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HORIZON 2020 PROGRAMME for RESEARCH and INNOVATION

Reducing impacts and costs of freight and service trips in urban areas (Topic: MG-5.2-2014)

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Transferability leaflet

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Aim of this document

The aim of the H2020 Citylab project was to:

1. Improve basic knowledge and understanding about the impacts of freight distribution and service trips in urban areas
2. Test and implement seven innovative urban freight management solutions that could positively influence business profitability, reduce traffic and emissions, and have wider roll-out potential for the logistics sector
3. Provide a platform for replicating and disseminating the supported solutions.

The Citylab solutions focus on four axes for intervention:

- Understanding the highly fragmented last-mile delivery operations that currently exist in city centres
- Identifying the specific freight impacts arising from large activity centres such as public administrations and higher education institutions
- Investigating the ways in which service trips (waste and recycle management and reverse logistics systems) could be made more efficient to reduce freight vehicle impacts
- Quantifying the role logistics facilities and infrastructure could play in redesigning supply chains serving urban centres

The core of Citylab is a set of living laboratories, where cities work as contexts for innovation for public and private measures contributing to increased efficiency and sustainable urban logistics. The different living labs exchanged their experiences to enable transfer of implementations between cities and freight operators.

This leaflet fits the project's objective to develop the fundament for further roll-out of the solutions. It summarizes Citylab's transferability analyses and gives an overview of how well the implemented Citylab solutions could be transferred to the other Citylab cities. The full versions of the reports this leaflet is based on are available online at **www.citylab-project.eu/deliverables.php**.

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Citylab implementations

Amsterdam - City centre micro-hubs and clean vehicles

PostNL picks up mail from mail collection boxes and delivers and picks up B2B mail and parcels. They operate from a warehouse outside the city-centre. The implementation introduced micro-hubs as inner city cross dock facilities and demonstrated how deliveries and pick-ups can be done by e-freight bikes instead of vans.

Brussels - Increasing load factors by utilising spare van capacity

Procter & Gamble tested whether they can cost-efficiently supply consumer goods to small stores by utilising the spare freight vehicle capacity of third party service providers. The test was done in cooperation with Febelco, a wholesale distributor of pharmaceutical products. The aim was to increase vehicle load factors and reducing negative impacts of distribution by consolidating and bundling more efficiently.

London - Growth of consolidation and electric vehicle use

Scalable and transferable business models for urban deliveries are being developed between a large carrier (TNT) and a small 'last-mile' carrier (Gnewt Cargo), using electric vehicles and cycles. The implementation experimented with integrated and co-operative supply chain approaches between carriers and aimed to understand how to grow the business model of electric freight in urban logistics.

Oslo - Common logistics functions for shopping centres

The implementation facilitated Steen & Strøm's planning of common logistics functions for in- and outbound freight flows to reduce dwell time spent by freight vehicles and increase in-house logistics efficiency at their Økern shopping centre in Oslo. The shopping centre is expected to open in 2022.

Paris - Logistics hotels

The municipality of Paris and Sogaris, a logistics real estate developer and manager, developed a model of inner city logistical zones and facilities to reduce negative consequences of logistics sprawl. Chapelle is a 24.000m² urban rail terminal which was built during the Citylab project and will be a cross-dock terminal for consolidated deliveries of a large retail chain. Beaugrenelle is an existing 3.000m² facility operated by Chronopost.

Rome - Integration of direct and reverse logistics

Forward and reverse logistics are combined by using the same (electric) vehicles for postal deliveries and collection of recyclable materials. In the initial action, plastic bottle caps were collected from sites of the University of Roma Tre and integrated in the existing delivery tours of the national postal operator Poste Italiane.

Southampton - Joint procurement and consolidation

The freight impact of large municipal organisation (local authorities, hospitals, universities) is being addressed through identification of consolidation opportunities and encouraging implementation. While potential for consolidation was identified for the two universities and in the hospital sector, various barriers currently prevent operational changes, including financial constraints and concerns about any delays to urgent deliveries.

More detailed information on the Citylab implementations can be found on the Citylab website (http://www.Citylab-project.eu/implementations.php and http://www.Citylab-project.eu/deliverables/D5_4.pdf).

Methods used for transferability analyses

Evaluation of chances for successful transfer

Aim of the main transferability analysis within Citylab was to assess if and how the Citylab solutions can be transferred and scaled successfully from their original implementation city to other Citylab cities. The transferability methodology adopted in the TIDE project has been taken as the basis for the Citylab methodology as it is the most developed method and the most relevant to Citylab. TIDE was an FP7 project of the European Commission that ran from 2012 until 2015 and aimed to enhance the broad transfer and take-up of 15 innovative urban transport and mobility measures. An adjustment of the TIDE methodology was necessary as, on the one hand, TIDE examined the transferability of measures in general, while Citylab will analyse the transferability of applied measures to specific cities. On the other hand, TIDE analysed innovative urban transport and mobility concepts whereas Citylab is dealing with the implementation of innovative logistics solutions.

The seven consecutive steps of the Citylab transferability analysis are:

- STEP 1: Implementation statement/objectives and scoping
- STEP 2: Clarification of the impacts of the implementation
- STEP 3: Identification of upscaling/downscaling needs of implementations
- STEP 4: Identification of success factors of implementations
- STEP 5: Identification of the level of importance of success factors
- STEP 6: Assessment of success factors in the context of adopter city
- STEP 7: Conclusions on the transferability of implementations

More detailed information in Citylab Deliverable 5.6 *Assessment of roll-out potential of Citylab solutions to other Citylab living labs* (http://www.Citylab-project.eu/deliverables/D5_6.pdf).

User acceptance analysis

Prior to implementing a solution in each Citylab city, we did ex-ante behavioural analyses to evaluate the degree of acceptance of the solution through future users' perceptions. This was done by collecting new data from stakeholders (involved or not yet involved) through questionnaires to understand their current behaviour and their ex-ante acceptance of the solution. This analysis led to the identification of barriers/opportunities and necessary strategic/operational prerequisites for the proposed solutions and, where applicable, a first measurement of willingness to pay.

These ex-ante analyses have been replicated in a second Citylab city to assess possible user acceptance for the solution in that city. The choice of where to replicate the ex-ante behavioural analysis was based on three criteria: (i) outcomes of the main transferability analysis, (ii) project partners in each Citylab city were asked which Citylab solution they would like to adopt, and (iii) project partners in each Citylab city were asked which Citylab city they thought was most appropriate to replicate their solution.

More detailed information on the methodology in Citylab Deliverable 2.2 *Urban freight status of the Citylab living labs and behaviour change/willingness to pay analysis (*http://www.Citylab-project.eu/deliverables/D2_2.pdf) and on the results of the analyses in Citylab Deliverable 5.5 *Evaluation of the willingness to pay for the sustainable Citylab solutions (*http://www.Citylab-project.eu/deliverables/D5_5.pdf).

Evaluation of overall stakeholder support

We organised a local stakeholder meeting in each Citylab city during which local stakeholders assessed whether the tested Citylab solutions would be a good option for their city or not. We used Multi-Actor Multi-Criteria Analysis (MAMCA), which is an interactive tool that allows integrating different stakeholder opinions in one analysis. The idea of a MAMCA workshop is that representatives of each urban freight transport stakeholder group (shipper, transport operator, receiver and society) are present. During the workshop, each participant is guided in expressing how important certain (decision) criteria are to him/her when choosing or evaluating a certain last-mile option. In a second part of the workshop, the participants assessed how well they believe the Citylab implementations would score on these criteria if they were applied in their city. A third part of each workshop consisted of challenging the perceptions of local stakeholders by discussing the results and comparing them to the actual performance of the

Citylab implementation (in the city where they were implemented). This assessment of actual performance was based on the evaluation work that was done in Citylab WP5.

More detailed information in Citylab Deliverable 6.2 *Minutes of local stakeholder meetings* (http://www.Citylab-project.eu/deliverables/D6_2.pdf).

Transferability of Citylab solutions to Amsterdam

Chances of successful transfer of Citylab solutions to Amsterdam

In general, there are **high chances for a successful transfer of the Citylab solutions to Amsterdam**. Almost 60% of the factors needed to successfully implement the Citylab solutions were rated as 'strong support' or 'support'. Conditions in Amsterdam are very good to implement:

_ Cargo cycles for freight

_ Common internal logistics for a major multi-tenanted building/area

_ Non-road modes

Indication of support in Amsterdam for the 119 factors that are relevant to successfully implement the 7 Citylab solutions

Amsterdam is the second best Citylab city for implementing the solutions of Southampton (Joint procurement and consolidation for large public institutions) and of Paris (Logistics hotels to counter logistics sprawl). Compared to the other Citylab cities, the chances of successful implementation of the solutions of London (Growth of consolidation and electric vehicle use), Rome (Integration of direct and reverse logistics flows) and Brussels (Increasing vehicle loading by utilising spare capacity) are low.

Amsterdam	1	2	3	4	5	6
Common logistics functions for shopping centres (Oslo)	Rome	Paris	Southampton	Amsterdam	Brussels	London
Growth of consolidation and electric vehicle use (London)	Oslo	Paris	Rome	Southampton	Amsterdam	Brussels
Increasing vehicle loading by utilising spare capacity (Brussels)	Paris	Oslo	Rome	London	Southampton	Amsterdam
Integration of direct and reverse logistcs flows (Rome)	London	Paris	Oslo	Southampton	Amsterdam	Brussels
Joint procurement and consolidation for large public institutions (Southampton)	London	Amsterdam	Oslo	Rome	Paris	Brussels
Logistics hotels to counter logistics sprawl (Paris)	Southampton	Amsterdam	Rome	Oslo	Brussels	London

More support for three important success factors would significantly increase the chance for successful transfer of multiple Citylab implementations to Amsterdam:

_ Appropriate central locations for logistics facilities

_ Refuelling/recharging networks for alternatively fuelled vehicles

_ Promotion of the Citylab solutions among public and private senior managers and political support for their implementation

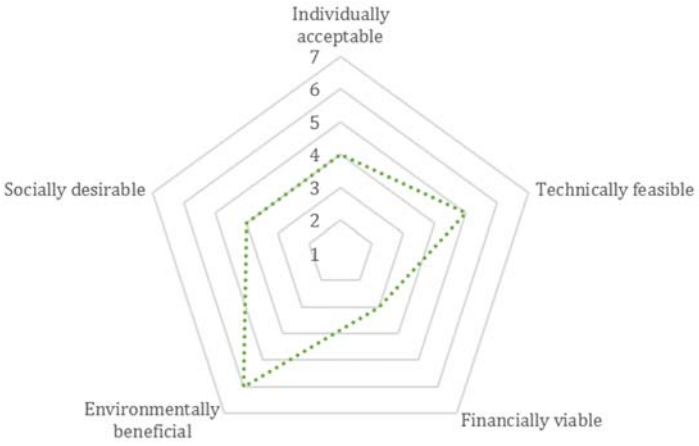
Focus on user acceptance

Do local users confirm that the Southampton solution (Joint procurement and consolidation for large public institutions) is suited for a transfer to Amsterdam?

Evaluator(s): One employee of the logistics department of a centralised hospital in Amsterdam.

Evaluated concept: Freight flows to a centralised hospital in Amsterdam are consolidated in a distribution centre on the outskirts of Amsterdam and delivered at a convenient time.

Since the hospital is centralised and is already efficiently handling high volumes of goods, the idea of having an off-site consolidation centre is not considered a priority. The employee doubts the financial viability of such a distribution centre but is confident in the positive environmental impact and technical feasibility. She would not want to pay for the benefits the solution would bring; on the contrary, she beliefs that the concept can only be viable if logistics companies are paid less and if governments provide subsidies because of the positive environmental impact of the solution.



Indication of user acceptance in Amsterdam for the Southampton solution (Joint procurement and consolidation for large public institutions)

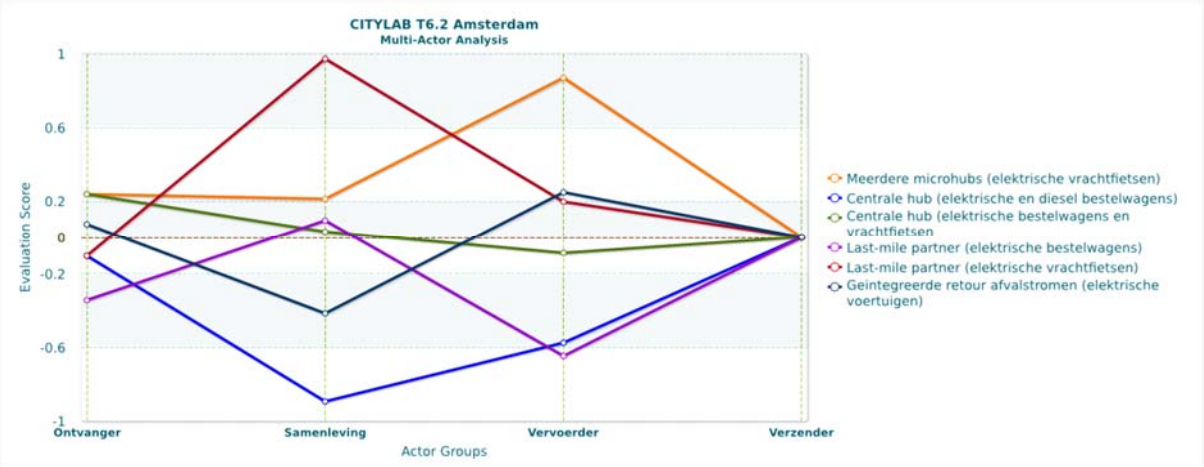
Suggestion: The solution could be well suited for a hospital with decentralised sites if the distribution centre is in an easy accessible location.

Focus on overall stakeholder support

Which Citylab solution could receive overall stakeholder support?

Stakeholder groups: Receiver, Society and Transport operator

During the local MAMCA workshop in Amsterdam, local stakeholders did not only assess Citylab solutions. We used a slightly different set of alternatives because the meeting was set up together with project partners of a Dutch research project on the use of electric light commercial vehicles for urban freight transport at the Amsterdam University of Applied Sciences called LEVV-LOGIC. We compared all Citylab solutions that involve a postal or parcel company and added e-freight bike options if they were not already part of the Citylab solutions. Stakeholders in Amsterdam like both solutions with e-freight bikes: 'multiple microhubs' (orange line) and a 'hub operated by a specialized last-mile partner' (red line). The latter, however, is not highly valued by receivers. They think the solution would not score well on their criteria 'attractive shopping environment and high-quality deliveries' which should be taken into account when implementing the solution. Stakeholders in Amsterdam do not like the alternative with a 'central hub and a combination of diesel and electric vans' (blue line) and they are relatively neutral towards a 'central hub operated with electric vans and e-freight bikes' (green line). The purple line represents the 'hub operated by a specialized last-mile partner with electric vans' alternative and the cyan line represents the 'Integrated reverse logistics' alternative.



Transferability of Citylab solutions to Brussels

Chances of successful transfer of Citylab solutions to Brussels

Compared to the other Citylab cities, **chances for a successful transfer of the Citylab solutions to Brussels are low**. Only 29% of the factors needed to successfully implement the Citylab solutions were rated as 'strong support' or 'support'.

Indication of support in Brussels for the 119 factors that are relevant to successfully implement the 7 Citylab solutions

Brussels is ranked 5th or 6th out of six Citylab cities for implementing the other Citylab solutions.

Brussels	1	2	3	4	5	6
City centre micro-hubs and cycle freight deliveries (Amsterdam)	Rome	Oslo	Southampton	Paris	Brussels	London
Common logistics functions for shopping centres (Oslo)	Rome	Paris	Southampton	Amsterdam	Brussels	London
Growth of consolidation and electric vehicle use (London)	Oslo	Paris	Rome	Southampton	Amsterdam	Brussels
Integration of direct and reverse logistcs flows (Rome)	London	Paris	Oslo	Southampton	Amsterdam	Brussels
Joint procurement and consolidation for large public institutions (Southampton)	London	Amsterdam	Oslo	Rome	Paris	Brussels
Logistics hotels to counter logistics sprawl (Paris)	Southampton	Amsterdam	Rome	Oslo	Brussels	London

More support for three important success factors would significantly increase the chance for successful transfer of certain Citylab implementations to Brussels:

- Measures to reduce the price gap between clean vehicles and conventional vehicles would increase the chance for successful transfer of the solutions from Southampton (Joint procurement and consolidation for large public institutions) and Paris (Logistics hotels to counter logistics sprawl).
- Extensive refuelling/recharging networks for alternatively fuelled vehicles and measures to reduce charging times for commercial electric vehicles would increase the chance for successful transfer of the solutions from London (Growth of consolidation and electric vehicle use) and Southampton (Joint procurement and consolidation for large public institutions).
- Better partnerships and collaboration within supply chains would increase the chance for successful transfer of the solutions from Rome (Integration of direct and reverse logistics flows) and Paris (Logistics hotels to counter logistics sprawl).

Focus on user acceptance

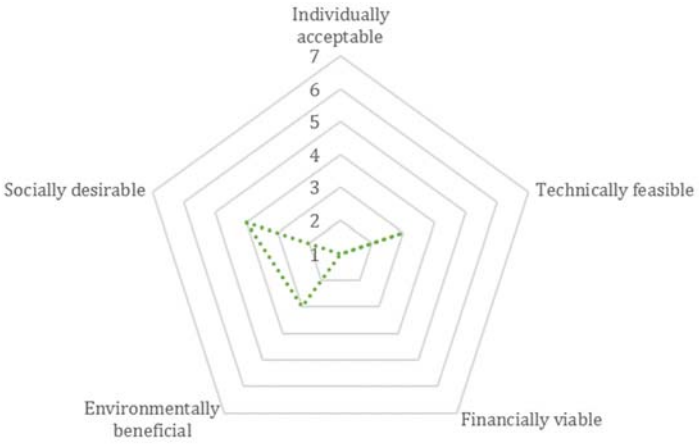
Do local users confirm that the Paris solution (Logistics hotels to counter logistics sprawl) is suited for a transfer to Brussels?

Evaluator(s): Head of supply chain for a non-food retailer. He evaluated the logistics hotel solution as if they would outsource

Evaluated concept: Non-food retailer outsources large B2C shipments to a transport company that uses a logistics hotel located in Brussels instead of delivering themselves. The assumption is that the transport company would then combine its regular volume for Brussels with the volume of the retailer. Small parcels are already outsourced to a courier, express and parcel company (CEP).

The retailer does not see added value in this solution for multiple reasons. First, the financial viability of the solution is put in doubt because of the high prices for centrally located land and real estate and for electric vehicles and because of the extra transhipment cost. Second, the retailer believes that the solution is technically challenging because there are currently no affordable electric vehicles on the

market that can transport ‘larger than parcel’ shipments and because these large shipments are difficult to consolidate with the regular volume of a CEP service provider. These technical challenges also limit the expected environmental benefits. Distribution centres of CEP service providers in Belgium are currently located close to Brussels which limits the need find a location even closer to Brussels or in Brussels.



Indication of user acceptance in Brussels for the Paris solution (Logistics hotels to counter logistics sprawl)

Suggestion: According to the respondent, the solution can only be beneficial if the CEP service providers in Brussels consolidated their volume in one logistics hotel in Brussels. Only then, the cost increase because of additional handling, environmentally friendly vehicles and centrally located real estate would be covered by cost savings.

Focus on overall stakeholder support

Which Citylab solution could receive overall stakeholder support?

Stakeholder groups: Receiver, Shipper, Society and Transport operator

For the local MAMCA workshop in Brussels, we did not only invite local stakeholders. The workshop was open to representatives of the Citylab transfer cities as well (representatives of local authorities and of the company they are considering replicating one of the Citylab solutions with). The results of the local workshop in Brussels is therefore not an assessment of support for the Citylab solutions by the Brussels stakeholders. During the workshop in Brussels, no representative of stakeholder group ‘shopping centre owner’ was present, which is why we used the MAMCA analysis from Citylab D5.4 which is based on the preferences of the shopping centre owner in Oslo and on the evaluation done for Oslo where this solution was implemented.

Receivers, shippers and transport operators prefer the Brussels solution (Increasing vehicle loading by utilising spare capacity – Blue line). Next to that, receivers also like the Oslo solution (Common logistics functions for shopping centres – Purple line). They prioritize on ‘low costs’ and ‘high quality deliveries’. Shippers and transport operators also like the Rome solution (Integration of direct and reverse logistics flows – Petrol blue line) because they think it would address their priority of minimizing costs. They all do not like the alternatives for parcel deliveries i.e. London (Growth of consolidation and electric vehicle use – Green line), Paris (Logistics hotels to counter logistics sprawl – Red line), and Amsterdam (City centre micro-hubs and cycle freight deliveries – Orange line). Society has a different point of view: they like the alternatives for parcel deliveries and do not like the three other alternatives. Their top priority is road safety. The other four criteria (fluent traffic, attractive shopping environment, air quality and low exposure to noise) are equally important to them.


CITYLAB T6.2 Transfer cities
Multi-Actor Analysis
Evaluation Score
1
0.6
0.2
0
-0.2
-0.6
-1
Receiver
Shipper
Shopping centre owner
Society
Transport Operator
Actor Groups
E-freight bikes and microhubs
Online shop and use of spare capacity
Last-mile carrier and electric vans
Common logistics in shopping centre
Urban warehouse and electric vans (25%)
Integrated reverse logistics

Transferability of Citylab solutions to London

Chances of successful transfer of Citylab solutions to London

Conditions in London for a successful transfer of the Citylab solutions are less promising than in other Citylab cities. Almost 40% of the factors needed to successfully implement the Citylab solutions were rated as 'strong support' or 'support'. Conditions in London are very good to implement:

_ Electric and other alternatively-fuelled goods vehicles

Indication of support in London for the 119 factors that are relevant to successfully implement the 7 Citylab solutions

London is the best Citylab city for implementing the solutions of Southampton (Joint procurement and consolidation for large public institutions) and of Rome (Integration of direct and reverse logistics flows). Compared to the other Citylab cities, the chances of successful implementation of the solutions of Amsterdam (City centre micro-hubs and cycle freight deliveries), Oslo (Common logistics functions for shopping centres) and Paris (Logistics hotels to counter logistics sprawl) are low.

London	1	2	3	4	5	6
City centre micro-hubs and cycle freight deliveries (Amsterdam)	Rome	Oslo	Southampton	Paris	Brussels	London
Common logistics functions for shopping centres (Oslo)	Rome	Paris	Southampton	Amsterdam	Brussels	London
Increasing vehicle loading by utilising spare capacity (Brussels)	Paris	Oslo	Rome	London	Southampton	Amsterdam
Integration of direct and reverse logistcs flows (Rome)	London	Paris	Oslo	Southampton	Amsterdam	Brussels
Joint procurement and consolidation for large public institutions (Southampton)	London	Amsterdam	Oslo	Rome	Paris	Brussels
Logistics hotels to counter logistics sprawl (Paris)	Southampton	Amsterdam	Rome	Oslo	Brussels	London

More support for three important success factors would significantly increase the chance for successful transfer of multiple Citylab implementations to London:

_ Possibility for industry to obtain an appropriate location for a consolidation centre and to use existing depot/warehouse space to reduce capital costs

_ Possibility for carriers to know about future demand for transport in advance

_ Sufficient availability of a wide range of vehicle types by vehicle manufacturers

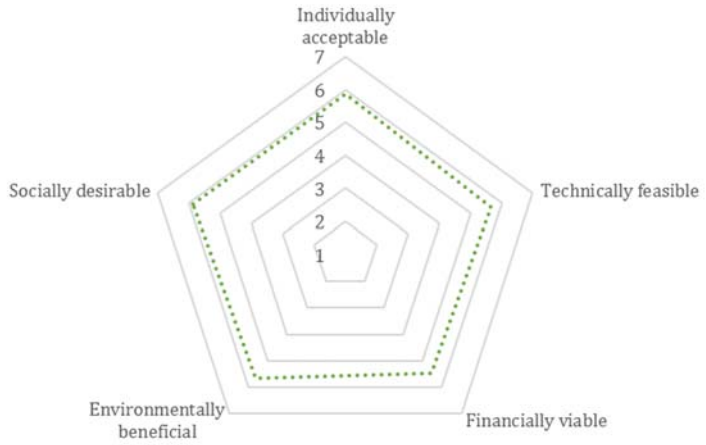
Focus on user acceptance

Do local users confirm that the Rome solution (Integration of direct and reverse logistics flows) is suited for a transfer to London?

Evaluator(s): 7 students and 2 researchers at the University of Westminster (London).

Evaluated concept: Providing an eco-friendly system for collecting recyclable materials at the University of Westminster (London). The national postal operator would pick up full boxes during its regular transportation route while delivering mail/parcels to the university and deliver them to a central collection point.

The survey revealed that, in general, there is a good perception and evaluation of almost every aspect considered (individual acceptability, technical and financial feasibility, environmental impact and social desirability). Respondents believe that the proposed solution would increase the amount of collected recycling materials and that the system could be extended outside the University of Westminster (e.g. to companies and other large buildings (hospitals, public sector buildings, shopping centres, sports stadia and other large buildings) or in the street). They also believe that the system could be extended to other recyclable materials like waste food and electronics.



Indication of user acceptance in London for the Rome solution (Integration of direct and reverse logistics flows)

Suggestion: The general enthusiasm towards the initiative is confirmed by the amount of suggestions provided in the last section. Interviewees indicate possible extensions of the initiative to other logistics service operators and proposals to improve the system, from general considerations (e.g. motivation for the initiative, sponsorship) to more detailed ones both for collection points (e.g. detailed information about bins location) and the delivery service (e.g. avoiding work overtime for the driver and re-organization of the working people, since the two services are different).

Focus on overall stakeholder support

Which Citylab solution could receive overall stakeholder support?

Stakeholder groups: Receiver, Shipper, Society and Transport operator

For stakeholders in London, there is not one solution that would receive overall stakeholder support. There is consensus on the fact that the Brussels (Increasing vehicle loading by utilising spare capacity – Green line) and Rome (Integration of direct and reverse logistics flows – Yellow line) solutions are not favourable. All participating stakeholders have a different preferred solution. Transport operators assess that business-as-usual would be better for them tan all proposed Citylab solutions. Their priority is to have viable investments and they assess that all alternatives would score worse compared to business-as-usual. Receivers and shippers like the Paris solution (Logistics hotels to counter logistics sprawl – Petrol blue) but society and transport operators are not so keen on this solution. Society prefers the Amsterdam solution (City centre micro-hubs and cycle freight deliveries – Blue line) because it is expected to score well on their two most important criteria: air quality and road safety. Shopping centre owners were not represented during the workshop which is why their point of view is not depicted.


CITYLAB T6.2 London
Multi-Actor Analysis
Evaluation Score
0.1
0.08
0.06
0.04
0.02
0
Receiver
Shipper
Shopping centre owner
Society
Transport Operator
Actor Groups
Baseline
E-freight bikes and microhubs
Online shop and use of spare capacity
Last-mile carrier and electric vans
Common logistics in shopping centre
Urban warehouse and electric vans (25%)
Integrated reverse logistics

Transferability of Citylab solutions to Oslo

Chances of successful transfer of Citylab solutions to Oslo

In general, there are **high chances for a successful transfer of the Citylab solutions to Oslo.** Almost 60% of the factors needed to successfully implement the Citylab solutions were rated as 'strong support' or 'support'. Conditions in Oslo are very good to implement:

_ Cargo cycles for freight

_ Common internal logistics for a major multi-tenanted building/area

_ Partnerships in supply chains

Indication of support in Oslo for the 119 factors that are relevant to successfully implement the 7 Citylab solutions

Oslo is the best Citylab city for implementing the solution of London (Growth of consolidation and electric vehicle use) and second best for implementing the solutions of Amsterdam (City centre micro-hubs and cycle freight deliveries) and Brussels (Increasing vehicle loading by utilising spare capacity).

Oslo	1	2	3	4	5	6
City centre micro-hubs and cycle freight deliveries (Amsterdam)	Rome	Oslo	Southampton	Paris	Brussels	London
Growth of consolidation and electric vehicle use (London)	Oslo	Paris	Rome	Southampton	Amsterdam	Brussels
Increasing vehicle loading by utilising spare capacity (Brussels)	Paris	Oslo	Rome	London	Southampton	Amsterdam
Integration of direct and reverse logistcs flows (Rome)	London	Paris	Oslo	Southampton	Amsterdam	Brussels
Joint procurement and consolidation for large public institutions (Southampton)	London	Amsterdam	Oslo	Rome	Paris	Brussels
Logistics hotels to counter logistics sprawl (Paris)	Southampton	Amsterdam	Rome	Oslo	Brussels	London

More support for two important success factors would significantly increase the chance for successful transfer of multiple Citylab implementations to Oslo:

_ City access regulations/regulatory support for clean vehicles would facilitate successful implementation of the solutions from Amsterdam (City centre micro-hubs and cycle freight deliveries), London (Growth of consolidation and electric vehicle use), Paris (Logistics hotels to counter logistics sprawl), Rome (Integration of direct and reverse logistics flows) and Southampton (Joint procurement and consolidation for large public institutions).

_ Many of the Citylab solutions are suitable for operations that are not subject to complex scheduling constraints. A focus on this type of operations would significantly increase the chance for successful transfer of several Citylab implementations.

Focus on user acceptance

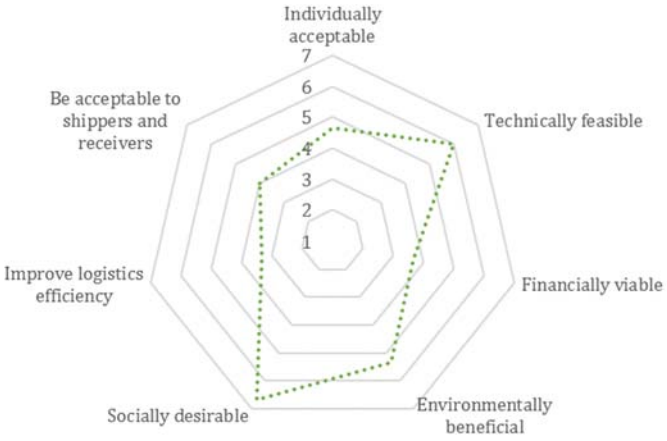
Do local users confirm that the London solution (Growth of consolidation and electric vehicle use) is suited for a transfer to Oslo?

Evaluator(s): Representatives of a large transport operator, a small transport operator and the municipality of Oslo.

Evaluated concept: A large transport operator delivers his parcels destined for Oslo to a local transport company that operates a depot in central Oslo. The local operator makes the final deliveries to customers by means of electric vehicles.

There is no consensus among evaluators. The municipality of Oslo are very positive about the solution. The small transport operator has doubts, mainly about the economic aspects of the solution i.e. financial viability and logistics efficiency improvement. Social and environmental benefits are expected, while the technical feasibility is not into question at all. The large transport operator (DB Schenker Norway) is the most sceptical, appreciating the solution only in terms of its technical feasibility and social desirability.

The opposite public and private view confirms not only the importance and need of both self-financial sustainability and efficiency of the business model, but also the public interest on the environmental concern. Norwegian respondents highlight the fact that, since Oslo is much smaller than London, the solution proposed could be less effective, not only because the main logistics companies in Oslo are closer to the city centre, but also because the big players would rather have proper infrastructure to facilitate zero emission vehicles than to use an additional transhipment facility closer to the city centre.



Indication of user acceptance in Oslo for the London solution (Growth of consolidation and electric vehicle use)

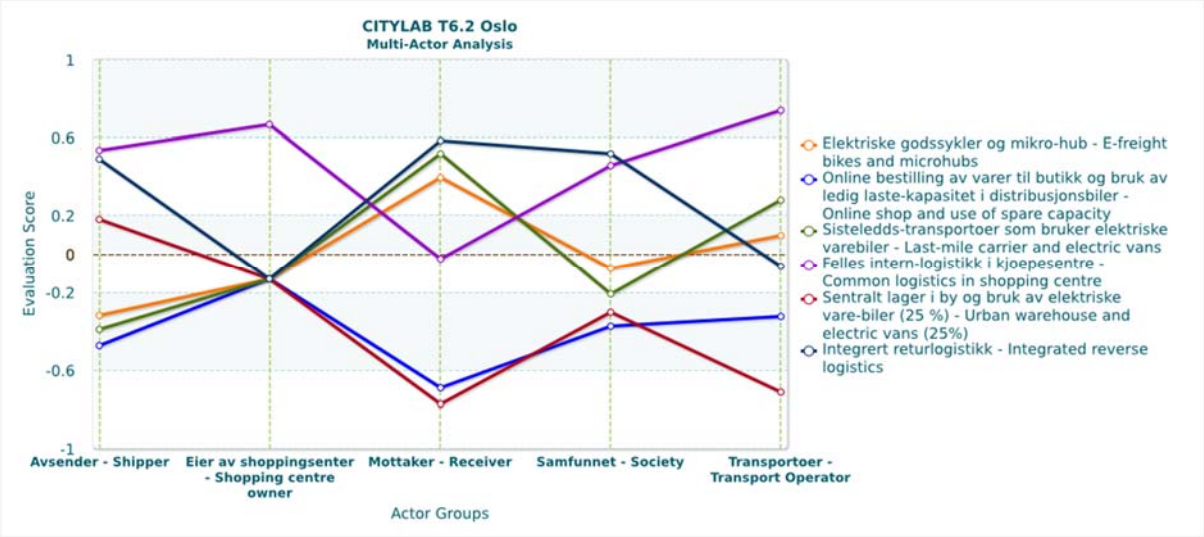
Suggestion: Both logistics operators agreed upon the fact that the solution proposed could be less effective for two main reasons: 1) the goods terminals of the main logistics companies are not located that far from the city centre (i.e. a new depot is not a priority); 2) many delivery vehicles of the big players are already expected to be zero emission in the future. Therefore, they instead hope for a fine-tuned city logistics legislation and dedicated parking places where it is possible to recharge the electric vehicles. On this subject, the city representative seems to be very helpful, even if he relates to "Construction and purchasing" which should be made by municipal agencies. In more technical detail, the big operator highlights two side effects: on one side, vehicle mileage could unexpectedly increase due to the new need of dividing deliveries by size and weight of goods; on the other side, the risk of damaging the goods also increases with the number of transhipment points and handling of goods during transportation.

Focus on overall stakeholder support

Which Citylab solution could receive overall stakeholder support?

> *Stakeholder groups: Receiver, Shipper, Shopping Centre Owner, Society and Transport operator*

For stakeholders in Oslo, two alternatives stand out. First, the Rome solution (Integration of direct and reverse logistics flows – Petrol blue line) appears to be appealing to shippers, receivers and society. Only transport operators do not favour the alternative because they think it is not cost efficient which is their top priority. They even assess that it would be worse for them than business-as-usual. Shopping centre owners are not impacted by this reverse logistics alternatives. For them, all alternatives score much lower than the one alternative that impacts them i.e. the Oslo solution (Common logistics functions for shopping centres – Purple line). Second, the Oslo solutions scores well for all stakeholders, except for receivers. Their most important criterion is to have an attractive shopping environment and they believe that a common logistics function would not contribute to that. Two solutions would be worse than business-as-usual for all stakeholders (according to their own assessments): the Brussels solution (Increasing vehicle loading by utilising spare capacity – Blue line) and the Paris solution (Logistics hotels to counter logistics sprawl – Red line).


CITYLAB T6.2 Oslo
Multi-Actor Analysis
Evaluation Score
1
0.6
0.2
0
-0.2
-0.6
-1
Avsender - Shipper
Eier av shoppingsenter - Shopping centre owner
Mottaker - Receiver
Samfunnet - Society
Transportoer - Transport Operator
Actor Groups
Elektriske godssykler og mikro-hub - E-freight bikes and microhubs
Online bestilling av varer til butikk og bruk av ledig laste-kapasitet i distribusjonsbiler - Online shop and use of spare capacity
Sisteledds-transportoer som bruker elektriske varebiler - Last-mile carrier and electric vans
Felles intern-logistikk i kjoepesentre - Common logistics in shopping centre
Sentralt lager i by og bruk av elektriske vare-biler (25 %) - Urban warehouse and electric vans (25%)
Integrert returlogistikk - Integrated reverse logistics

Transferability of Citylab solutions to Paris

Chances of successful transfer of Citylab solutions to Paris

In general, there are **high chances for a successful transfer of the Citylab solutions to Paris**. Just over 50% of the factors needed to successfully implement the Citylab solutions were rated as 'strong support' or 'support'. Conditions in Paris are very good to implement:

_ Urban distribution property and land use planning interventions

Indication of support in Paris for the 119 factors that are relevant to successfully implement the 7 Citylab solutions

Paris is the best Citylab city for implementing the solution of Brussels (Increasing vehicle loading by utilising spare capacity) and second best for implementing the solutions of London (Growth of consolidation and electric vehicle use), Oslo (Common logistics functions for shopping centres) and Rome (Integration of direct and reverse logistics flows). Compared to the other Citylab cities, the chances of successful implementation of the solution from Southampton (Joint procurement and consolidation for large public institutions) are low.

Paris	1	2	3	4	5	6
City centre micro-hubs and cycle freight deliveries (Amsterdam)	Rome	Oslo	Southampton	Paris	Brussels	London
Common logistics functions for shopping centres (Oslo)	Rome	Paris	Southampton	Amsterdam	Brussels	London
Growth of consolidation and electric vehicle use (London)	Oslo	Paris	Rome	Southampton	Amsterdam	Brussels
Increasing vehicle loading by utilising spare capacity (Brussels)	Paris	Oslo	Rome	London	Southampton	Amsterdam
Integration of direct and reverse logistcs flows (Rome)	London	Paris	Oslo	Southampton	Amsterdam	Brussels
Joint procurement and consolidation for large public institutions (Southampton)	London	Amsterdam	Oslo	Rome	Paris	Brussels

More support for two important success factors would significantly increase the chance for successful transfer of the Amsterdam (City centre micro-hubs and cycle freight deliveries), London (Growth of consolidation and electric vehicle use) and Oslo (Common logistics functions for shopping centres) solutions to Paris:

_ Measures that help companies to keep capital costs to a minimum

_ Having appropriate locations for consolidation centres

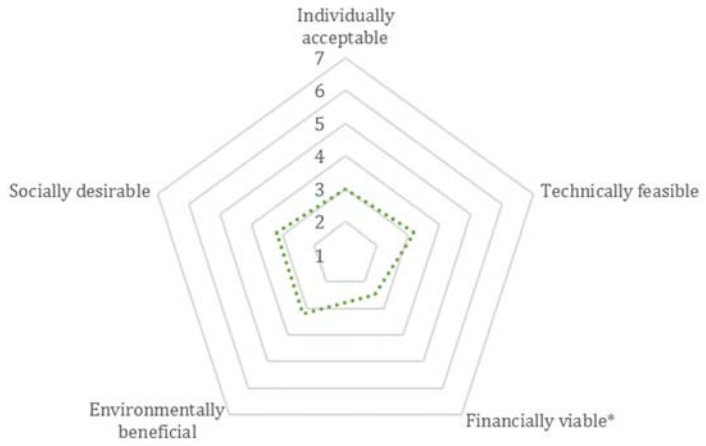
Focus on user acceptance

Do local users confirm that the Brussels solution (Increasing vehicle loading by utilising spare capacity) is suited for a transfer to Paris?

Evaluator(s): Five store owners in different arrondissements of the city. Most shops in Paris already are being delivered and do not pick-up their goods at a wholesaler. To evaluate support for this solution among Paris store owners, we selected owners who (partly) do their own pick-ups. Most of the respondents (4 out of 5) get all the merchandise through pick-ups at a wholesaler. The fifth respondent has been franchised a few years ago and gets 70% of the goods delivered by a distributor. The goods he receives are transported by heavy goods vehicles. He receives them three times a week at 8am. Despite the short time needed for unloading and delivering, the store owner considers the transport of these goods as a cost. The fifth respondent goes to a wholesaler for the remaining 30%. All five respondents go to Metro for their pick-ups at a wholesaler (all of them), 60% goes to Rungis for fresh goods and 20% goes to a smaller wholesaler (Omran). They use their own vehicle to go to the wholesaler and do it once or twice a week, usually on Monday morning, spending 2 or 3 hours at the wholesaler. Although two out five have to close their shops to go to the wholesaler, none of them considers these purchasing trips as a cost.

Evaluated concept: A multinational company offers the possibility to order products online and have them delivered to stores at a competitive price so to decrease the number of trips currently made to the wholesaler or to the retailer.

In general, there is strong opposition against the initiative among the interviewed shop owners. Most of them (4 out of 5) would be willing to order some of their merchandise online if the product cost would be the same. Only two out of five would be willing to pay for being delivered and one of them even feels that the shipper should pay him for the delivery. When asked about their willingness to tell others about this solution, only one shopkeeper replied positively. Despite a similar evaluation by respondents in Paris and Brussels, the solution does not seem to be fit for Paris. Most of the Parisian store owners already order online and are being delivered in their store (which is not the case in Brussels) and traditional independent grocery store are being replaced by retail chains with organised supply chains.



Indication of user acceptance in Paris for the Brussels solution (Increasing vehicle loading by utilising spare capacity)

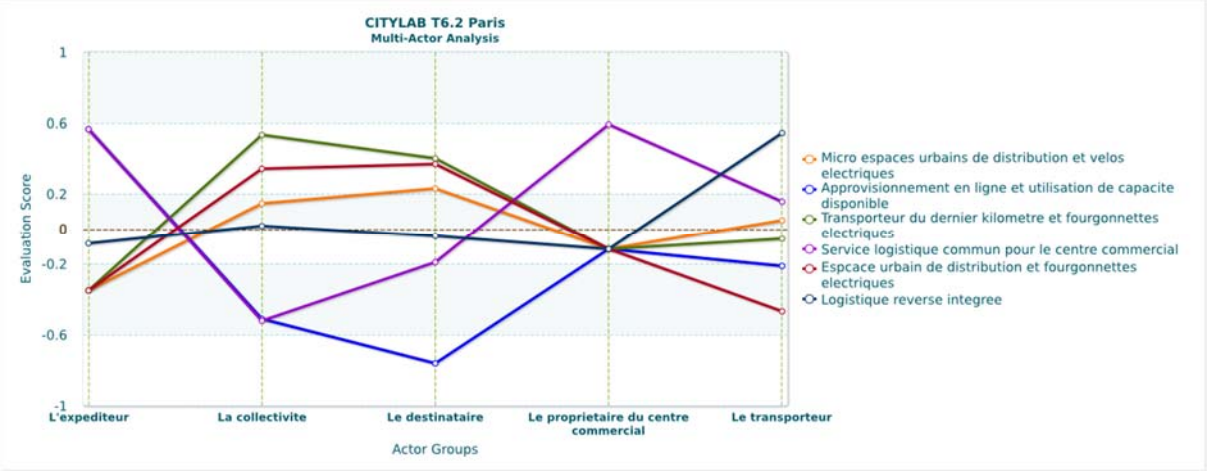
Suggestion: This initiative would only be attractive to store owners if product prices were extremely competitive.

Focus on overall stakeholder support

Which Citylab solution could receive overall stakeholder support?

Stakeholder groups: Shipper, Society and Transport operator

In Paris, society and receivers shared the same point of view. They both assess that the Paris solution (Logistics hotels to counter logistics sprawl – Red line), the London solution (Growth of consolidation and electric vehicle use – Green line) and the Amsterdam solution (City centre micro-hubs and cycle freight deliveries – Orange line) would serve them best. Receivers expect that these solutions would score well on their top priority: high quality deliveries. Society thinks these solutions are better for air quality than the other Citylab solutions and business-as-usual. Shippers dislike these three solutions. They prefer the Oslo solution (Common logistics functions for shopping centres – Purple line) because it would allow them to provide better quality deliveries to their customers. Transport operators also like this solution, but even prefer the Rome solution (Integration of direct and reverse logistics flows – Petrol blue line) because of the expected viable investment. During the workshop in Paris, there were no representatives of stakeholder group Shopping Centre Owner which is why we used the MAMCA analysis of Citylab D5.4 to in this visualisation. There were also no representatives of stakeholder group Receiver. All participants discussed together how they believe receivers would perceive the solutions and how they would value their criteria.

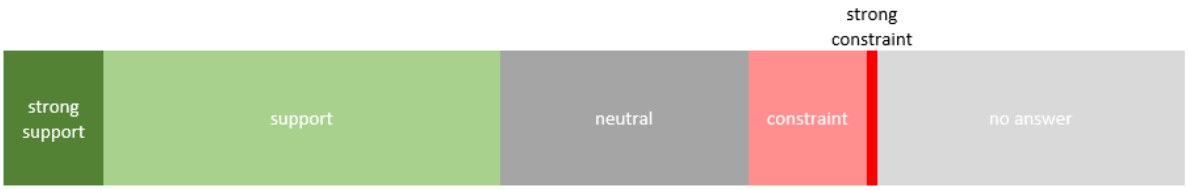


Transferability of Citylab solutions to Rome

Chances of successful transfer of Citylab solutions to Rome

Conditions in Rome **for a successful transfer of the Citylab solutions are quite good** compared to the other Citylab cities. Just over 40% of the factors needed to successfully implement the Citylab solutions were rated as 'strong support' or 'support'. Conditions in Rome are very good to implement:

_ Improving load carried on goods vehicles (vehicle fill and return loads/empty running



Indication of support in Rome for the 119 factors that are relevant to successfully implement the 7 Citylab solutions

Rome is the best Citylab city for implementing the solutions of Amsterdam (City centre micro-hubs and cycle freight deliveries) and Oslo (Common logistics functions for shopping centres). There are average chances for successful transfer of the solutions from Brussels (Increasing vehicle loading by utilising spare capacity), London (Growth of consolidation and electric vehicle use) and Paris (Logistics hotels to counter logistics sprawl).

Rome	1	2	3	4	5	6
City centre micro-hubs and cycle freight deliveries (Amsterdam)	Rome	Oslo	Southampton	Paris	Brussels	London
Common logistics functions for shopping centres (Oslo)	Rome	Paris	Southampton	Amsterdam	Brussels	London
Growth of consolidation and electric vehicle use (London)	Oslo	Paris	Rome	Southampton	Amsterdam	Brussels
Increasing vehicle loading by utilising spare capacity (Brussels)	Paris	Oslo	Rome	London	Southampton	Amsterdam
Joint procurement and consolidation for large public institutions (Southampton)	London	Amsterdam	Oslo	Rome	Paris	Brussels
Logistics hotels to counter logistics sprawl (Paris)	Southampton	Amsterdam	Rome	Oslo	Brussels	London

Three success factors would significantly increase the chance of having more electric and alternatively-fuelled goods vehicles in Rome:

_ Regulatory vehicle emission standards

_ City access regulations/regulatory support for clean vehicles

_ Availability of refuelling/recharging networks.

Additional to the recommendations given above, it is recommended to Rome to identify and protect areas for urban distribution activities in the city centre. This would increase the chance for successful transfer of the Citylab implementations from London (Growth of consolidation and electric vehicle use) and Paris (Logistics hotels to counter logistics sprawl).

Focus on user acceptance

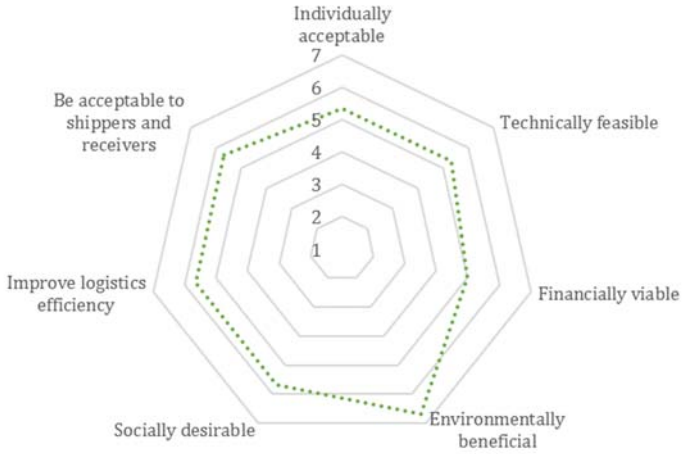
Do local users confirm that the Amsterdam solution (City centre micro-hubs and cycle freight deliveries) is suited for a transfer to Rome?

Evaluator(s): Representatives of Poste Italiane, of a shipper that is a customer of Poste Italiane customer and of the Municipality of Rome

Evaluated concept: National postal operator Poste Italiane would deliver its parcels by means of freight bikes from micro-hubs in central Rome instead of delivering them by van from one single warehouse outside Rome.

Today, Poste Italiane daily transports 8.000 to 10.000 parcels in and out of Rome. They use diesel fuelled Euro 5/6 Fiat Pandas for that. On a weekly basis, around 16.000 km are travelled using 200 litres of fuel. The overall perception of the initiative is positive. Only the financial viability is questioned. According to the shipper, no one else should pay for having the solution implemented, while Poste Italiane thinks the solution will be more expensive and feels the municipality should subsidise them for

implementing this environmentally friendly solution. The municipality agrees, but is doubtful on how to identify how large their contribution should be.



Indication of user acceptance in Rome for the Amsterdam solution (City centre micro-hubs and cycle freight deliveries)

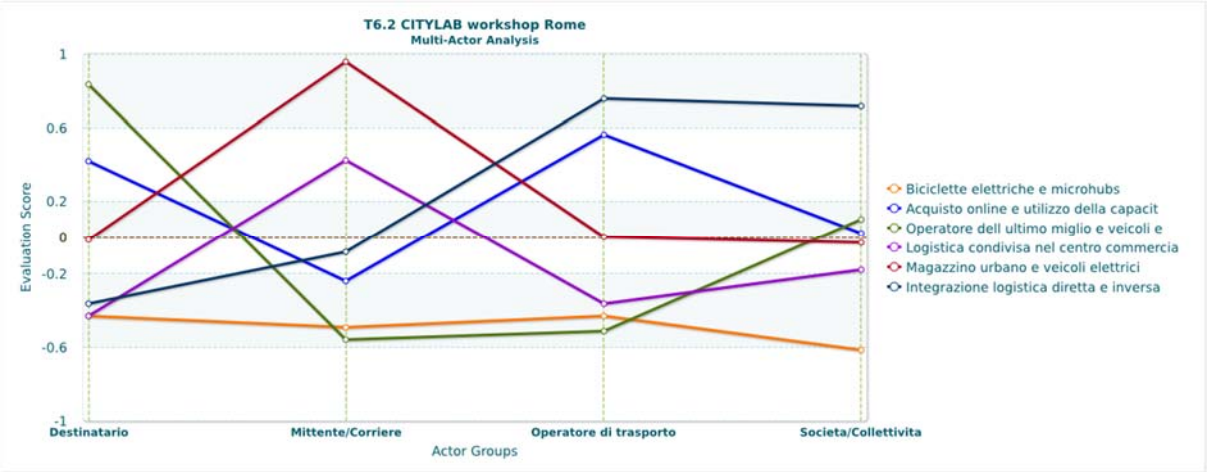
Suggestion: To guarantee success for this solution, the cycling lane system in Rome should be improved.

Focus on overall stakeholder support

Which Citylab solution could receive overall stakeholder support?

Stakeholder groups: Receiver, Shipper, Society and Transport operator

During the local MAMCA workshop in Rome, there was no alternative that would receive overall stakeholder support. Society and transport operators prefer the Rome solution (Integration of direct and reverse logistics flows – Petrol blue line). They both assess that this solution would score well on all their criteria. Shippers clearly prefer the Paris solution (Logistics hotels to counter logistics sprawl – Red line), but this was only the third or even fourth preferred option of the other groups. Receivers prefer the London solution (Growth of consolidation and electric vehicle use – Green line) but this is the least preferred option of shippers and transport operators. Priority of receivers in Rome is to have high quality deliveries at a fair price.



Transferability of Citylab solutions to Southampton

Chances of successful transfer of Citylab solutions to Southampton

In general, **the conditions in Southampton for a successful transfer of the Citylab solutions are quite good** compared to the other Citylab cities**.** Almost 40% of the factors needed to successfully implement the Citylab solutions were rated as 'strong support' or 'support'. Conditions in Southampton are very good to implement:

_ Urban consolidation centres/mobile depots

_ Electric and other alternatively-fuelled goods vehicles

_ Urban distribution property and land use planning interventions

_ Non-road modes

Indication of support in Southampton for the 119 factors that are relevant to successfully implement the 7 Citylab solution

Amsterdam is the best Citylab city for implementing the solutions of Amsterdam (City centre micro-hubs and cycle freight deliveries). Compared to the other Citylab cities, the chances of successful implementation of the solutions of Brussels (Increasing vehicle loading by utilising spare capacity) are low.

Southampton	1	2	3	4	5	6
City centre micro-hubs and cycle freight deliveries (Amsterdam)	Rome	Oslo	Southampton	Paris	Brussels	London
Common logistics functions for shopping centres (Oslo)	Rome	Paris	Southampton	Amsterdam	Brussels	London
Growth of consolidation and electric vehicle use (London)	Oslo	Paris	Rome	Southampton	Amsterdam	Brussels
Increasing vehicle loading by utilising spare capacity (Brussels)	Paris	Oslo	Rome	London	Southampton	Amsterdam
Integration of direct and reverse logistcs flows (Rome)	London	Paris	Oslo	Southampton	Amsterdam	Brussels
Logistics hotels to counter logistics sprawl (Paris)	Southampton	Amsterdam	Rome	Oslo	Brussels	London

Many of the Citylab solutions are suitable for goods that are not time-critical and for operations that are not subject to complex scheduling constraints. A focus on these types of goods and operations would significantly increase the chance for successful transfer of the Citylab implementations from Brussels (Increasing vehicle loading by utilising spare capacity), London (Growth of consolidation and electric vehicle use), Oslo (Common logistics functions for shopping centres), Paris (Logistics hotels to counter logistics sprawl) and Rome (Integration of direct and reverse logistics flows) to Southampton.

Focus on user acceptance

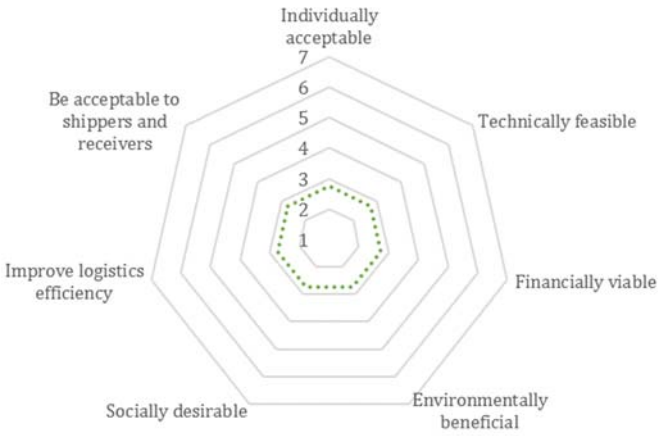
Do local users confirm that the Oslo solution (Common logistics functions for shopping centres) is suited for a transfer to Southampton?

Evaluator(s): Six representatives of shops belonging to a retail chain located in the West Quay shopping centre in Southampton have been interviewed.

Evaluated concept: A common logistic function at the West Quay shopping centre in Southampton. The solution will also offer collection and transport of waste from the shops, reverse logistics and use of buffer storage for shorter storage of shipments. Consolidation options for logistic service providers as well as opportunities for out-of-hours deliveries will be identified, resulting from the decoupling of external and in-house transport legs of the supply chain to the shopping centre.

None of the shops has a storage room inside the shop. Shipments for one shop are delivered at the unloading ramp. The other five receive their goods directly at the shop. Four shops receive 2 shipments per week; the two other shops receive 3 and 5 shipments respectively. No shipments are delivered on Saturday. Most shipments are not delivered at regular times but the interviewees stated that they usually

receive information on time of delivery beforehand. Delivery people spend between 5 minutes and several hours in their shop when delivering, depending on the type of shipment and volume. Today, there is no integrated system of direct and reverse logistics: logistics service providers do not take waste out of the shop when delivering goods. It means that all shops are obliged to organise waste transport themselves. Two out of six interviewees did not want to give an opinion on this new solution. They felt the head office of their retail chain should do that. The other four provided different answers to the survey questions ranging from extreme disagreement to extreme agreement in terms of "individual acceptability", "technical feasibility", "financial viability", "social desirability" and the perception of the solution as "environmentally beneficial". Three out of four are rather negative and nobody is willing to pay for the solution.



Indication of user acceptance in Southampton for the Oslo solution (Common logistics functions for shopping centres.

Suggestion: Recommendation to consider the security of the shipments.

Focus on overall stakeholder support

Which Citylab solution could receive overall stakeholder support?

Stakeholder groups: Receiver, Society and Transport operator

Also for this workshop, it appeared to be challenging to find shippers willing to participate. They cancelled closely prior to the workshop which is why we left them out of the exercise and scores are not displayed in the figure below. We knew beforehand that there was not going to be a shopping centre owner present, so we used the MAMCA analysis from Citylab D5.4 for this stakeholder. Receivers and transport operators in Southampton prefer the same three solutions: Rome (Integration of direct and reverse logistics flows – Petrol blue line), Oslo (Common logistics functions for shopping centres – Purple line) and London (Growth of consolidation and electric vehicle use – Green line). Receivers clearly prefer the London solution and think it would score well on all their criteria, transport operators the other two, mainly because they think these two are the most profitable solutions for them. Society has a different opinion: they prefer the Amsterdam solution (City centre micro-hubs and cycle freight deliveries – Orange line) and the Paris solution (Logistics hotels to counter logistics sprawl – Red line). They value road safety and low exposure to noise and think these solutions would achieve that. Receivers and transport operators, on the other hand, consider these two to be the worst two alternatives which makes it difficult to reach consensus. None of them like the Brussels solution (Increasing vehicle loading by utilising spare capacity – Blue line).


CITYLAB T6.2 Southampton
Multi-Actor Analysis
Evaluation Score
1
0.6
0.2
0
-0.2
-0.6
-1
Receiver
Shipper
Shopping centre owner
Society
Transport Operator
Actor Groups
E-freight bikes and microhubs
Online shop and use of spare capacity
Last-mile carrier and electric vans
Common logistics in shopping centre
Urban warehouse and electric vans (25%)
Integrated reverse logistics