlighted the importance of an integrated supply chain for materials supply and product distribution in turn driving clustering of small-scale manufacture to benefit from economies of scale. Perhaps it is in the conversion of historic city centres back into productive employment environments beyond tourism where automated out of hours zero emission delivery and collection may flourish.

All the presentations about cargo cycles as extensions of other forms of sustainable delivery transport networks highlighted that they really rely on the real time optimisation of their loads, routes and operatives to make them flourish. This impinges on the crowd shipping agenda with its concerns about load, operator and consignees' security.

As an overall thought, there are now a number of well-researched city logistics programs well into physical distribution trials responding to the different morphologies compliant with the CITYLAB objectives. As implied by the Novelog presentation too, perhaps the measured results from all these strands - defined by clusters, morphology , emissions objectives, social inclusion be distilled into a protocol as a set of guidelines for city business development and infrastructure planners to be matched against the specific economical and topographical opportunities of each city or region.

Graham Ellis:

Firstly I found that the event was well organised with a diverse set of speakers, who in my opinion were open and honest with the audience. I also found that the politician, Mrs Montari

appeared to have accepted that she and her colleagues had to listen to the professionals if they wanted to make a difference to the city of Rome. I agree with Frans de Keyser that Citylab appears to be delivering outcomes by using a bottom up approach and we are benefiting from the current set of pilot projects. I was approached by a member of a new project in Vienna looking for living lab support (Hans Haulsmayer) and to learn lessons from our pilots, this should be considered by the steering group as another way to disseminate data to a wider audience. We also need to revisit the timetable of project outcomes as a short-term of three years is often far too short to achieve planned outcomes.

Following the presentations I spoke with the Poste Italiane team and they told me that they are currently reviewing all of their delivery/collection operations in regards to the postal service and especially in rural areas where there is little support infrastructure. They are interested in the reverse logistics concept but need to find a profitable way in which to undertake this work. After the conference I spent some more time in Italy visiting other cities and looking at how Poste Italiane worked and it is very similar to that of the UK's Post Office where no reverse logistics are undertaken, apart from collection of post from post boxes on the journey back to the sorting office. I saw very little sign of sustainable vehicles being used for last mile deliveries.

Novelog was a useful pointer in how cities are working towards sustainability but again, it identifies that cities are all at various stages of development in planning and the "one size fits all" approach cannot work. In addition there is tension between the various stakeholders due to the differing perceptions of what is need in both the public and private arenas - this is the reality that we have to understand and ensure that all stakeholders are involved in decision making.

The city of Rome's vision to re-use materials in a sustainable way is a laudable goal but one that may take many years to achieve, by which time the city council may well have changed and new priorities are heralded. This continual political churn at city, regional and national levels often hampers on-going sustainability programmes. There needs to be some way to prevent this happening.

The Barcelona micro-hubs is something I am well versed in, having spent a lot of time in the city with local officials looking at just this sort of operation and the stresses between different departments in the city council when trying to set up this type of operation. There often seems to be no recognition that cross-departmental co-operation can leverage greater outputs than each department operating in its own little bubble.

The Ponyzero project is very similar to that of Gnewt cargo in London and they are recognising that the smaller electric vehicles do not have the capacity to do the work required of them but larger vehicles are prohibitively expensive for what is really an experimental operation to confirm the operational theories behind them. In addition I am not sure if the fact that the electrical infrastructure is sufficient to supply the demanded power on a daily basis, certainly they had not undertaken any well to wheel analysis and so they did not actually have the full cost in terms of emissions and production costs.

Technology is going to make a massive change to how we work and produce goods in the future but how is not yet clear - Alan McKinnon's thoughts on this were very interesting.

Nicoletta Ricciardi:

The Citylab event in Rome has been interesting and stimulating. Innovative ideas in City Logistics planning are the heart of the work of the Rome unit. The presence of councillors in the City of Rome highlighted the importance of experimenting and studying new commodity management policies in the city. This seems to me the very purpose of a living lab, i.e. to build new models, to evaluate, to improve and to implement them. I hope that the living lab experience in Rome can be a stimulus to experiment and implement innovative ideas in urban logistics, focusing on the collaboration and synergy of the various actors involved, even if realization in everyday reality is very difficult to accomplish. The idea to use reverse logistics resources normally used for direct distribution has provided interesting results but to apply it on a large scale it is necessary to overcome some technical and administrative problems. Very interesting for the whole project and for the participants was the presence of Prof. McKinnon who presented the possible impact of innovative technologies and commercial practices in last mile logistics.

2.3 Brussels, 23-24 April 2018, CIVITAS urban freight conference

At the suggestion of the Citylab project, the four CIVITAS urban freight projects - Citylab, Novelog, Success and U-Turn – decided to co-organise this conference in Brussels on 23-24 April 2018, which marked the 'final conference' for each of the projects. The event was attended by around 190 people (Table 8). All presentations, posters, webcasts and video interviews (currently in production) will be made available when ready from Citylab and POLIS websites. Hyperlinks to presentations are given in the conference summary below.

Introductions to projects

Project co-ordinators from the 4 CIVITAS UF projects introduced how each had contributed to reducing impacts and costs of freight and service trips in urban areas:

- Jardar Andersen (Citylab)
- Georgia Ayfadopoulou (Novelog)
- Francesco Ferrero (Success)
- Eleni Zampou (U-Turn)

UF policy – EU and US perspectives

*Henriette van Eijl (*EC, DG MOVE Innovation & Research) introduced speakers from Europe and the USA who talked about the extensive opportunities that exist for EU-US cooperation:

- Mans Lindberg (EC, DG MOVE Sustainable & Intelligent Transport)
- Tamiko Burnell (US Dept of Transportation)
- Bill Eisele (Texas A&M Transportation Institute)
- Christopher Eaves (City of Seattle)
- Danielle de Boer (Dutch Knowledge Distribution Centers for Logistics)

From the presentations and subsequent discussion it was clear that we have many freight and logistics issues in common. Further information sharing and collaboration is likely to be of great benefit.

Planning for freight logistics: practical solutions and longer-term policy

In his thought-provoking keynote speech, Ian Wainwright (Future City Logistics) highlighted complexities associated with multiple stakeholders, technology, land use, customers and commodities. He warned against jumping to solutions and assumptions that technology and data can solve all our problems.

New cooperation models for engaging and supporting public and private actors for urban logistics

Moderated by *Katerina Pramatari (*Athens Center for Entrepreneurship and Innovation) this was a panel debate involving:

- *Ian Wainwright*, Future City Logistics
- *Tanja Ballhorn,* City of Copenhagen
- *Richard van der Wulp*, City of Rotterdam
- *Régis Fontaine*, Optilium Consulting
- *May López Díaz*, SEUR - DPD

The debate highlighted the importance of stakeholder engagement. Companies often have ambitious CSR policies and are supportive of sustainable freight solutions as where win-win opportunities are identified.

Poster session

The second day of the event opened with an exhibition of 30 posters from the 4 projects and with a few other invited posters. This gave participants the opportunity to learn more about the projects, chat informally and provide feedback. The Citylab posters on display are available to view from http://www.citylab-project.eu/implementations.php

Stakeholder cooperation

Moderated by Hans Quak (TNO), speakers were:

- Régis Fontaine (Optilium Consulting) – Project Alliance, a new collaborative contracting model for a better stakeholder cooperation in the construction sector
- Eleni Zampou (Intrasoft) & Enrico Pastori (TRT) – Horizontal collaboration in food logistics: opportunities and challenges for Fast-Moving Consumers Goods industry suppliers and retailers and fresh food local producers
- Maria Rodrigues (Panteia) & Christian Nußmüller (City of Graz) – Guidance in developing cooperative business models for sustainable city logistics
- Nina Nesterova (TNO) – Living labs in city logistics: a way forward for innovations in city logistics

In his summary of the session, Hans Quak pointed out that stakeholder cooperation adds long-term value from building good working relationships and understanding between stakeholders that can extend well beyond the duration of a project. A pilot trial or implementation should be part of a 'bigger picture'. He also stressed the importance of having a well-motivated and well-organised leader to make sure that planned activities progress well.

Improved knowledge of urban logistics

Moderated by Michael Bourlakis (Cranfield University) with speakers:

- Laetitia Dablanc (IFSTTAR) – An Observatory to better understand urban freight and urban freight data

- Mauro Dell'Amico (Unimore) – SUCCESS simulation results of introducing a construction consolidation centre
- Richard Walters (LCP Consulting) – Using data to define new logistics collaboration models: learnings from the U-TURN project with a focus on the supermarket e-commerce market
- Eftihia Nathanail (University of Thessaly) & Marco Mazzarino (IUAV Venice University) – Integration of passenger and freight transport in Venice and use of NOVELOG evaluation tool

In his summary of the session, Michael Bourlakis emphasised that improved knowledge of urban logistics can come from stakeholder engagement and co-creation of new ideas, long-term planning, and longitudinal data collection exercises. Participating freight operators need to know what's in it for them. As we are facing global challenges, there is much to learn from each other.

Policy and regulation, planning for sustainable urban freight

Moderated by Georgia Ayfadopoulou (CERTH/HIT) with speakers:

- Marianne Thys (Brussels Capital Region) – Urban freight policies and stakeholder engagement in Brussels Capital Region
- Andrea Campagna (Sapienza University, Rome) & Veerle De Meyer (City of Mechelen) – Micro-consolidation and Decision Support System for freight distribution planning
- Alfeo Brognara (Emilia-Romagna Region) & Stefano Dondi (Institute for Transport and Logistics) – Urban policy harmonisation in Emilia-Romagna Region
- Michael Bourlakis (Cranfield University) – Policy implications for urban logistics: Insights from three major European cities

In her summary of the session, Georgia Ayfadopoulou mentioned that effective policy and planning need good information and data from various sources to better understand freight vehicle movements and the conditions in which they operate. There is an ongoing need for data collection and further research. Sustainable Urban Logistics Plans are a good forward.

Innovative approaches to urban logistics and their business cases

Moderated by Cindy Guerlain (LIST) with speakers:

- Lina Konstantinopoulou (ERTICO) - The role of ITS and new governance models for sustainable urban logistics
- Sara Fozza (Rina Consulting) - The Novelog pilot in Turin: the use of public infrastructure and technology for city logistics
- Jacques Leonardi (University of Westminster) - Growth of consolidation and electric van use in London
- Carles Pérez Cervera (Fundación Valenciaport) - A cost-benefit analysis of introducing a construction consolidation centre
- Vassilis Zeimpekis (Optilog) & Eleni Zampou (Intrasoft) – Shared logistics opportunities in urban areas: assessing route sharing practices for 3PL freight distributions by employing stable matching logic and the U-TURN platform

The future of urban logistics

Moderated by Michael Browne (University of Gothenburg) this panel debate considered future challenges and comprised:

- *Jardar Andersen*, TOI, CITYLAB project coordinator
- *Georgia Ayfadopoulou*, CERTH/HIT, NOVELOG project coordinator
- Cindy Guerlain LIST, SUCCESS project coordinator
- *Eleni Zampou,* Intrasoft, U-TURN project coordinator
- *Karen Vancluysen*, Secretary General Polis Network, Chair ERTRAC-ERRAC-ALICE Working Group on Urban Mobility, coordinator CIVITAS SATELLITE
- *Fernando Liesa*, Secretary General ALICE, Alliance for Logistics Innovation through Collaboration in Europe
- *Alison Conway*, Assistant Professor of Civil Engineering, University of New York, Complete streets for Freight, NYC
- *Simon Oscilowski* (EC DG MOVE Maritime Transport and Logistics)

The debate considered who should drive innovation and improvement in city logistics. There is no single answer though: national and city authorities play an important role in setting clear policies and strategies while the freight industry are responsible for operating efficiently and sustainably.

Among the wish lists of panel members were:

1. Better stakeholder and end user engagement
2. Citizens understanding impact of their decisions (e.g. in e-commerce)
3. More impact from research
4. Votes for freight!

CO_2-free city logistics by 2030: together we can

The event concluded with ***Joint Recommendations from the four projects*** presented by *Giuseppe Luppino (*Institute for Transport and Logistics) which included:

1. More explicit inclusion of logistics in city planning (e.g. SULP)
2. More freight quality partnerships or living labs for stakeholder engagement
3. Regulatory frameworks for logistics spaces
4. Investment in critical areas

LLAG feedback

The event was attended by four LLAG members: Frans de Keyser, Jolyon Drury, Graham Ellis and Nicoletta Ricciardi. Subsequent written reflections of the event were provided by three members: Frans de Keyser, Jolyon Drury and Graham Ellis, which are summarised here.

Frans de Keyser

The great success of the Civitas event in Brussels shows clearly that the awareness of city logistics has grown strongly compared to a few years ago. From discussions with the other projects (e.g. cycle logistics in Graz, the apps proposed by Cigo from Barcelona and the SUCCESS project in Luxembourg), it appears that operational proposals and technical solutions are key in improving urban logistics, but that projects hit a glass ceiling when they

do not receive or receive insufficient backup from governments, when they cannot rely on a clear framework or on requirements of a mobility or logistics plan. City logistics is not about who takes the lead: new techniques, detailed plans of urban logistics, committed governments or the logistics sector. It is a story of technology and private operators and plans and local governments. This requires an extended Citylab-type of approach.

Jolyon Drury

It has been interesting to compare the approach and project delivery styles of the urban freight projects run in parallel to CITYLAB. The poster exercise was a helpful way to summarise by task and outcome. CITYLAB stood out with clarity in research, deployment and delivery.

The CITYLAB summary brochure *New Trends impacting Urban Logistics; an Observatory* distributed at the event is very clear and provides the evidence base that is needed to progress subsequent projects.

One continuing outcome through POLIS/Civitas might be a set of CITYLAB project guidance notes related to a typology combining the effects of topography, climate, culture and existing custom and practice as a result of these such as:

- Very big dense cities with distinct neighbourhoods
- Smaller but equally dense historic towns often with challenging topography (e.g. hill tops)
- Towns and cities around canals and inlets
- Very hot/very cold climatic challenges.

Graham Ellis

It was clear from the attendees that city logistics have moved up the city planner's agenda quite significantly and several speakers highlighted that SULPs are now becoming as important as SUMPs. Attendees from both the USA and Europe agreed that freight traffic was a necessary part of city living; especially after the UN future cities report; and that it would become all the more important when we started to see increasing occupancy of cities with reduced external mobility. This leads to the need for planners to understand the needs of freight movements and what they can do to improve freight movement when planning new developments. The Chartered Institute of Logistics and Transport in the UK has been educating planners and politicians of the need to consider freight when planning new developments and the Mayor of London has accepted that his draft transport strategy lacked serious attention to freight and logistics. The idea that banning large vehicles from city centres will reduce congestion and emissions has been shown to be a fallacy; to replace the average 16T truck would require at least 8 small vehicles and their associated drivers, which leads directly to increased congestion and pollution. Whilst with the driver shortages reported throughout Europe and the USA, this just will not work – where will these extra workers come from? The conference confirmed that we have to be smarter in how we plan our cities and serve them with the freight that is required for the citizen's well-being. It was also clear from discussions that funding is needed to develop SULPs and other methods of getting freight into

and out of the cities be it via local authorities at all levels or via incentives for businesses to explore new methods of collection/delivery.

3 Local workshops

Each of the Citylab cities organised a local workshop with a focus on the implementation actions taking place in each city. For Paris and Rome, this took place within a larger-scale event, as previously described in section 2; workshops in Amsterdam and Brussels are due to take place on 8th and 28th March 2018, respectively and will be reported in a subsequent version of this deliverable; here we report on the workshops organised by Southampton, London and Oslo.

3.1 Southampton, 27 January 2017, Making freight consolidation centres work - Experiences from Southampton

This local workshop was hosted by the University of Southampton and Meachers Global Logistics (MGL) and attracted 51 people from city authorities (13 people, of which 1 was a Citylab follower), industry (7), consultants (3), research organisations (7), Citylab Living Lab Advisory Group (3), media (1) and 16 Citylab partners (Appendix A - Table 2). The event was subsequently reported via the project website at:

- Webcast - http://go.soton.ac.uk/7wc
- Presentations - http://www.citylab-project.eu/presentations.php#Soton
- Article - http://www.citylab-project.eu/170127_Southampton.php

The following presentations were made:

Tom Cherrett (University of Southampton) introduced the Citylab project and the context of the freight consolidation initiatives taking place in Southampton.

Neil Tuck (Southampton City Council) described city policy objectives, particularly relating to air quality issues and the requirement for Southampton to introduce a Clean Air Zone by 2020 which will levy charges on diesel-fuelled lorries. These ambitions to improve air quality led to their instigation of the Southampton Sustainable Distribution Centre (SSDC), operated by MGL and offering warehousing and consolidation services.

Gavin Bailey (University of Southampton) talked about the role that Delivery and Service Plans (DSPs) have in developing a case for consolidation, using Southampton General Hospital as an illustrative example, in which the DSP revealed freight movements about three times greater than perceived due to previous lack of available information.

Chris Meayers-Norkett (University Hospital Southampton NHS Foundation Trust) described the challenging hospital environment in which freight logistics takes place, competing for valuable space with core functions. Challenges include future plans for growth of the hospital, local infrastructure and increasing congestion and impact on the local environment and residents. As Supply Chain Manager, he saw distinct advantages in consolidation through the SSDC, including alleviation of pressure on internal storage and goods receipt, reduction in goods vehicles on site, improved patient experience and reduction in waste on site. To date, the hospital had used the SSDC for temporary storage and transportation of drugs dispensing cabinets and was planning for greater use associated with pharmacy goods.

Sam Clarke (Gnewt Cargo) talked about the day-to-day challenges they face operating a consolidation and last-mile delivery service, using electric vehicles, for TNT and other parcel carriers in central London. With a fleet size of around 100 electric vans they claim to be the world's largest all-electric vehicle fleet operator. The initiative between TNT and Gnewt Cargo forms the basis of the Citylab London implementation, explained in more detail at the London workshop (section 0).

Sukky Choongh-Campbell (Lambeth Council, London) introduced London borough council aims to reduce numbers of delivery vehicles and to identify priority areas where consolidation can be introduced in a cost-effective way. She mentioned the seeming disconnection between personal behaviour and wider issues where individuals think it is the council's responsibility to solve congestion and air quality problems and not their own. Her recommendations for municipal organisation procurement teams included: consideration of deliveries in all contracts; use of local suppliers; use of ultra-low emitting vehicles; and transparent pricing structures.

Gary Whittle (Meachers Global Logistics) explained the practical realities, both positive and negative, of operating the SSDC. Added benefits of their operating model were stated as: a financially sustainable variable cost operation from an existing service provider using existing facilities (i.e. not a dedicated consolidation centre); inclusion of large municipal organisations enabled a critical mass to be formed (i.e. sufficient goods volume); consideration of a wider geographical area, not limited just to Southampton; establishing links with the retail sector; storage options; and outside the anticipated Clean Air Zone to be introduced by SCC by 2020. Gary's talk was followed by a visit to their premises to see consolidation operations in action.

Figure 3. Participants in Southampton.

LLAG feedback

Independent feedback on the event was provided by Citylab LLAG member ***Jolyon Drury***:

"Southampton is a good model for its size of city (~250,000 persons) being comparatively compact. The traditional ships victualling business now expanded by cruise liners and the ferry service to the Isle of Wight already facilitates consolidation. It is a logical step to extend the existing facilities for new consolidation customers, thereby minimising the cost burden. Compared with a major metropolis like London it may demonstrate the financial model and principles, but may not be directly scalable: but Gnewt Cargo have the opportunity to use their London learning to provide a service for Meachers (the SCC service provider) on the Isle of Wight fulfilling increased home delivery and emissions reduction targets. A key aspect of the

likely success of the Southampton Living Lab's sustainable consolidation centre project is the involvement of the University of Southampton's transportation research group, who are instrumental in gathering the accurate data necessary to provide the measured basis of current business as usual as a core for modelling and then for setting improvement benchmarks for the reduction of goods delivery traffic by influencing the purchasing practices of major institutions and diverting those rationalised orders through a consolidation centre. The workshop, including a visit to the SSDC operated by Meachers, amply demonstrated the stage achieved in this Citylab research project and the initial implementation of the SSDC for reducing the number of deliveries to Southampton General Hospital, the city's two universities and for the retention and distribution of SCC archives. As the project matures, feedback from measured improvements for these projected goods traffic reductions and the uptake of sustainable work practices are awaited with interest for comparison with others in the Citylab programme."

3.2 London, 12 May 2017, Growth of electric freight and consolidation in urban logistics

The London workshop took place on Friday 12 May 2017, hosted by Transport for London and Gnewt Cargo and co-organised by the University of Westminster and attracted 49 people from industry (12), local authorities (9), consultancy (4), research (4) as well as 15 Citylab partners and 5 LLAG members (Appendix A - Table 3). The event was subsequently reported via the project website at:

- Presentations - http://www.citylab-project.eu/presentations.php#London
- Article - http://www.citylab-project.eu/170512_London.php

The purpose of the workshop was to present the Citylab London implementation as well as other urban freight initiatives taking place in London to a wide range of participants (including local industry, representatives from local authorities in London and the rest of the UK, as well as to city representatives and researchers from other European countries). The day included a site visit, presentations and a discussion / transferability session, with attendance from three Citylab Transfer Cities (Budapest, Madrid and Greater Manchester). The transferability session will be reported in detail in Deliverable 6.3 so is not reported here.

By sharing knowledge and experience about the Citylab London implementation it was intended that it would be possible for other cities to gain insight into the potential of this particular scheme to provide a sustainable urban logistics operation using clean vehicles and city centre consolidation that helps to meet traffic-reduction, and CO_2- and emission-free urban freight transport. The workshop also sought to provide participants from other cities with a better understanding of the business model that underpins this London implementation, as well as insight into the role that Living Laboratories can play in fostering urban freight partnerships and solutions between the public and private sectors.

The day began with a site visit to the Gnewt Cargo depot in Southwark to hear about and see the electric vehicle fleet and the last-mile parcel deliveries being planned and taking place. ***Sam Clarke*** (Director of Gnewt Cargo) provided participants with an overview of the history of the company and its operations, together with insight into the central London delivery operation that is running on behalf of TNT (which is the subject of the Citylab implementation).

He explained the Citylab implementation involves a scaling-up of a parcel delivery operation in central London run on behalf of a large parcel carrier specialised in B2B deliveries (TNT) by a small 'last-mile' carrier that specialises in electric freight deliveries (Gnewt Cargo). This talk was followed by a guided tour of the depot at a time at which drivers were preparing their delivery rounds and loading their vehicles – so the participants could appreciate the operational reality of Gnewt Cargo's last-mile parcel deliveries at the depot's busiest time of day.

Participants then returned to the nearby Palestra Building for the rest of the workshop hosted by Transport for London (TfL). Sam Clarke took questions from the workshop delegates about the site visit and what had been seen, as well as questions about the business model that Gnewt Cargo operates and its future plans. The lack of available, affordable sites in inner and central London for similar micro-depots to facilitate the upscaling of this sustainable last-mile delivery approach was discussed, together with the upgrades needed to the electricity network to permit greater use of electric freight vehicles in London.

Steve Steele (Head of Efficient Deliveries Programme at TfL – Figure 4, left) then welcomed all participants to TfL's Palestra Building and commenced the rest of the day's events in his capacity as the Chair of the workshop. ***Jardar Andersen*** (TOI), the project leader of Citylab, provided a brief overview of the Citylab project and the other urban freight implementations and research activities taking place in the project.

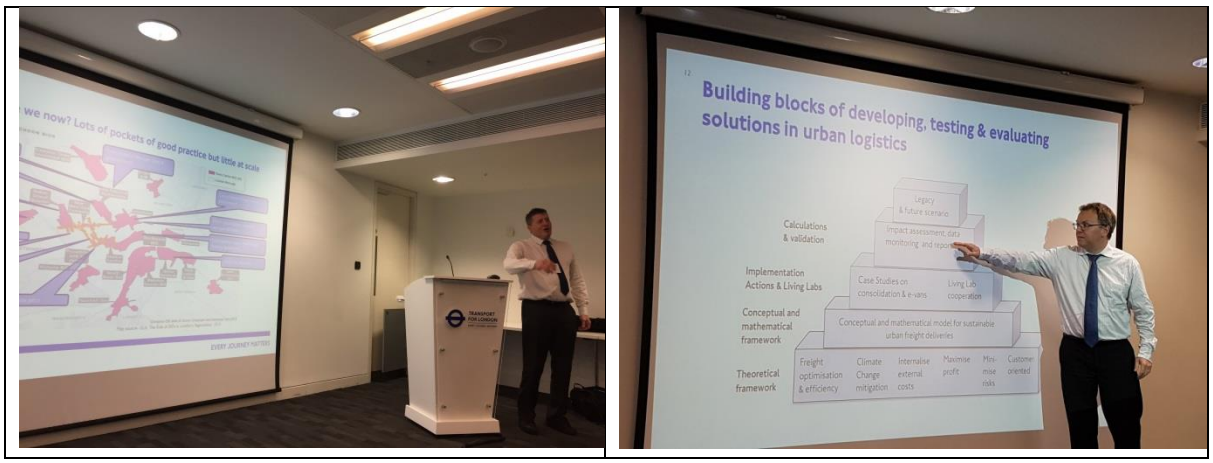

Figure 4. Steve Steele and Jacques Leonardi.

Jacques Leonardi (University of Westminster – Figure 4, right) presented examples and findings of previous trials and demonstrations of both consolidation and the use of clean vehicles in urban freight transport in European cities, including the barriers identified to growing and scaling-up these operations.

Steve Steele (Transport for London) explained the future challenges faced by road freight transport in London and hence the need to plan how best to address freight demand and traffic congestion. He explained the strategic approach being taken by TfL in planning for freight transport in London and coping with its external impacts. This comprises the 3Ms: i) minimise road kms; ii) match demand to the network and; iii) mitigate the impacts of each trip, in that order of priority. He emphasised the importance of land-use planning in future urban freight solutions and provided an overview of existing work of TfL in helping to facilitate the consolidation and retiming of urban freight operations.

Andy Wilson (TNT) began by explaining the operations and reach of TNT parcel operations and its developments over the last 35 years. He then turned his attention to the work TNT has

been involved with as part of Citylab, in which they have partnered with Gnewt Cargo to deliver their customers' parcels in central London via Gnewt's central London depots ad electric vehicle fleet. Andy explained TNT's desire to use a redesigned version of the mobile hub that they had developed for use in Brussels for these central London deliveries, but had to put this plan on hold in Citylab due to the current unavailability of suitable land on which to leave the mobile depot in central London during the daytime delivery operations. Gnewt Cargo is currently delivering in the region of 3,000 parcels per week on behalf of TNT in central London.

Simon Roberts (TfL) provided the participants with insight into the history of air quality challenges that had been faced in London and the actions that have been taken by the public sector to address this and thereby mitigate against the health impacts that would otherwise result. He began by discussing the smog in London in the 1940s and 1950s, and then brought the scene up to date with the current challenges that Londoners are facing, with NOx limits being exceeded across the capital. He outlined the Mayor of London's planned response to this air quality situation with the Toxicity (T) Charge that is due to be implemented this year, and the Ultra Low Emission Zone (ULEZ) that is expected to commence in 2019 and then be extended across greater areas of London over time. This scheme will require vehicles to meet specified emissions standards or pay a fee to enter the ULEZ.

Dan Evanson (Arup) presented the work that is being carried out into reducing the impacts of personal deliveries to workplaces in Bee Midtown (a Business Improvement District in Holborn, central London in which 200,000 people work each day). He outlined the difficulties faced by businesses (in terms of pressures placed on their post rooms in handling many personal deliveries for their staff from many different freight operators) and the impacts on the overall transport system. In an attempt to reduce these business, traffic and environmental impacts, Bee Midtown (in conjunction with Arup) has set up a personal deliveries scheme in which employees can specify an alternative delivery address at the point of ordering goods online (this alternative address is a freight operator's depot rather than their place of work). The freight operator will then consolidate these goods that it receives and carry out deliveries to the workplaces twice per day, thereby reducing the pressure on business post rooms. In addition the freight operator is using electric vans for these deliveries thereby reducing the quantity of diesel vehicles operating in these locations. This scheme is initially being offered free of charge to employees.

LLAG feedback

The event was attended by five LLAG members: Frans de Keyser, Jolyon Drury, Graham Ellis, Erik Regterschot and Nicoletta Ricciardi. Subsequent written reflections of the event were provided by three members: Frans de Keyser, Jolyon Drury and Erik Regterschot, which are summarised here.

Frans de Keyser:

1. Mainstreaming of the London Citylab case as a living lab experiment.

An advantage of the London case in the Citylab project is the collaboration between a political decision power (city policy and creation of conditions), an operational capacity (private operators) and a university or a research centre. This structure guarantees that the three main components - the supply chain from the producer to the city, a consolidation structure in or around the city, and the specific organisation of the last mile delivery - are taken into account. The last mile, as specific as it may be, cannot be organized independently of the commitments of the two other elements. A reorganisation of the supply change (policy of main logistic

companies) or changing conditions in the consolidation structure (e.g. support information, product specialisation, delivery zones and infrastructure) influence the organisation of the last-mile.

An overview of the whole of the logistics chain reduces the risk of focusing only (or too much) on the last mile, which is often done in city logistic projects. Other considerations include:

- Sufficient market share and commercial and technical capacities of the private partner are critical conditions of last-mile projects in urban logistics.
- Mutual support of the different partners must be sufficient and complementary. There must be a certain balance in terms of input and mutual triggers. Medium and long-term developments in the logistic process need to be tailored to the specific function of the partners.
- The London case shows also that an urban policy document or a public plan on urban freight is necessary. It is difficult to set up a real living lab without such a framework.

2. Gnewt Cargo

It is always encouraging to visit a well-functioning company, with a real entrepreneur, seeking to develop his company against all odds and looking for expansion opportunities wherever he can find them. The risks linked to externalities are amazingly important: e.g. the location of the distribution centre (price, size and access-point to the city); traffic conditions; risk of accidents; client base. Logistics by a standalone operator, assuring the whole logistic line up to the client, is increasingly difficult in a large city environment. Last-mile delivery is becoming an independent economic activity on its own in urban logistics. On a micro-economic level, green solutions are a choice not an asset, dictated by environmental priorities. Green logistics demand for a fair public policy.

3. Extension to other cities - the case of Budapest

The project depends on the willingness of young entrepreneurs and engaged public servants to set out a new approach in city logistics in Budapest. A commitment by the urban government to organize their own deliveries in a sustainable manner can be an important stimulus to provide a sufficient scale to start a “green” last-mile delivery. The collaboration of a specialized competence centre (e.g. a university) and a business organisation (chamber of commerce) can assure a positive input in a city, where the last-mile policy is still in the starting blocks.

Jolyon Drury:

The seven CITYLAB implementations demonstrated key areas of endeavour in: political and policy support for urban freight; efficient stakeholder cooperation and collaboration; evaluation and feedback; knowledge transfer; higher rate of innovation take up; research institutes as orchestrators for roll out. The area that requires more attention is the stimulation of change in client procurement practice. Even if major client groups like hospitals or universities are considered "low hanging fruit", the broadcast success of these major groups will go towards persuading SMEs to resolve to change their habits and collaborate.

The question was raised whether Living Labs will survive after the completion of the CITYLAB program. The challenge is of scaling up from an academic research project to supply chain logistics implementation. This is the challenge for the next stage for several of the cities - combining scaling up with demonstrating sustainability. London possibly leads, as by demonstrating sheer volume of trade and associated supply chain logistics, linked with the Mayor's very challenging emissions targets, all driving a step change in last mile operations

practice. London is leading in promoting change in procurement: the City of London is joining the London Borough's Consolidation Centre to increase its critical mass. The lesson in scaling up for other CITYLAB partners to demonstrate the value of consolidation and rationalised deliveries is to persuade government and local institutions to engage in collaborative procurement.

Living Labs are not just demonstrating logistic solutions but the benefits right across the supply chain. There was some scepticism particularly from reluctance of SMEs in London to adopt collaborative procurement: the Bee Midtown presentation demonstrated that 560 businesses across a swathe of London are willing to collaborate. Another approach for UK partners, although not discussed in the workshops, is to engage with CIPS (the Chartered Institute of Purchasing and Supply) to which many government and institutional purchasing managers belong to promote the operational, cost and environmental benefits of procurement collaboration to their members.

The London Living Lab demonstrated that it is succeeding in being transformational although there is still some way to go. The benefit of having an organisation like CLFQP (Central London Freight Quality Partnership) bringing together research by Westminster University, 7 inner-London boroughs, Transport for London, amenity societies, logistics service providers (the Integrators and low emission last mile providers like Gnewt Cargo) with stakeholders - client bodies such as brewery transport and retail groups was explained to the CITYLAB partners in the workshop sessions and in the exchange of knowledge with the external cities who had elected to partner with London- Manchester, Budapest and Madrid- a vibrant session. It was recommended that they form similar partnerships between academia, government and stakeholders.

The visit to Gnewt Cargo was a valuable live demonstration of parcel operations in a constrained site. This visit was backed up by TNT's presentation- also a Gnewt Cargo user from another depot but for a specific area of business and zone of London. Gnewt Cargo's future expansion at their Wardens Grove depot combining several customers' deliveries still in the confined area of 7 railway arches elicited comment from several delegates that similar replication and upscaling would be constrained by their city's construction and electricity codes. The effect of the shortage of inner-city premises in London for consolidation and micro-depots as a constraint for ramping up zero emission deliveries was discussed in the workshop sessions.

The London Living Lab amply demonstrated that no other partner city except perhaps Paris combined the demand density with the emissions challenge - the speed of ULEZ implementation- appreciated as a model for scaling up by the other CITYLAB partners.

To sum up: CITYLAB is driven by the EU directive eliminating inner city emissions for deliveries by 2030. Still requiring work from the partner and associate cities:

- Key public sector roles. Seed funding. Premises provision. Relaxation of certain codes.
- How do you win public and private sector support?
- Challenge: Circumventing local traditions and restrictive practices such as a plethora of selfish-employed drivers with single vehicle fleets. Collaboration is across all stakeholders.
- Changes to customer procurement practice towards collaboration for shared rationalised deliveries and trip reduction.

There may be an FTC2050 program (a UK-based freight study) overlap opportunity by developing route optimisation algorithms to share with CITYLAB partners seeking to maximise

the effectiveness from their proposed floating or land-based mobile micro-depots as hubs for zero emission final leg transport.

Erik Regterschot:

For information, the London living lab may be interested to learn from similar recent experiences from the Netherlands, particularly in Amsterdam:

London Construction Consolidation Centre:

- In Amsterdam almost 30% of all the freight traffic is related to building and construction activities. The city of Amsterdam is working on implementing logistic criteria into their tenders. A couple of projects have been realized resulting in a profound reduction of driven kilometres.

- But the best, visible example is in the City of Utrecht, 30 kilometres from Amsterdam. There, VolerWessels, a big building company, has created a "construction hub" which operates fully in practice for almost two years now. The results on inner city transport movements is huge: a 70% decrease of the number of vehicle trips to the construction place, a 50% reduction of passenger vehicles (construction workers) to and from the construction place and a more effective work; the building time reduced with 25%.

Vans

- In Amsterdam we have seen a huge increase in vans: from 25,000 per day (inner city) in 2015 to 30,000 per day in 2017.

Driver licensing – exemption for e-vans

- This discussion is happening in the Netherlands. A consortium of private and public parties (e.g. Municipality of Amsterdam) is lobbying for an exemption for a formal "professional truck driver's license" that is needed when a vehicle is heavier than 3,5tons.

Retiming

- We have had in Amsterdam – like many other cities in Netherlands – a program called "edge of the night distribution" – in which we tried to stimulate carriers to use the early morning or early evening.
- Only a small number (5%, say) of companies can collect goods at those times – only big retailers and supermarkets – which are the only major parties that have transferred their collecting time so far. In the Netherlands only a few companies make use of drop boxes or share keys with their carriers in order to let them enter the buildings individually. A short instructional movie was made.
- The main focus for Amsterdam is on the shifting of transport from the morning peak towards the "after morning peak" – say between 0930 and 1200. Very important was the broadening of time windows – we experienced a shift of 5% traffic in morning peak and even an overall reduction of driven kilometres in the city (region) of 2%. Reports available in Dutch.
- Also interesting: broadening time windows for electric trucks and vans only. This is seen as a very good stimulating measure (also by companies) to give EV's a better

business case. see for information http://freightinthecity.com/2017/03/amsterdam-uses-operational-incentives-encourage-electric-freight-vehicle-use-city/

BEE Midtown

- A few years ago DHL introduced the parcel lockers to Amsterdam. The DHL courier will leave the packages here so people can collect them in a moment convenient to them. Also the DHL bike delivery team can collect packages. A system that is widely spread in Germany. Also a system whereby a customer needs to alter the delivery address.
- A comparable (Dutch) initiative is Parcls.com. It offer to fetch and deliver packages to you in a short space of time by bike; however, like BEE, the participation grade is very low as shop owners and consumers/inhabitants are not willing to pay the extra fee.
- The best comparable example (in line with BEE) is a drop off point at a shopping centre at Utrecht. There, a non-profit organisation offered to collect parcels and bring the parcels twice a day (milk round) to the shop owners. Only thing shop owners had to do was to alter their address. Insurance (up to €500) was taken care off. Only more valuable goods and fresh goods were not offered to be collected. The project was only a small success. Only a few companies made use the service. Reasons:
    - A lot of deliveries were too heavy / voluminous / fresh / valuable
    - Behavioural change: like BEE; action was needed from the shop owners (alter delivery address), but they didn't – the problem (too much traffic in shopping streets) was probably nog big enough…
    - Carriers (esp. parcels, like TNT, UPS, PostNL, DHL) have various addresses in the shopping centre - they only got a benefit when all their receivers would participate (which was not the case)

Public/private partnership / organisation of front runners

Some information about public –private partnerships (mainly because of discussion in Budapest)

In Netherlands we have the "Green Deal Zero Emission Urban Logistics". It is an agreement between logistics companies and the national and local authorities, knowledge institutions and producers. These parties want to collaborate to scale up logistics concepts and boost the development, availability, reliability and affordability of zero-emission vehicles for urban logistics. Together they are making a commitment to establishing, implementing, monitoring and evaluating Living Labs for zero-emission urban logistics. Scaling up the successful pilots will help realise the goal. Amsterdam is the leading city for the Green Deal. In Amsterdam, several 'living labs' can be found that focus on sustainable (electric), but also smarter logistics. I (Erik Regterschot) am a member of the national secretary for the Green Deal and also responsible for the local network on behalf of the city of Amsterdam. See (in English): http://greendealzes.connekt.nl/wp-content/uploads/2016/05/GD-ZES-Brochure_ENG-Small.pdf

The local Green Deal parties in Amsterdam are organized in a local network. This network was originally initiated by the Chamber of Commerce. Members of this network look for solutions to grow and to upscale their sustainable products and services. The members learn from each other, are ambassadors for sustainable transport and motive non-members. They do that by using market opportunities for smart and clean transport and exchange

experiences. Also, the members create a flywheel effect by sharing results with other companies in and around Amsterdam.

At least four meetings per year and an active LinkedIn group for communication and newsletters. Furthermore; the network is expanding. In 18 months, the network has grown from 30 to 50 'Members' and is connected with other companies. New relations and business have created growth. Members are connected with similar networks in Utrecht and The Hague.

3.3 Malmö, 7 June 2017, Logistics strategies for shopping centres - how to improve the efficiency of delivery and service vehicle activity

This workshop, co-organised by Citylab partners TOI and Steen & Strøm as an 'Oslo local workshop', was held in the Hyllie district of Malmö in Sweden, home to the Emporia shopping centre which was used here as an example of the type of development currently being undertaken in Oslo. The event was attended by 24 people (Appendix A - Table 4) from industry, cities and research, including nine Citylab partners and two LLAG members Bjarte Grostøl and Graham Ellis, whose feedback were incorporated in the workshop report rather than included separately. The event was subsequently reported via the project website at:

- Presentations - http://www.citylab-project.eu/presentations.php#Malmo
- Article - http://www.citylab-project.eu/170607_Malmo.php

Jardar Andersen (TOI) provided an overview of the Citylab project and the urban freight implementations taking place in the partner cities.

Pål Schwartz Samuelsen (Steen & Strøm) then set the scene as to how sustainable logistics can be introduced into shopping centres, particularly at the early design stage, as changing delivery arrangements in existing centres is very difficult. The planned new shopping centre in Økern, Oslo (Figure 5), will be built as part of the city's planned expansion, and with excellent transport links, it is seen as a prime development area. Steen and Strom are looking at reducing the costs of transporting goods from the loading bay to the shop floor for their residents as well as reducing the time that transport companies are on the loading bays. They are also looking at how latest generation alternative fuelled vehicles could be encouraged to deliver to their centres to meet the government's reduction in fossil fuelled vehicles.

Figure 5 - Artist's impression of Økern shopping centre.

Helge Jensen (City of Oslo) talked about what the city authority is aiming to achieve in the Økern district of the city and the wider Hovinbyen area. The city has an ambition to be fossil-free by 2030 and to achieve this they have to have an ambitious logistics plan which encourages the use of electric vehicles. He mentioned that DHL and the city council were opening a new freight micro terminal with e-bikes the following day! The city council are in the process of digitising their road network and they are using sensors to measure the usage of delivery slots, similar to that done in Lisbon in the Straightsol project (http://www.straightsol.eu/demonstration_G.htm). They are also planning to downgrade the status of ring road 3 and encourage smart and green mobility.

Lars Ivarsson (Logistikbolaget AB), the designated operator of internal logistics operations at the Emporia shopping centre talked about management of deliveries. With around 78,000m^2 of retail and restaurant space with 200 tenants, they currently handle 300 inbound deliveries per day and undertake around 500 internal transports to or from tenants. All tenants, apart from two large supermarkets, are forced to use the internal logistics operation as part of their tenancy. The internal logistics operation also covers waste disposal of around 20 tonnes per day. The existing business model involves charging tenants a 'landing fee' for each incoming delivery, which encourages consolidation. They typically operate using only 7 loading docks compared to the industry standard of 35 and also operate just 3 waste compactors compared to the average of 16, both figures identifying that a sustainable logistics system can bring significant operational savings.

Johan Kjellberg (Steen & Strøm) started his presentation with an interesting history of the regional and local developments that have led to the present day Hyllie area, none more so that the construction of the Øresund bridge, linking Sweden to Denmark, which opened in 2000. He then gave an overview of the Emporia centre, comprising 180 stores, 25 restaurants and around 78,000m^2 of leasable space and attracting around 7.5 million customers last year. We were told that Steen and Strøm are assessing whether to make tenants use an external consolidation hub to reduce vehicle movements as there is a site on the edge of town that is directly linked to the motorway network. This raised some challenging and unanswered

questions from LLAG member, Bjarte Grostøl: What went wrong in the design of 2012 to need a new external hub? Is it the problem of old city centres? When will Emporia need the next hub – 2030, 2040?

Olav Eidhammer and Tale Ørving (TOI) gave a summary evaluation of costs and benefits associated with common logistics functions at shopping centres. The main benefits were stated as reduced time spent by delivery drivers at the freight receipt area, with reduced congestion as a consequence, increased efficiency of in-house logistics thereby requiring fewer unloading areas and with less damage to infrastructure and better reliability and predictability of deliveries for shop managers.

Christoffer Widegren (City of Gothenburg) Described initiatives that had recently taken place in Gothenburg, some of which have been evaluated as part of his involvement with the Novelog project. These included freight consolidation for the Lindholmen University campus (a compact area of 200mx200m) using electric vehicles, where distance savings of 2,500km per year were estimated and a similar service for a diverse range of small shops on 10 shopping streets in the centre of Gothenburg. He stated the importance of the deliveries being undertaken by a relatively small 'neutral' operator (rather than one of the big carriers) and reported that the city centre service is almost self-sustaining, just needing around a 10% increase in take-up. The last-mile service is mainly funded at present by transport companies and through advertising. A main challenge for the service is coping with the different opening hours of the shops.

3.4 Amsterdam, 8 March 2018, City deliveries using micro-hubs and innovative freight bikes

Hosted by the City of Amsterdam, PostNL and TNO and chaired by **Professor Michael Browne (University of Gothenburg), Tariq van Rooijen (TNO)** welcomed the 45 participants (Appendix A - Table 6).

All presentations and a version of this report, including some video content, are available from the project website at: http://www.citylab-project.eu/180308_Amsterdam.php.

Jardar Andersen (TOI) introduced the Citylab project and summarised the activities taking place in the six other cities: Brussels, London, Oslo, Paris, Rome and Southampton.

Erik Regterschot (City of Amsterdam, Department for Sustainability) described the city context:

- 5% growth in van traffic per annum, based on camera counts, with currently 30,000 vans recorded daily inside the ring road
- Air quality is the city's main policy trigger with the aim for the majority of vehicle types to be emission free by 2025 and larger trucks and coaches to be clean
- Planned or current initiatives include low emission zones, bans on large vehicles (>7.5T) from the city centre, incentives for electric vehicles (e.g. parking on sidewalks and subsidies). The city is also interested in introducing a congestion charge; however that is not currently permitted in national legislation.

In the Q&A, Erik said that no incentives are given for cargo-bikes as they consider that bikes do not require subsidy and as there are already too many bicycles in the city. They may however consider making more space available for bikes in general. The approach in Amsterdam is aligned with other Dutch cities in terms of the national Green Deal and LEZs.

Laurens Tuinhout (PostNL) described their journey throughout the Citylab project from the

original concept of using a floating depot on the canals to the present-day use of micro-hubs and innovative freight bikes. The floating depot remains of interest if costs can be reduced (e.g. by using a roboboat) or if the alternative becomes unviable (e.g. if trucks are banned). He mentioned that the city plays an important role and use their procurement power to force use of consolidation hubs and zero emission vehicles operating out of them and that many more micro-hubs will be needed to cope with future demand. PostNL currently run an urban consolidation centre at Deudekom, Amsterdam.

In the Q&A, it was observed that canals and quayside space seem to be very busy; however, PostNL were able to identify some suitable berthing locations. The use of a swap body may be considered although an issue would be the requirement for cranes. Some competitors already use canals, for example DHL use them for transporting small parcels and using cubi-cycles.

Nanette Wielenga (PostNL) presented the bikes and stints (segway) they use and the daily operations they undertake. Bikes can save time as routes can be shorter and avoid traffic congestion. PostNL own 6 of the 7 micro-hub locations they are currently using, the other being rented. They make around 1500 orders/day covered by 24 rides in the morning and 36 in the evening. They have learned by doing.

In the Q&A, Nanette said they plan to expand operations to other Dutch cities to meet the growing demand for instant deliveries. A smartphone app for riders to use is being tested which will help them navigate and track bikes for rider safety. Bikes can also be used for return logistics (i.e. collecting parcels). Postal charges are identical for bike and non-bike deliveries and customers are not given a choice about transport mode. They intend to keep a mixed vehicle fleet as there is no ‘best bike’: all have their uses and provide flexibility.

Hans Quak (TNO) presented on behalf of the City of Rotterdam which, compared to Amsterdam, had much larger and open streets, permitting more truck use. Air quality is a fundamental issue there too, especially NOx, where trucks contribute 37% of overall road vehicle emissions despite only representing 1.3% of the vehicle population. The living lab approach, as championed by the Citylab project, dates back to around 2014 in Rotterdam with collaborative initiatives including the VREF Centre of Excellence for Sustainable Urban Freight Systems and Ecostars and, at a national level, agreements were made between the Dutch government and other companies, authorities and NGOs in order to promote sustainability. Related to this, a community of ‘FrontRunners’ organise twice-yearly conferences. Some of the logistics approaches that are promoted include avoiding peak times, facilitating decoupling points and efficient procurement. One street in Rotterdam is restricted to zero-emission vehicles and further low-emission zones are being considered. Good driving behaviour is also encouraged with a best driver competition, run using a smartphone app, providing an incentive.

Laetitia Dablanc (IFSTTAR/Université of Paris-Est) presented some of the more challenging social issues of fulfilling instant deliveries using bikes, drawn from a comprehensive study undertaken within the Citylab project and reported in detail in the Observatory of strategic developments impacting urban logistics. A survey of 100 bike riders revealed their main

concerns, including personal safety, poor weather conditions, bike theft, bike problems, having to wait for food to be ready, poor road infrastructure (e.g. potholes, lack of bike lanes) and pollution. Poor working conditions have led to protests, strikes and legal challenges, mainly in the USA and UK, although it can be difficult to organise collective groups. Such issues are now also being discussed within French legal circles. Some road safety statistics now segregate delivery riders as a distinct category which will provide evidence of a safety issue that has been invisible to date.

In the Q&A there was discussion of operators that had gone bust due to investors withdrawing as it seems that businesses are not currently making any profit. With instant deliveries representing 5% of all deliveries in Paris in 2016 concern was raised that lack of round planning would be highly inefficient. It was suggested that public transport might be used for some delivery trips.

Site visit to PostNL hub

This provided the participants the opportunity to see and ride the bikes and stints at one of the hubs used by PostNL (Figure 6). As many people attended, the largest of their hubs was chosen for the visit, located at Sloterdijk, Amsterdam. This facility includes a covered area for charging of vehicle batteries (Figure 7).

Figure 6. Vehicles being tried out at PostNL micro-hub.

Figure 7. PostNL vehicle charging stations.

LLAG feedback

The event was co-organised by one of the LLAG members, Erik Regterschot, and attended by four other LLAG members Jolyon Drury, Graham Ellis, Frans de Keyser and Nicoletta Ricciardi. Written feedback from Jolyon Drury and Nicoletta Ricciardi is given below; feedback from Frans de Keyser was combined with that for the subsequent workshop in Brussels and is reported later.

Jolyon Drury

"It was refreshing that PostNL trials have all been on a strictly commercial basis. A key tenet of CITYLAB is to enhance business profitability. Implementation of new supply chain logistics technologies must be sustainable to gain credibility before wider or mandated adoption. Laurens Tuinhout from PostNL made the point that cities should use their procurement power to force the use of consolidation hubs and zero emission delivery vehicles as well as changing the procurement habits of the businesses within the city. The City of London is finalising similar plans as evidenced in a recent Central London Freight Quality Partnership meeting.

The plan for the country-wide roll out of 20 specific parcels sorting and distribution hubs throughout the Netherlands to accept the impact of e-commerce which although designed to service larger vehicles for 150-200 drops per round will provide a focus for the adoption of zero emission final leg delivery media matched to the local topography and schedule demands. This is a good example of the provision of a necklace of regional sorting hubs as a catalyst for the evolution of area-specific zero emission delivery services matched to specific city environments.

Although the trial of barges both as hubs and as a delivery medium in Amsterdam has not yet proved to be a success it is to be hoped that the learning from the trial can be incorporated into a second phase. The concept is transferable to any EU city where waterways are traditionally integral with the urban fabric. As a question to Laurens Tuinhout it was suggested that PostNL research a collomodular hierarchy of unit load devices including cycle compatible intermediate containers to multi-modal swap bodies that can both act as dispensers and hubs as well as for distribution within the primary parcels sorting hub network. This too offers an opportunity for deployment to many similar models throughout member states.

The demonstration of the three zero emission vehicles, long wheelbase electric cycles with cargo containers between the axles, electric tricycles with containers over the lead axle and

higher capacity 4 wheeled stand-on vehicles confirmed the possibility of a range of interchangeable intermediate containers linked into a multi-level digital real time track and trace control system.

The learning from the PostNL presentations and demonstration is that setting up a cycle-based delivery network is more than just replacing conventional van routes as the cycles can penetrate a tighter street network, the re-use of a simple car park can make a perfectly serviceable depot and that to maximize the benefit from cycle deliveries including growing the business needs a different character of employee from conventional van drivers. The PostNL experience is transferable as a concept to other cities with high volumes of e-commerce and historically constrained access.

Laetitia Dablanc's presentation raised some interesting governance issues for the proliferation of cycle couriers. In Paris part time workers, students and previously unemployed people are being retained for on-demand cycle courier tasks by allowing them to access from suburban domiciles to the inner city delivery zone with their cycles on public transport. There is concern that cycle couriers are properly registered by their employers as having clean criminal records and as tax payers, exhibit geographical knowledge of their city rounds beyond a cycle-based GPS, and have passed cycle proficiency and health and safety instruction for employer's liability insurance cover. This is a duty of care towards both the shipper and customer necessary wherever inner-city zero emission deliveries are to be adopted."

Nicoletta Ricciardi

"The presentations were interesting and highly relevant given that the distribution of goods made with electric bicycles will surely be used more and more in the near future in urban centres suitable for bike use. In order to apply the PostNL experience in Amsterdam to other cities, it would be useful to know:

1. The methodology used to divide urban areas and how customers are assigned to the various hubs.
2. How decisions about new location of hubs and depots are made
3. Are bike routes fixed, a priori, from day by day or are they arbitrarily chosen by the bicycle drivers?"

[Note subsequent answers to above questions were provided by PostNL/TNO:

1. This is a combination of the number of customers and the volumes of goods in certain areas and the optimal distances for making use of the freight bikes. At PostNL there is a large team of staff that optimizes operations and planning.
2. The answer to this question is linked to the one above. So far hubs are being used that are already before property of PostNL. The available size of the existing micro-hub has influence on the fact whether a new additional hub in a certain area is needed or not.
3. Cycle routes are planned by PostNL

3.5 Brussels, 28 March 2018, Sharing economy logistics: access over ownership

Hosted by Citylab partners Vrije Universiteit Brussel (Mobility, Logistics & Automotive Technology Research Centre (VUB-MOBI)) and chaired by Dr Sara Verlinde (VUB-MOBI), Professor Cathy Macharis (VUB-MOBI) welcomed the 80+ participants (Appendix A - Table 7), including a substantial cohort of supply chain management students from VUB. All presentations are available from http://www.citylab-project.eu/presentations.php#Brussels.

Sara Verlinde (VUB-MOBI) presented an introduction to Sharing Economy Logistics which set out the concept of sustainability through the sharing of logistics processes and physical distribution from a personal to an organisational basis covering the sharing of planning, sorting and distribution capacity, including featured examples of crowd logistics, asset and capacity sharing, consolidation and multi-customer warehousing.

Lieven Deketele (Procter and Gamble) and **Bram Kin (VUB-MOBI)** presented the work undertaken in the Citylab project on Increased Vehicle Loading by Utilising Spare Transport Capacity. The challenge of efficient supply to 900 small grocery outlets in Brussels (referred to as nanostores) was taken up to reduce emissions by substantially reducing the number of vehicles delivering to them by Procter & Gamble utilising spare capacity of local delivery vehicles operated by a number of service partners including Febelco (pharmacy supplies). The challenge was principally one of culture, with the small shops mostly traditionally family owned. The presentation explained this ambitious multi-supplier program, more of a social and cultural network than a pure logistics challenge, demonstrating useful learning as a Living Lab.

Jan Merckx (VIL) and **Heleen Buldeo Rai (VUB-MOBI)** presented on Crowd Logistics. Crowd logistics empowers private individuals or semi-professionals to transport, deliver and consolidate goods. This is a new societally-driven business model particularly suited to resolving fragmented e-commerce deliveries via private intermediaries to bridge the gap between working consignees absent from the delivery point (home) and the risk of loss of unaccompanied goods. It raises a number of legal questions (local employment regulation and practice) and of security, trust and maximising knowledge of local topography.

Alex Van Breedam (Trivizor) and **Luc D'Hondt (Delhaize)** presented on Shared Warehousing. As part of the NexTrust program "Building sustainable logistics through collaborative networks across the entire supply chain" this presentation concentrated on the collaboration of major suppliers to ensure maximum trunk and regional delivery vehicle fill and to minimise network wastage by sharing routes and fulfilment centres.

Patrick van Vlaenderen (CityDepot) presented 'How to Optimise Urban Supply Chains?'. The CityDepot project started as a non-profit initiative but is now a subsidiary of Bpost, with 57 employees. Within a few years CityDepot became a specialist in smart urban distribution by offering a total solution for the sustainable distribution of goods to the inner city and back. It developed a platform to connect transporters, large retailers and brands, small retailers, e-

commerce companies, cities, (semi-)public organizations and consumers. By interconnecting depots in different cities, a lot of actual urban distribution can be removed from the inner city. By bundling volumes and creating optimum inner city rounds, they can provide the most cost efficient deliveries. It also developed customized and personalized solutions for all these stakeholders, not only for inner city distribution but for the optimization of first mile transport, storage management for suppliers and retailers and e-fulfilment (ICT is key).

Q & A on shared warehousing

Q. Is a platform organised by a major retailer, not an obstacle for fair competition between logistic providers?

A. The platform can decide to involve more than one provider, and the fair distribution of costs and benefits between all stakeholders is maintained. What a platform brings in the first place, is efficiency.

Q. Is there a difference between the collaboration of local authorities in different cities? Do mobility plans for sustainable mobility (as in Ghent) favour a CityDepot type of approach?

A. Not really, because licenses for every vehicle of every stakeholder are required (which means, in this case, electrical vehicles), limited working hours are imposed, and so on.

Q. Is the storage facility an asset for all stakeholders or an opportunity for some?

A. The storage facility in CityDepot is limited but can be rapidly organized for short periods and for bundling. The group of cookies producers is an example.

Q. Is the platform formula an application of a theoretical model?

A. Not necessarily. The main idea is to reduce the large number of movements (the so-called spaghetti) between a broad range of providers and a range of retailers. But the realisation of the platform passes through the integrating of all the solutions of every individual stakeholder.

LLAG feedback

The event was attended by two LLAG members: Jolyon Drury and Frans de Keyser. Their feedback to the CITYLAB partners comprised:

Jolyon Drury

There was much emphasis in the first part of the afternoon on the sharing economy and crowd logistics, a societal answer to reducing emissions through transport duplication and vehicle volume wastage whilst responding to near exponential growth in package delivery demand as a result of e-commerce. The move towards sharing facilities and networks at a personal or small company level is laudable – adding to the knowledge and expertise already established in the gig economy in the bigger centres like London. The use of a cadre of self-employed messengers servicing self-employed informal concierge services to resolve the ‘one order, one courier’ challenge was discussed as well in Amsterdam two weeks earlier as well as evidenced by similar developments in Paris. But there is still concern about security, training and health and safety as these networks develop.

Over the CITYLAB program it has become clear that expectations of supply chain performance to meet the key tenets of the program rely on the particular topography, cultures and, up to a point, traditions of those cities involved. Of course the underlying KPI for successful logistics has to be achieved - the right order to the right customer at the right place at the right time at the right cost, sustainably - it is clear that many of the particular delivery systems reviewed can and should be transferable to analogous environments across the European Union to match particular demand for providing for rapidly increasing volume in a zero-emission environment. Perhaps the ongoing challenge will be to produce a matrix of requirements to be matched to the experience of the Living Lab participants as transferable learning.

The other two examples in the workshop of, firstly, Proctor & Gamble with some other selected non-competitive shippers partnering to deliver fuller loads to the 900+ independent small groceries in Brussels and, secondly, at a more bulk level to share trunk and regional transport through a network of common-user fulfilment centres reflects particular traditional custom and practice in Belgium. The learning from the first example is it is not so easy to impose obviously more efficient automated group ordering, replenishment and payment practices, however logical, on small independently-minded family businesses: and from the second, such practices are already firmly established through the 4PL and 3PL communities in other member states without fear of uncompetitive challenges by adopting open book accounting and shared track and trace technology. ELUPEG has been promoting horizontal collaboration for some time.

It is perhaps worth reflecting on whether there has been sufficient comparison in the CITYLAB program of the KPIs and service level agreements driving the current cost and performance base of traditional logistics industry service providers such that realistic benchmarks for improvement can be set. Listening to the many worthy ideas during Living Lab presentations and demonstrations there was some concern about deliverability and achieving real profitability where the transfer of some of these techniques might impact the conventional supply chain environment with its existing critical mass. Perhaps the Living Lab objective is to demonstrate to the established logistics service providers that they too should adapt to match these experimental and innovative practices.

Frans de Keyser

The aim of the Citylab project was to improve knowledge and understanding of freight distribution in urban areas, develop innovative solutions to reduce negative impacts of vehicles and enhance business profitability of urban freight distribution. The presentations of the Citylab projects in Amsterdam and Brussels during the two last workshops, brought a number of themes to the foreground that went beyond the technical operational aspects of urban logistics. These aspects should be given due consideration because what first appears to be secondary factors in logistics, are in fact aspects that are already equally important for sustainable city logistics as the technical operational aspects themselves. They become, or better already are, an inclusive part of the operational aspects of urban logistics. It’s about data, employment conditions, logistic platforms and the so-called artificial intelligence.

1. Data about logistics in urban areas.

Individual operators collect data on the number of vehicles, types of vehicles, payload, routes, types of loads, transfer mode, etc. Exchange or pooling of those data was, and remains, a delicate matter. Regarding the large expansion of the all-time deliveries and the problem of mobility in the cities, a documented vision on urban logistics is a precondition for guaranteeing

smooth logistic operations in the future. However, to pilot the logistic flows it is necessary to measure or at least to estimate the total number of vehicles and deliveries in a city. An example: comparisons between cities of different size according to the percentage of inhabitants may help to benchmark logistic policies on the limits of what a city can absorb. Citylab's observatory on the impact of urban logistics can create the necessary know how.

2 The problem of labour conditions.

The rapid development of crowd logistics and share-economy in logistics has put the working conditions in the spotlight. In many sectors an evolution in the labour organization is signing off, and this evolution is currently very tangible in urban logistics. Last-mile logistic jobs are made of a series of short performances that are paid on the basis of the marginal cost. This forms a structural part of the business models of share-economics and thus of companies, active in the last mile delivery. The traditional employment contracts are not applicable to this labour conditions, and the problem of social security is not regulated. New models must be developed on these two levels. Problems around labour conditions in last-mile distribution have arisen in Belgium, the Netherlands, Germany and France.

The consequence is that the implementation of client-centred logistics into cities may depend on the solutions that are found for employment conditions.

3. "Local distribution centers" (LDC) versus "platforms".

A pure logistics based model of a local distribution centre, where freight from suppliers to retailers is cleared, seems not efficient any more in an urban environment. Urban distribution demands for a model that is able to clear parcels from a large number of suppliers to a large number of retailers. This new model requires more than the entry, storage and distribution of parcels. It is rather a multi-supplier/multi-retailer platform that must streamline the multiple relations between suppliers and retailers. This presupposes that the complex links between all stakeholders are taken into account and requires a dynamic process of establishing the right interactions between all those actors. As for all types of platforms, here too a lot of skepticism, distrust and resistance have to be overcome and the benefits must be distributed transparently and evenly across all stakeholders, even when new ones are added.

This model is not only important as a service for the benefit of smaller suppliers handling a limited number of products on the one hand, and the smaller retailers on the other hand in an urban context. Also for larger suppliers and market (or niche-market) leaders, such as supermarket chains or large institutions (administrations, hospitals), there may be an interest in pooling their logistics in the city to a certain extent.

But the main motivation to step in, is the need to continue to ensure smooth city logistics in the future.

4. The role of artificial intelligence.

Artificial intelligence is not only a buzzword, but also something that is central to the globalization of production and trade. Companies are forced to manage and process a mass of data. The more the processing of data shifts to the core of a business, the more intelligence is needed, but also the more processes can be made more intelligent. It is therefore that "the future belongs to organization with intelligent operations".

There is a core of truth in the claim that AI is determining our economy. And that is certainly the case for logistics. This is most clearly expressed in the ICT, included in logistics platforms and the apps that are set up in logistics. AI is the form that the slogan "ICT is all" gets from now on.

Conclusion:

These four elements, i.e. data collection, effects of marginal cost economy on labour organization, the organization of multi-platforms and the underlying artificial intelligence, are interwoven in the development of the contemporary city logistics. These aspects will determine the development and competitiveness of operators.

4 Other events and meetings

Citylab partners have co-organised or actively participated in a large number of other external events and meetings, either locally, nationally, or at European or worldwide levels; they are summarised here, while fully listed in Deliverable 7.8 (Dissemination and Exploitation Plan – Final, Appendix A). The majority of events have a strong focus on transport and/or logistics but some focus on other areas such as land use and real estate development, retailing, geography, waste and recycling, student accommodation and living labs, thereby broadening the scope and range of our dissemination. All presentations made by Citylab partners are available at: http://www.citylab-project.eu/presentations.php. The events and meetings include:

- CIVITAS Forums
  - Ljubljana, Slovenia, 7-9 October 2015
  - Gdynia, Poland, 28-30 September 2016
  - Torres Vedras, Portugal, 27-29 September, 2017, in which Jardar Andersen (TOI) presented the Citylab approach to engaging urban freight stakeholders in a session jointly organised with the Novelog, Success and U-Turn projects. Citylab report and presentations at: http://www.citylab-project.eu/Civitas_Forum_2017.php
- Leading scientific conferences, e.g.:
  - Transportation Research Board (held annually in Washington DC, USA)
  - World Conference on Transport Research (Shanghai, 2016)
  - Logistics Research Network Conference (held annually in UK)
  - NECTAR conference, Madrid, 31/5/2017
  - Royal Geographical Society Annual Conference, London
  - 7th METRANS International Urban Freight Transport Conference, Long Beach, USA, 17-20 October 2017
  - Transport Research Arena
  - Annual POLIS conferences
- Industry-led events, e.g.
  - VREF conference, Gothenburg, 17/10/2016
  - Slovenian Logistics Association Annual Conference, Ljubljana
  - Smart City Day, Transport et Logistique de France (TLF), Paris, 13/12/2016
  - Several meetings with AFILOG (3PL trade group in France), Paris, 2016-2017
  - Meetings with Oslo freight forum and Norwegian Road and Traffic Association
- Other specially organised events, e.g.
  - Together we're strong: Horizontal Collaboration in Logistics, 15 March 2016, Brussels
  - Grocery retailing in the UK and in Belgium, 22 March 2016, Brussels
  - Alice-Ertrac-EC Collaborative Innovation Day, 23/5/2017, Brussels
  - Energy systems for smart mobility, 22 June 2017, Brussels

    - Open Living Lab Days, 29 Aug - 1 Sep 2017, Krakow, Poland
    - Freight in the city, 1 March 2017, Birmingham, UK
    - Future Public Sector Logistics Consolidation, 23 February 2018, London, UK
- Online events (webinars):
    - Making urban freight logistics more sustainable: from theory to practice, https://www.youtube.com/watch?v=SQX0rlC7Y1Y, 16/12/2015
    - Logistics and Land Use Planning: The Example of Paris https://coe-sufs.org/wordpress/peer-to-peer-exchange-program/webinar18/, 21/6/2017
    - Gaining insights from freight data, https://connectdot.connectsolutions.com/pwkpi2pf5e8u/, 27/3/2018
- Teleconferences
    - Around 20 separate conference calls with P&G local supply divisions of P&G worldwide

Appendix A – Attendance lists

The people who attended each event are listed below, ordered by organisation name. We also categorised by type of organisation to provide the audience breakdown mentioned in the executive summary and also reported in Deliverable 7.8 (Dissemination and Exploitation Plan – Final). The events are listed in chronological order.

Table 1. Innovative urban freight management systems in Paris, 26 May 2016.

First name	Surname	Organisation	Category
Claude	Samson	AFILOG	Industry
Marie-Adélaïde	Bouquet	AFT	Industry
Sarah	Koneke	AFT	SUCCESS project
Vladimiro	Marras	AMAT	City
Valentino	Sevino	AMAT	City
Eleni	Moschouli	Antwerp University	Research
Katrien	De Langhe	Antwerp University	Research
André-Marie	Bourlon	APUR	City
Michèle-Angélique	Nicol	APUR	City
Emmanuelle	Roux	APUR	City
Frans	De Keyser	BECI	Citylab adviser
Patrik	Toth	BKK Centre for Budapest Transport	Citylab follower
Ferenc	Szilagyi	Blueline logistics, France	Industry
Geraldine	Lacasse	Brussels Bouwmeester	Industry
Marianne	Thys	Bruxelles Mobilité	Citylab project
Carl	Verhamme	Catena Consult	Consultant
Jean-Michel	Bouchiat	cci Paris	City
Erik	Regterschot	City of Amsterdam	Citylab adviser
Laura	Tavernier	City of Antwerp	Citylab follower
Jan-Kees	Verrest	City of Delft	Citylab follower
Anette	Thorén	City of Gothenburg	Citylab follower
Lisa	Sebros	City of Graz	Citylab follower
Enrique	García Cuerdo	City of Madrid	Citylab follower
Anne	Recour	City of Mechelen	Citylab follower
Helge	Jensen	City of Oslo	Citylab project
Anne-Sophie	Jamet	City of Paris	Citylab project
Herve	Levifve	City of Paris	Citylab adviser
Jean Louis	Missika	City of Paris	City
Alexandre	Tella	City of Paris	Citylab project
Marilena	Branchina	City of Pisa/SpA Navicelli	City
Vaclav	Novotny	City of Prague	Citylab follower
Richard	van der Wulp	City of Rotterdam	Citylab project

Andreas	Bjørnnes	City of Skedsmo	Citylab follower
Øyvind	Daaland Lesjø	City of Skedsmo	Citylab follower
Martine	Matre Bonarjee	City of Skedsmo	Citylab follower
Neil	Tuck	City of Southampton	Citylab project
Erica	Albarello	City of Torino	Citylab follower
Guiseppe	Estivo	City of Torino	Citylab follower
Jens	Klauenberg	DLR	Citylab project
Graham	Ellis	Ellis Transport Services	Citylab adviser
Philippe	Van Deven	ENGIE GNVert	Industry
Neïla	Saidi	ENSAVT	Industry
Klaas	Van Cauwenberg	Flemish government	Citylab follower
Elisabeth	Charrier	FNTR	Industry
Laetitia	Dablanc	IFSTTAR	Citylab project
Danielle	Pozzo	Iveco	Industry
David	Evaristo	Luxembourg Inst. Sc.Tech.	SUCCESS project
Gary	Whittle	Meachers Global Logistics	Citylab project
Giacomo	Lozzi	POLIS	Citylab project
Giovanni	Zenezini	Politecnico di Torino	Research
Valerie	Tanghe	Port de Bruxelles	Industry
Dario	Biggi	Poste Italiane	Citylab project
Joachim	Weißer	Rogaland County Council	Citylab follower
Olivier	Menalda	SAU	City
Gilles	Delforge	SAU	City
Jesper	Brauer	Scania	Industry
Aminata	Diop	Semmaris	Industry
Charlotte	De Broux	Service public régional de Bruxelles	Citylab project
Christophe	de Voghel	Service public régional de Bruxelles	Citylab project
Christophe	Ripert	Sogaris	Industry
Julie	Collet	SPRB	City
Jean-Rodolphe	Dussart	SPRB	City
Gabriel	Roekens	SUMY	Consultant
Hinde	Boulbayem	SUMY	Consultant
Barbara	Scioni	SUMY	Consultant
Jolyon	Drury	Surge Logistics	Citylab adviser
Nina	Nesterova	TNO	Citylab project
Hans	Quak	TNO	Citylab project
Olav	Eidhammer	TOI	Citylab project
Jardar	Andersen	TOI	Citylab project
Karin	Fossheim	TOI	Citylab project

Helen	Smith	Transport for Greater Manchester	Citylab follower
Scott	Wilding	Transport for London	City
Leise Kelli	De Oliveira	UFMG (Brazil)	Research
Angela	Di Febbraro	Univ. Genova	Research
Michael	Browne	Univ. Gothenburg	Citylab project
Quan	Yuan	Univ. of Southern California	Research
Edoardo	Marcucci	Univ. Roma Tre	Citylab project
Valerio	Gatta	Univ. Roma Tre	Citylab project
Francesco	Filippi	Univ. Rome (1)	Research
Nicoletta	Ricciardi	Univ. Rome (Sapienza)	Citylab adviser
Tom	Cherrett	Univ. Southampton	Citylab project
Fraser	McLeod	Univ. Southampton	Citylab project
Maja	Piecyk	Univ. Westminster	Citylab project
Jacques	Leonardi	Univ. Westminster	Citylab project
Cedric	Labeau	Unizo	Consultant

Table 2. Making freight consolidation centres work - Experiences from Southampton, 27 Jan 2017.

First name	Surname	Organisation	Category
Patrick	Tobin	Arup	Consultant
Joanna	Sammons	Bath and North East Somerset Council	Government
Frans	De Keyser	BECI	Citylab adviser
Tim	Forrester	Borough of Poole	City
Robert	Walter	Borough of Poole	Government
Melanie	Bufton	Bristol City Council	City
Jodi	Savickas	Bristol City Council	Government
Anthony	Soroka	Cardiff Business School	Research
Tom	Parker	City of London Corporation	Government
Emma	Stevens	Coffin Mew	Legal
Graham	Ellis	Ellis Transport Services	Citylab adviser
Christopher	Snelling	FTA	Industry
Dewey	Paul	George Baker Group Ltd	Industry
Sam	Clarke	Gnewt Cargo Ltd.	Industry
Laetitia	Dablanc	IFSTTAR	Citylab partner
Andrew	Pope	Independent Party	Government
Eleonora	Morganti	ITS, Leeds	Research
Sukky	Choongh-Campbell	Lambeth Council	City
Hannah	Powell	Meachers Global Logistics	Citylab partner
Paul	Uglow	Meachers Global Logistics	Citylab partner
Dominic	Betteridge	Meachers Global Logistics	Citylab partner
Gary	Whittle	MGL	Industry

Sara	Verlinde	MOBI-VUB	Citylab partner
Tom	Zunder	NewRail: Newcastle University	Research
Shannon	Betteridge	Paul Basham Associates	Consultant
Giacomo	Lozzi	Polis Network	Citylab partner
Hayley	Pink	Road transport media	Media
Peter	Boustred	Southampton City Council	City
Neil	Tuck	Southampton City Council	Government
Malcolm	Gibson	Steve Porter Transport	Industry
Jolyon	Drury	Surge Logistics Consultants	Citylab adviser
Tariq	van Rooijen	TNO	Citylab partner
Jardar	Andersen	TOI	Citylab partner
Olav	Eidhammer	TOI	Citylab partner
Karin	Fossheim	TOI	Citylab partner
Richard	Banks	Transport for Greater Manchester	City
Scott	Wilding	Transport for London	Government
Philip	Mortimer	TruckTrain Developments Ltd	Industry
Milena	Janjevic	Université libre de Bruxelles	Research
Chris	Meayers-Norkett	University Hospital Southampton	Industry
Mike	Browne	University of Gothenburg	Citylab partner
Graham	Wall	University of Portsmouth	Research
Bani	Anvari	University of Southampton	Research
Gavin	Bailey	University of Southampton	Research
Tom	Cherrett	University of Southampton	Citylab partner
Fraser	McLeod	University of Southampton	Citylab partner
Marzena	Piotrowski	University of Westminster	Citylab partner
Valerio	Gatta	University Roma Tre	Citylab partner
Edoardo	Marcucci	University Roma Tre	Citylab partner
Dan	Massey	Winchester City Council	City
Sarah	Wixey	WYG	Consultant

Table 3. Growth of Electric Freight and Consolidation in Urban Logistics, London, 12 May 2017.

First Name	Last Name	Organisation	Category
Frans	De Keyser	Beci	Citylab adviser
Patrik	Toth	BKK - Centre for Budapest Transport	Government
Thomas	Parker	City of London Corporation	Government
Hervé	Levifve	City of Paris	Government
Trevor	Berry	DPD Group UK Ltd	Industry
Alex	Calnan	Electric Blue	Industry
Graham	Ellis	Ellis Transport Services	Citylab adviser
Graham	Dixon	Esprit Warehousing and Docks	Industry
Frances	Fernandes	Fernhay Partners Ltd	Consultancy

Robin	Haycock	Fernhay Partners Ltd	Consultancy
Sam	Clarke	Gnewt Cargo	Industry
Keely	Walsh	Grid Smarter Cities Limited	Industry
Levente	Eros	Hermes Express	Industry
Laetitia	Dablanc	IFSTTAR	Citylab partner
Zeting	Liu	IFSTTAR	Citylab partner
Enrique	Garcia Cuedo	Madrid Municipality	Government
Sara	Verlinde	MOBI - Vrije Universiteit Brussel	Citylab partner
JP	Taylor	Omnia	Consultancy
Helge	Jensen	Oslo Kommune Bymiljøetaten	Government
Giacomo	Lozzi	Polis Network	Citylab partner
Jindrich	Kotrba	Prague City Hall	Government
Stefan	Bottu	Procter and Gamble	Citylab partner
Phillippe	Gache	Renault Trucks	Industry
Erik	Regterschot	Royal Haskoning/ City of Amsterdam	Citylab adviser
Nicoletta	Ricciardi	Sapienza, University of Rome	Citylab adviser
Maria	Lopez	SEUR	Government
Rodrigo	Diaz	Shell	Industry
Pierre	Berger	Sogaris	Industry
Christophe	Ripert	Sogaris	Industry
Jolyon	Drury	Surge Logistics Consultants	Citylab adviser
Dermott	Crombie	Thermo King/Ingersoll Rand	Industry
Nina	Nesterova	TNO	Citylab partner
Tariq	Van Roojien	TNO	Citylab partner
Andy	Wilson	TNT UK	Industry
Olav	Eidhammer	TOI	Citylab partner
Karin	Fossheim	TOI	Citylab partner
Jardar	Andersen	TOI	Citylab partner
Helen	Smith	Transport for Greater Manchester	Government
Steve	Steele	Transport for London	Government
Eleonora	Morganti	University of Leeds	Research
Debbie	Hopkins	University of Oxford	Research
Valerio	Gatta	University of Roma Tre	Citylab partner
Eduardo	Marcucci	University of Roma Tre	Citylab partner
Julian	Allen	University of Westminster	Citylab partner
Jacques	Leonardi	University of Westminster	Citylab partner
Maja	Piecyk	University of Westminster	Citylab partner
Alessandra	Angelini	Vienna University of Technology	Research
Tamara	Vlk	Vienna University of Technology	Research
Sarah	Wixey	WYG	Consultancy

Table 4. Logistics strategies for shopping centres, Malmø, 7 June 2017.

First Name	Surname	Organisation	Category
Bjarte	Grostøl	ASKO ØST AS	Citylab adviser
Rune	Stranna	ASKO ØST AS	Industry
Gjermund	Strømnes	ASKO ØST AS	Industry
Christoffer	Widegren	City of Gothenburg	Government
Helge	Jensen	City of Oslo	Government
Christine	Grønberg	ColliCare Logistics	Industry
Cathrine	Tyszko	ColliCare Logistics	Industry
Graham	Ellis	Ellis Transport Services	Citylab adviser
Lars	Ivarsson	Logistikbolaget AB	Industry
Giacomo	Lozzi	Polis Network	Citylab partner
Nicolas	Cronberg	Region Skåne	Government
Petra	Stelling	Region Skåne	Government
Sigurd	Ur	Rogaland fylkeskommune	Government
Johan	Kjellberg	Steen & Ström	Industry
Pål Schwartz	Samuelsen	Steen & Ström	Industry
Tariq	van Rooijen	TNO	Citylab partner
Jardar	Andersen	TOI	Citylab partner
Olav	Eidhammer	TOI	Citylab partner
Tale	Ørving	TOI	Citylab partner
Alena	Brettmo	University of Gothenburg	Research
Michael	Browne	University of Gothenburg	Citylab partner
Tom	Cherrett	University of Southampton	Citylab partner
Fraser	McLeod	University of Southampton	Citylab partner
Jacques	Leonardi	University of Westminster	Citylab partner

Table 5. Innovative Solutions for Urban Freight Transport and Environment in the Circular Economy Era, Rome, 20 October 2017.

First Name	Surname	Organisation	Category
Natale	Tommaso	Accenture	Consultant
Marc	Segura	Ajuntament de L'Hospitalet	Government
Bjarte	Grostøl	ASKO NORGE AS	Citylab adviser
Peter	König	B.I.M. Graz	Consultant
Xavier	Cruzet	Barcelona Mobility Services	Industry
Simon	Hayes	Barcelona Mobility Services	Industry
Frans	De Keyser	Beci	Citylab adviser
Toth	Patrik	BKK Centre for Budapest Transport	Citylab follower
Gianluca	Luciani	Città Metropolitana di Roma Capitale	Government
Roberto	Pomettini	Città Metropolitana di Roma Capitale	Government
Emilie	Fodor	City of Lyon	Citylab follower
Linda	Meleo	City of Rome	Government
Pinuccia	Montanari	City of Rome	Government
De Maio	Massimo	City of Rome	Government
Rossi	Monica	City of Rome	Government
Santucho	Camilo	City of Rome	Government
Terracciano	Gaetano	City of Rome	Government
Graham	Ellis	Ellis Transport Services / LLAG	Citylab adviser
Culeddu	Salvatore	FocusRoma	Media
Tijl	Dendal	Government of Flanders	Government
Hans	Häuslmayer	h2 projekt.beratung KG	Industry
Jardar	Andersen	TOI, Norway	Citylab partner
Martellato	Giovanna	ISPRA	Industry
Luca	Alteri	Istituto di Studi Politici "S. Pio V"	Research
Alan	McKinnon	Kuhne Logistics University	Research
Simone	Vagnarelli	LAZIOcrea S.p.A.	Consultant
Simona	Bertollini	Leonardo	Consultant
Clémence	ROUTHIAU	LUTB Transport & Mobility Systems	Industry
Salvatore	Cozzi	Meware	Industry
Roberto	Di Giulio	Meware	Industry
Claudio	Ceccarelli	MIT	Research
Luca	Bedoni	Ponyzero	Industry
Fabrizio	Caradonna	Poste Italiane	Citylab partner
Annalisa	Ceccarelli	Poste Italiane	Citylab partner

Valentina	Lo Presti	Poste Italiane	Industry
Martina	Picchi	Poste Italiane	Industry
Michelle Ann	Santillan	Race Mechanics Sports Management Corporation	Industry
Joachim	Weißer	Rogaland County Council	Citylab follower
Sigurd	Ur	Rogaland Logistics Association	Industry
Valeria	Ancidei	Roma Servizi per la Mobilità	Industry
Chiara	Di Majo	Roma Servizi per la Mobilità	Industry
Maria Isabel	Duran	Roma Servizi per la Mobilità	Industry
Paolo	Ferlito	Roma Servizi per la Mobilità	Industry
Marco	Surace	Roma Servizi per la Mobilità	Industry
Girmenia	Roberta	Roma Servizi per la Mobilità	Industry
Nussio	Fabio	Roma Servizi per la Mobilità	Industry
Risoldi	Danilo	Roma Servizi per la Mobilità	Industry
Andrea	Campagna	Sapienza University of Rome	Research
Nicoletta	Ricciardi	Sapienza University of Rome	Citylab adviser
Jolyon	Drury	Surge Logistics Consultants	Citylab adviser
Francesco	Demichelis	TakeMyThings	Industry
Stefania	Angelelli	Università degli studi Roma Tre	Research
Céline Sacha	Carrocci	Università degli studi Roma Tre	Research
Gabriele	Cruciata	Università degli studi Roma Tre	Research
Daniele	De Marco	Università degli studi Roma Tre	Research
Anxhela	Dule	Università degli studi Roma Tre	Research
Ornella	Gargiulo	Università degli studi Roma Tre	Research
Valerio	Gatta	Università degli studi Roma Tre	Citylab partner
Edoardo	Marcucci	Università degli studi Roma Tre	Citylab partner
Diego	Mariottini	Università degli studi Roma Tre	Research
Giovanni	Mocchegiani	Università degli studi Roma Tre	Research
Lavinia	Pilosu	Università degli studi Roma Tre	Research
Filomeno	Antonio	Università degli studi Roma Tre	Research
Montaldo	Alessia	Università degli studi Roma Tre	Research
Serafini	Simone	Università degli studi Roma Tre	Research
Toniolo	Eleonora	Università degli studi Roma Tre	Research
Paolo	Delle Site	University Niccolò Cusano	Research
Tom	Cherrett	University of Southampton	Citylab partner
Fraser	McLeod	University of Southampton	Citylab partner
Jun	Castro	UP School of Urban & Regional Planning	Research

Table 6. City deliveries using micro-hubs and innovative freight bikes, 8 March 2018, Amsterdam.

First name	Surname	Organisation	Category
Frans	De Keyser	BECI	Citylab adviser
Peter	Koenig	BIM Mobility Consulting	Consultant
Johan	Overmeer	Blue Line Logistics NV	Industry
Bert	Wolters	bw_ruimte in projecten	Consultant
Erik	Regterschot	City of Amsterdam	Citylab adviser
David	Enthoven	Districon/Univ of Groningen	Research
James	Fitzgerald	e-Cargo Bikes Ltd	Industry
Birgit	Hendriks	Eco2city	NGO
Graham	Ellis	Ellis Transport Services	Citylab adviser
Tijl	Dendal	Flemish Govt. - Mobility & Public Works	City
Willem	Alkemade	Hogeschool van Amsterdam	Research
Jesper	Debast	Hogeschool van Amsterdam	Research
Piet	Delft	Hogeschool van Amsterdam	Research
Laetitia	Dablanc	IFSTTAR	Citylab partner
Nicolas	Lazarevic	IFSTTAR	Citylab partner
Josselin	Rouhier	IFSTTAR	Citylab partner
Karin	Fossheim	TOI	Citylab partner
Tale	Ørving	TOI	Citylab partner
Jardar	Andersen	TOI (TOI)	Citylab partner
Alan	Braithwaite	LCP Consulting / U-Turn	Consultant
Jolyon	Drury	London logistics advisory group	Citylab adviser
Katerina	Ovesna	MESSENGER	Industry
Sara	Verlinde	MOBI - Vrije Universiteit Brussel	Citylab partner
Kostas	Papoutsis	Nike EMEA	Industry
Giacomo	Lozzi	Polis Network	Citylab partner
Michel	Hijmering	PostNL	Industry
Kam Jzi	Wong	PostNL	Industry
Eva	van Dijk	PostNL	Industry
Nicol	Saaltink	Rijksuniversiteit Groningen	Research
Tom	Parr	RIPPL	Research
Sigurd	Ur	Rogaland County Council	Citylab follower
Ron	van Duin	Rotterdam University of Applied Sciences	Research
Richard	van Ee	Stintum/Rebelum	Industry
Nina	Nesterova	TNO	Citylab partner

Hans	Quak	TNO	Citylab partner
Stefan	Talen	TNO	Citylab partner
Tariq	van Rooijen	TNO	Citylab partner
Anne-Marie	Nelck	Transport en Logistiek Nederland	Industry
Jacques	Leonardi	Uni Westminster	Citylab partner
Ivan Dario	Barbosa	University of Antwerp	Research
Bolor	Jargalsaikhan	University of Groningen	Research
Nicoletta	Ricciardi	University of Rome (Sapienza)	Citylab adviser
Fraser	McLeod	University of Southampton	Citylab partner
Stefan	Bottu	VIL	City
CMT	Vermeulen	WeMobile Urban Wheelz Cargo	Industry

Table 7. Sharing Economy Logistics: Access Over Ownership, 28 March 2018, Brussels.

Surname	First name	Organisation	Category
Counet	Albert	AC + Consult SPRL	Consultant
Ashwin	Thomas	Antwerp Management School	Research
Durlach	Camille	Antwerp Management School	Research
Gesell	Niklas	Antwerp Management School	Research
He	Shishan	Antwerp Management School	Research
Huysmans	Jasper	Antwerp Management School	Research
Sanjaya	Sonny	Antwerp Management School	Research
Towler	Hayden	Antwerp Management School	Research
De Keyser	Frans	BECI	Citylab adviser
Bereczky	Akos	BKK Budapest	City (Transfer)
Vaancolen	Sandra	BOSCH	Industry
De voghel	Christophe	Brussels-Capital Region	Citylab partner
Thys	Marianne	Brussels-Capital Region	Citylab partner
Van Vlaenderen	Patrick	CityDepot	Industry
Canu	Constantino	CLECAT	Industry
D'hondt	Luc	Delhaize	Industry
Foscolo	Patricia	hub.brussels	Research
Drury	Jolyon	LLAG	Citylab adviser
Nicaise	Mathieu	MNC	Consultant
Deketele	Lieven	P&G	Citylab partner
Lozzi	Giacomo	POLIS	Citylab partner
De jaeger	Steven	Port Solutions	Industry
Van Rooijen	Tariq	TNO	Citylab partner
Orving	Tale	TOI	Citylab partner

Ballegeer	Hendrik	Tomorrow Lab	Consultant
Van Breedam	Alex	TRIVIZOR / AMS	Consultant
Merckx	Jan	VIL	Industry
Sannen	Goedele	VOKA	Industry
Van Doren	Jan	VOKA	Industry
Bekkers	Jurri	VUB-MOBI	Research
Buldeo Rai	Heleen	VUB-MOBI	Research
De Pelsmaeker	Sara	VUB-MOBI	Research
De Radiguès	Philippine	VUB-MOBI	Research
Kin	Bram	VUB-MOBI	Citylab partner
Macharis	Cathy	VUB-MOBI	Citylab partner
Mansuy	Jean	VUB-MOBI	Research
Verlinde	Sara	VUB-MOBI	Citylab partner
+ around 50 VUB students			

Table 8. CIVITAS Urban Freight Conference, 23-24 April 2018, Brussels.

Last Name	**First Name**	**Organisation**	**Category**
Ribo	Marc	Abertis	Industry
Koneke	Sarah	AFT	Research
Reinthaler	Martin	AIT Austrian Institute of Technology	Research
Liesa	Fernando	ALICE	Research
Ploos van Amstel	Walther	Amsterdam University of Applied Sciences	Research
Pramatari	Katerina	AUEB	Research
König	Peter	B.I.M. Mobility Consulting	Consultant
De Keyser	Frans	Beci	Citylab adviser
Romnée	Ambroise	Belgian Building Research Institute	Research
Lénárt	Máté	BKK Centre for Budapest Transport	Government
Moreno Nunez	Eduardo Jose	BogBi S.A.S	Industry
Van Geelen	Hinko	BRRC	Research
De Broux	Charlotte	Brussels Mobility	Government
De Voghel	Christophe	Brussels Mobility	Government
Thys	Marianne	Brussels Mobility	Citylab partner
Wolters	Bert	bw_ruimte in projecten	Industry
Verhamme	Carl	Bxl Mobile/Port Bxl	Consultant
Ayfadopoulou	Georgia	CERTH/HIT	Research
Xenou	Elpida	CERTH/HIT	Research
Conway	Alison	City College of New York	Research
Tavernier	Laura	City of Antwerp	Government
Jonsson	Sophia	City of Borås	Government

Mattsson	Erika	City of Borås	Government
Petersson	Jan	City of Borås	Government
Ringsberg	Kaj	City of Borås	Government
Statham	Lisa	City of Borås	Government
Ballhorn	Tanja	City of Copenhagen	Government
Marott	Casper	City of Copenhagen	Government
Fray	Maria	City of Copenhagen	Government
Bakosch	Alexandra	City of Gothenburg	Government
Widegren	Christoffer	City of Gothenburg	Government
Nussmueller	Christian	City of Graz	Government
Jensen	Helge	City of Oslo	Citylab partner
van der Wulp	Richard	City of Rotterdam	Government
Eaves	Christopher	City of Seattle Department of Transportation	Government
Catini	Ivan	Cmb Società Cooperativa	Industry
Coroyannakis	Panos	CPMR	Research
Bourlakis	Michael	Cranfield University	Research
Kallitsi	Thaleia	Cranfield University	Research
Thommes	Sacha	Daanuu	Industry
Broos	Maxim	De Vlaamse Waterweg	Industry
De Groef	Christine	De Vlaamse Waterweg	Industry
Vandenborre	Gilles	De Vlaamse Waterweg	Industry
Dhital	Narayan	DLR GfR mbH	Industry
Klauenberg	Jens	DLR Institute of Transport Research	Citylab partner
Krings	Michael	dmklogistik GmbH	Industry
Ben Samoun	Alexandra	DPD	Industry
Ennis	Colm	Dublin City Council	Government
Bens	Wim	Dutch Knowledge Distribution Centers for Logistics	Research
De Boer	Danielle	Dutch Knowledge Distribution Centers for Logistics	Research
Oscislowski	Szymon	EC DG MOVE	Government
van Eijl	Henriette	EC DG MOVE	Government
Hendriks	Birgit	Eco2city	Consultant
Simmons	Andrew	Ecological Sequestration Trust / resilience.io	Consultant
Maes	Jochen	Ecorys	Consultant
Breuil	Dominique	EIGSI	Research
Graindorge	Tatiana	EIGSI	Research
Ellis	Graham	Ellis Transport Services	Citylab adviser
Brognara	Alfeo	Emilia Romagna Region	Government
Konstantinopoulou	Lina	ERTICO	Government
Somma	Giacomo	ERTICO - ITS Europe	Government
Karjalainen	Piia	ERTICO - ITS Europe / MAAS Alliance	Government
Lindberg	Mans	European Commission	Government

Missen	Robert	European Commission	Government
Chiarini	Paola	European Commission - DG Mobility and Transport	Government
Burnell	Tamiko	Federal Highway Administration	Government
Ángel Balufo	Isabel María	FEVEC	Industry
Asensi Ortega	María Carmen	FEVEC	Industry
Bouchery	Karine	FM Logistic	Industry
Kemiche	Anissa	FNTR	Industry
Tillmann	Elke	Freelance Transport expert	Consultant
Pérez	Carles	Fundacion Valenciaport	Industry
Wainwright	Ian	FutureCity Logistics	Consultant
Rudolph	Christian	German Aerospace Center (DLR)	Research
Dendal	Tijl	Government of Flanders - Department Mobility and Public Works	Government
Dessart	Antoine	Hytchers	Consultant
Granes	Nathalie	IDF Region	Government
Dablanc	Laetitia	IFSTTAR	Citylab partner
Lazarevic	Nicolas	IFSTTAR	Citylab partner
Rouhier	Josselin	IFSTTAR	Citylab partner
Guaspare	Françoise	Ile-de-France Europe	Government
Lettré	Vassilia	Ile-de-France Europe	Government
Arcelli	Andrea	INEA	Government
Cabrera Garcia	Juan Jose	INSPIDE	Consultant
Luppino	Giuseppe	Institute for Transport and Logistics	Research
Bardi	Andrea	Institute for Transport and Logistics	Research
Dondi	Stefano	Institute for Transport and Logistics	Research
Giorani	Anna	Institute for Transport and Logistics	Research
Tu	Eleonora	Institute for Transport and Logistics	Research
Andersen	Jardar	Institute of Transport Economics	Citylab partner
Eidhammer	Olav	Institute of Transport Economics	Citylab partner
Fossheim	Karin	Institute of Transport Economics	Citylab partner
Ørving	Tale	Institute of Transport Economics	Citylab partner
Kiousi	Akrivi	INTRASOFT INTL	Consultant
Thivaios	Kostas	INTRASOFT INTL	Consultant
Zampou	Eleni	INTRASOFT INTL	Consultant
Nogueira	Marcos	IrRADIARE,Lda	Consultant
Stamos	Iraklis	IRU Projects	Consultant
Gonzalez	Emilio	ITENE	Research
Güerri	Sergio	ITENE	Research
Mazzarino	Marco	IUAV Venice	Research
Pozzo	Daniele	IVECO	Industry
Levy	Nimrod	Jerusalem Municipality	Government
Do Couto Rodriguez	Gabriel Alfonso	JMMA France	Industry
Espada	Juan Carlos	Joint Institute for Innovation Policy	Research

Navarro	Angel	Las Naves	Industry
Walters	Richard	LCP Consulting	Consultant
Guerlain	Cindy	Luxembourg Institute of Science and Technology	Research
Renault	Samuel	Luxembourg Institute of Science and Technology	Research
Ferrero	Francesco	Luxembourg Institute of Science and Technology	Research
Garcia Cuerdo	Enrique Daniel	Madrid City Council	Government
Iwan	Stanislaw	Maritime University of Szczecin	Research
Gagatsi	Elisavet	MOBI - VUB	Citylab partner
Kin	Bram	MOBI - VUB	Citylab partner
Macharis	Cathy	MOBI - VUB	Citylab partner
Verlinde	Sara	MOBI - VUB	Citylab partner
Rouge	Jérôme	MPI	Consultant
Branchina	Marilena	Navicelli di Pisa srl/City of Pisa	Government
Rizzi	Giuseppe	NEWOPERA Aisbl	Industry
Mentzoni	Jan-Terje	Norwegian Road Transport Association	Industry
Barber	Rick	NZTA	Industry
Zeimpekis	Vasileios	OPTILOG Advisory Services	Consultant
Burgess	Arnaud	PANTEIA	Consultant
Rodrigues	Maria	PANTEIA	Consultant
Tharsis	Teoh	PANTEIA	Consultant
Arnd	Michel	Polis	Citylab partner
Lozzi	Giacomo	Polis	Citylab partner
Mourey	Thomas	Polis	Citylab partner
Ripa	Francesco	Polis	Citylab partner
Vancluysen	Karen	Polis	Citylab partner
Vanden Broeck	Laurent	Port of Brussels	Industry
Bellissimo	Andrea	Poste Italiane	Industry
Kříbala	Martin	Prague Institute of Planning and Development	Research
Brouwers	Eric	ProSales	Consultant
Mermans	Edwin	Province of Noord-Brabant	Government
Dalbard	Marc	PTV Group	Consultant
Goumas	Athanasios	Regioeuropa	Consultant
Paroskevi	Paloriologou	Regioeuropa	Consultant
de Bock	Joost	Retired EU Commission	-
Fozza	Sara	Rina Consulting	Consultant
Surace	Marco	Roma Servizi per la Mobilità	Government
Gatta	Valerio	Roma Tre University	Research
Marcucci	Edoardo	Roma Tre University	Research
Belouannas	Fouad	SAINT ETIENNE METROPOLE	Government
Campagna	Andrea	Sapienza University of Rome	Research
Ricciardi	Nicoletta	Sapienza, University of Rome	Citylab adviser

López	May	SEUR	Industry
Fechteler	Till	SimPlan AG	Consultant
Bjørgen	Astrid	SINTEF	Research
Norman	Simon	Småland Blekinge Halland South Sweden	Government
Larriba Pey	Josep L	Sparsity Technologies	Consultant
Borsu	Damien	SPW DG Mobilité et Voie Hydrauliques	Consultant
Presttun	Toril	Statens vegvesen	Government
Boulbayem	Hinde	SUMY	Consultant
Pellinen	Jukka	Tampere University of Applied Sciences	Research
Lopez	Cristina	Technical University of Madrid	Research
Arndt	Dr. Wulf-Holger	Technische Universität Berlin/ Difu	Research
Eisele	Bill	Texas A&M Transport Institute	Research
Binham	Peter	TFL	Government
Nesterova	Nina	TNO	Citylab partner
Quak	Hans	TNO	Citylab partner
Talen	Stefan	TNO	Citylab partner
van Rooijen	Tariq	TNO	Citylab partner
Engels	Dirk	Transport & Mobility Leuven	Government
Van Den Bergh	Gitte	Transport & Mobility Leuven	Government
Vannieuwenhuyse	Bart	TRI-VIZOR	Consultant
Galli	Giuseppe	TRT	Consultant
Pastori	Enrico	TRT	Consultant
Klüter	Astrid	TU Dortmund University	Research
Poeting	Moritz	TU Dortmund University	Research
Apruzzese	Michela	UNIMORE	Research
Dell'Amico	Mauro	UNIMORE	Research
Beckers	Joris	University of Antwerp	Research
De Langhe	Katrien	University of Antwerp	Research
Verlinden	Thomas	University of Antwerp	Research
Browne	Michael	University of Gothenburg	Citylab partner
Cherrett	Tom	University of Southampton	Citylab partner
McLeod	Fraser	University of Southampton	Citylab partner
Nathanail	Eftihia	University of Thessaly	Research
Leonardi	Jacques	University of Westminster	Citylab partner
Green	Paul	Vectos Ltd	Consultant
Bippus-Corti alle Catene	Hartwig	Velo Carrier/um-Products	Industry
Maggi	Elena	Venice International University - University of Insubria	Research
Bottu	Stefan	VIL (Vlaams Instituut voor logistiek)	Industry
Vazquez	Martine	Ville de Paris	Government
Fontaine	Régis	Vinci Construction France	Industry
Servais-Picord	Béatrice	Vinci Construction France	Industry
Kassyda	Christian	Volkswagen Commercial Vehicles	Industry

Wutke	Christian	W hochzwei GmbH	Industry
Drury	Jolyon	Woodside Kent	Citylab adviser
Sarrazin	Renaud	-	-