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Assessment of roll-out potential of CITYLAB solutions to other CITYLAB living labs

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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
Randstat	Gemeente Rotterdam	PostNL	TNO
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Executive summary

This report analyses to what extent the seven CITYLAB implementations may be successfully transferred from their original implementation city to other CITYLAB cities. CITYLAB supports seven Living Labs where innovative urban freight measures are implemented, analysed and rolled out. The focus of this report is to clarify ‘if’ and ‘how’ the seven implementations can be transferred and scaled to the other CITYLAB cities. The CITYLAB cities will learn from Deliverable 5.6 which implementations may be transferred to their own context. Furthermore, they will gain understanding in possibilities to improve the conditions for better chances of a successful transfer of CITYLAB implementations.

The transferability methodology adopted in TIDE has been taken as the basis for the CITYLAB methodology as it is the most developed and most relevant to CITYLAB. An appropriate 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

The summarized results of the CITYLAB transferability analysis are shown in the chart overview. The ranking shows for each implementation in which CITYLAB city the chance for successful transfer is the best.

For the CITYLAB city London the best chance for successful transfer is given for the Southampton implementation. For the CITYLAB city Amsterdam there are relatively good chances for a successful transfer of the CITYLAB solutions in Southampton and Paris. The conditions for the transfer of CITYLAB implementations to the CITYLAB city Brussels are well below average for all implementations. For the CITYLAB city Southampton the conditions for a transfer of the Paris implementation are the best compared to all other CITYLAB cities. Thus the chance for successful implementation of the Paris solution is best in Southampton. For the CITYLAB city Oslo there are very good chances for a successful transfer of the London implementation. Even for other implementations the chances for successful transfer to Oslo are comparably good. The context of the CITYLAB city Rome is best suited for successful transfer of the implementations from Amsterdam and Oslo. The conditions in the CITYLAB city Paris are best suited for the successful transfer of the CITYLAB implementation in Brussels. Furthermore the chances for successful transfer of implementations from London, Oslo, and Rome are very good. For each city, success factors have been identified that can help to improve the chance for successful transfer of the implementations and can serve as a basis developing strategic plan on city level.

CITYLAB transferability analysis chart overview

		City						
		London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
Implementation	London		5	6	4	1	3	2
	Amsterdam	6		5	3	2	1	4
	Brussels	4	6		5	2	3	1
	Southampton	1	2	6		3	4	5
	Oslo	6	4	5	3		1	2
	Rome	1	5	6	4	3		2
	Paris	6	2	5	1	4	3	

Overall, however, no general statements on the success factors are possible as, on the one hand, the implementations are very different in the importance of the success factors, and on the other hand, the cities offer very different conditions concerning the support and constraint for the success factors. These differences were very well illustrated by the CITYLAB methodology which exploits a broad selection of success factors.

The CITYLAB approach is suitable to assess transferability of different logistics measures to other cities, and – if necessary – to depict areas, where cities can improve the condition to increase the chance for successful transfer of implementations.

1 Background and objectives

The purpose of this report is to analyse and understand to what extent the seven CITYLAB implementations may be successfully transferred from their original implementation city to other CITYLAB cities. The CITYLAB project supports seven Living Labs where innovative urban freight measures are implemented, analysed and rolled out. The focus of the analyses is to clarify 'if' and 'how' the seven implementations can be transferred and scaled to the other CITYLAB cities. The goal is to apply each implementation at least to one other city. This ambition requires thorough evaluation of the seven Living Lab implementations to learn whether they are satisfactory, or if not what the reasons for the missing success are. The ambition is relevant primarily for the small circle of cities involved in CITYLAB. But the results could be also used as valuable basis to decision making in all other cities who are facing similar Urban Logistics problems, and are willing to develop similar solutions. The CITYLAB cities will learn from Deliverable 5.6 which implementations may be transferred to their own context. Furthermore, they will gain understanding in possibilities to improve the conditions for better chances of a successful transfer of CITYLAB implementations.

Deliverable 5.6 is part of the CITYLAB work package 5, which covers all evaluation activities of the project. CITYLAB's evaluation activities consist of before-and-after assessments for a range of indicators, and five established evaluation methods. These activities will generate lots of information. This information will be made available to people involved in the Living Labs, all CITYLAB partners and followers, and urban freight transport researchers through deliverables, workshops, presentations, and journal or conference papers.

In the CITYLAB project each implementation was applied initially in one living lab. Based on the proof of success conducted in the previous evaluation tasks, the aim is now to transfer solutions to other living labs. Therefore, Deliverable 5.6 is performing a transferability analysis focusing on the potential for rolling out implementations to other CITYLAB cities. This step is based on the entire evaluation process (WP 5) and large parts of the urban freight status mapping (WP 2).

This document introduces the concept of the transferability analysis and gives an overview of the results. Consequently, this deliverable consists of the following sections:

i. **Section 2 – Method of Transferability Analysis** explains the background and the work flow (steps) needed for the transferability analysis applied in CITYLAB.
ii. **Section 3 – Results of Transferability Analysis for CITYLAB implementations** shows in detail the results of each consecutive step of the analysis as well as the derived results with focus on the CITYLAB implementations.
iii. **Section 4 – Transferability of CITYLAB implementations to other CITYLAB cities** will describe the most important findings for each CITYLAB city concerning the chances for successful transfer of other CITYLAB implementations.

This deliverable primarily targets the CITYLAB partners from the municipalities of the participating cities.

2 Method of the transferability analysis

2.1 Transferability analysis – a review

Different European projects have dealt with transferability aspects in recent years. The CIVITAS Programme developed a transferability methodology, which was further refined in TURBLOG. The SUGAR project used another approach to transfer best practices related to urban freight logistics policies of cities and regions, mainly through 'train the trainer' activities, and developments of freight plans. Furthermore, the projects NICHES and NICHES+ considered issues and solutions for effective transferability (see Barrera 2013 and TURBLOG 2011).

The "CIVITAS guide for the Urban Transport Professional" describes the methodology, which was developed in NICHES+ using a six-step approach (see CIVITAS 2012, p. 105). The methodology of NICHES+, which uses results gathered in NICHES, was further developed to a seven steps approach in the project TIDE (see NICHES+ 2011 and TIDE 2013). For CITYLAB we will use the approach described in TIDE as this is the most developed approach. However, further development of this approach was necessary concerning the analysis in the adopter (or transfer) cities.

"Adopter" or "Transfer" cities are defined as the CITYLAB cities potentially adopting a solution previously tested in another CITYLAB city. Other non-CITYLAB cities that were also involved in discussion of potential transfer were called "Follower" cities. Most of the transferability analysis is relevant for both "transfer" and "follower" cities. In the literature, as in this report, all terms "Transfer", "Adopter" or "Follower" city are rather identical, and are mostly used as opposed to "Innovative", "Pilot", "Pioneer" "Experimental" solutions or, by extension, cities where these new solutions are tested.

As can be seen in most early cases of transfer and transfer attempts presented in the literature above, the action of transfer requires additional solutions and strategies. A simple one to one replication is not always easy, and there is in most cases a series of activities complementary to those tested and piloted in original implementation actions.

In the project CITYLAB, as for TURBLOG, "transfer" was understood as the ability to replicate/copy/adopt successfully, in a given city, measures previously tested elsewhere, while achieving comparable results (see Barrera 2013 and TURBLOG 2011).

CITYLAB, as for TIDE (2013, p. 13), defines transferability analysis as the process of verifying the chances of a successful implementation of a measure, which was successfully implemented in a pioneer city, to an adopting city at operational level. This includes the analyses of various influencing factors to provide a sound knowledge on how a city should proceed with the implementation. This is seen as an opportunity to learn lessons from the previous experience to avoid mistakes and better exploit opportunities (TIDE 2012).

2.2 CITYLAB transferability methodology

Of all the transferability methodologies which have been adopted in recent EU projects, the methodology adopted in TIDE is the most developed and most relevant to CITYLAB, and therefore has been taken as the basis for the proposed CITYLAB transferability methodology, described below. The TIDE methodology fits measures and initiatives in urban freight transport most.

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. Thus, an appropriate adjustment of the

TIDE methodology was necessary. STEP 6 and STEP 7 were partly adjusted in order to comply with the CITYLAB requirements. The adjustments are presented at page 8 and page 9 in detail.

The original seven step TIDE transferability methodology is as follows (TIDE 2013, p.14):

STEP 1: Mission statement/objectives and scoping

STEP 2: Clarification of the impacts of the measure

STEP 3: Identification of upscaling/downscaling need

STEP 4: Identification of the main components and characteristics

STEP 5: Identification of the level of importance of characteristics

STEP 6: Assessment of the characteristic in the context of adopter city

STEP 7: Conclusions

According to TIDE, different sources of information are required in order to conduct a proper transferability analysis:

- Literature: Documentations from the project as well as literature on the single implementations are considered as best sources of information relating to the measure for the pioneer city. In CITYLAB, sources of information will mainly be deliverables of other WPs that characterise CITYLAB implementations and the participating cities.
- Interviews: As not all information is published and available from literature, we will rely on contacts to involved actors in CITYLAB living labs as well as in adopter cities.
- Workshops: Input from different stakeholders will be discussed in workshops which were conducted within the CITYLAB project.
- Site visits: Site visits allow gathering first-hand experiences of implementations and their impacts.

The seven consecutive steps of the CITYLAB transferability analysis (adjusted TIDE scheme) are described in detail:

STEP 1: Implementation statement/objectives and scoping

Following the TIDE transferability methodology a clearly defined mission statement (or clear objectives) and a realistic scope for a measure are to be defined in the STEP 1 of a transferability analysis. The statement should avoid misunderstandings during the subsequent transferability and implementation processes. The analysis should only be resumed after the adopter has understood and agreed on the objectives and the scope of the measure.

Accordingly, the defined missions, i.e. implementation statement/objectives, and the scope of the CITYLAB implementations are summarized in STEP 1. Sources are CITYLAB publications about the CITYLAB implementations. Furthermore, relevant information about the implementations is disseminated during CITYLAB workshops to the adopter cities, i.e. the other CITYLAB cities.

STEP 2: Clarification of the impacts of the implementation

STEP 2 provides the justification for the adopter city to apply the implementation by identifying and quantifying its impacts. These impacts are likely to vary according to the measure being analysed for potential transferability. For example, the impacts could include changes in efficiency (capacity, travel time), road safety, environmental issues (emissions, noise, visual intrusion etc.), accessibility, vehicle occupancy, and passenger waiting times.

The impact of the CITYLAB implementations have been identified and quantified in WP 5. In this deliverable summarized results of WP 5 are given.

STEP 3: Identification of upscaling/downscaling needs of implementations

STEP 3 of the transferability analysis describes the importance to determine whether upscaling or downscaling of the measure is required. To give an example: if giving priority to buses (route–based measure) is considered for the application to a whole city then upscaling is required. The potential implications of such scaling needs to be taken into account when carrying out subsequent transferability assessment steps.

Even if there are differences between the measures examined in TIDE and the implementations conducted in CITYLAB, it is important to determine whether the scaling of implementations is necessary. For each CITYLAB implementation findings on the required scaling are described.

STEP 4: Identification of success factors of implementations

According to TIDE in STEP 4, the main components that can contribute to the success (or failure) of a measure are identified so that their relevance to the transferability can be assessed in terms of policy, finance, stakeholder involvement, technical requirements, demographic issues, institutional and legal frameworks. These components are further broken down into TIDE characteristics (or sub components) relevant for the transferability. For example, the characteristics of policy (component) may include: public transport policy, accessibility policy, etc. The identification of components and characteristics of a measure in the context of transferability depends on the experience of the pioneer city. TIDE gives a starting list of components and characteristics which can influence the transferability of a measure. The list of components needs to be adapted and finalised on the basis of available literature or information gathered from the pioneer city.

Deliverable 2.3 (CITYLAB Deliverable 2.3, 2016) identified success factors for logistics initiatives. Furthermore Deliverable 2.3 connects the logistics initiatives with the CITYLAB implementations. Here, the success factors of logistics initiatives of each CITYLAB implementation are compiled according to the outcome of Deliverable 2.3. Thus, for each CITYLAB implementation a set of success factors could be identified.

STEP 5: Identification of the level of importance of success factors

As described in TIDE, this step requires the identification of the relative level of importance (i.e. high/medium/low) of each characteristic. The experience of the pioneer city and advice from the experts are valuable in this process.

In CITYLAB the identification of the success factors for the implementations was derived from data collection in the implementing CITYLAB cities. Research partners together with their respective partners from municipalities and industry were asked to rate the level of importance of each of the 119 success factors. The response options were: Not relevant at all (0), Low importance (1), Medium importance (2), High importance (3), and Essential (4). The results of this data collection are shown in Appendix B.

STEP 6: Assessment of success factors in the context of adopter city

STEP 6 comprises a subjective assessment of the effort, which has to be made for implementing the measures in the context of each adopter city. TIDE suggests discussions with experts and city representatives (pioneer and adopter cities). The assessment should be made using the scale from +2 to –2 as follows: +2 strong support, +1 modest support, 0 no support or no constraints, –1 modest constraint, –2 strong constraints. The results of the survey are figured in Appendix B.

The CITYLAB approach proposes an assessment of the success factors in the context of each adopter city. The assessment is conducted by the CITYLAB research partners in a second survey. The research partners rated together with their respective partners from municipalities statements on success factors with regards to the respective CITYLAB city.

STEP1 to STEP 6 are performed from the perspective of the CITYLAB implementations. STEP 7 is performed from the perspective of the CITYLAB cities.

STEP 7: Conclusions on the transferability of implementations

The final step (STEP 7) of the TIDE transferability approach is to draw conclusions about the potential of transferability through consideration of the rated success factors. Mitigating strategies should be developed in order to overcome the main barriers. In TIDE the decision process was rather basic. In the end there was no final assessment on the transferability given.

The last step of the CITYLAB transferability analysis has to go beyond the TIDE approach as the overall objective of the CITYLAB transferability analysis is to identify which CITYLAB implementation has the potential to be successfully transferred and implemented in other CITYLAB cities. Therefore, a thorough assessment method for this last step of analysis was needed. The applied methodology for this is described below.

As mentioned before, CITYLAB Deliverable 2.3 identified success factors for logistics initiatives. These logistics initiatives are listed in Table 1. The list of success factors for each logistics initiative is shown in Appendix A. All together there are 119 success factors which are relevant for this analysis. The numbering of the initiatives is done similar to Deliverable 2.3 to keep work in the project consistence.

Table 1 – Logistics initiatives

Number of initiative	Title of initiative
4.4	Urban consolidation centres/mobile depots
4.5	Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)
4.6.1	Electric and other alternatively-fuelled goods vehicles
4.6.2	Cargo cycles for freight
4.8	Common internal logistics for a major multi-tenant building or area (including reception and storage facilities and internal logistics)
4.9	Retiming of logistics operations
4.10	Urban distribution property and land use planning interventions
4.11	Non-road modes
4.12	Partnership working in the supply chain operations

These logistics initiatives have been assigned to the CITYLAB implementations in Deliverable 2.3 which is shown in Table 2. During the progress of the project the extent of the implementation in Southampton has been changed. Therefore, the table differs slightly to the one shown in Deliverable 2.3. Originally, the Southampton implementation included the logistics initiatives 4.4, 4.5, 4.6.1, and 4.12.

Table 2 – Logistics initiatives included in the CITYLAB implementations

Number of initiative	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
4.4	x	x			x		x
4.5	x	x	x		x	x	x
4.6.1	x	x		x		x	x
4.6.2		x					
4.8					x		
4.10	x						x
4.11		x					x
4.12	x	x	x		x	x	x

The data analysis was conducted according to the following scheme:

i. The ratings from the perspective of the CITYLAB implementations about the importance of success factors were converted according to the following rule:
   - Not relevant at all 0
   - Low importance 1
   - Medium importance 2
   - High importance 3
   - Essential 4

ii. The rating from the perspective of the CITYLAB cities about the local assessment of the success factors (in terms if there are constraints or support) were converted according to the following rule:
   - strong constraint -2
   - constraint -1
   - neutral 0
   - support 1
   - strong support 2
   - no answer na/0

iii. The score for each success factor was calculated as product of i. and ii. Thus, possible values for each success factor are in the range between -8 and 8.

iv. The results for all success factors for each logistics initiative were accumulated.

v. The maximum and minimum possible score for each logistics initiative for each CITYLAB implementation were calculated, underlying the assumption that all success factors were rated as ‘strong constraint’ or ‘strong support’ respectively.

vi. As the number of success factors for the logistics initiatives are unevenly allocated a normalisation of the ratings was necessary to avoid the over estimation of initiatives with a large number of success factors. The scores for each logistics initiative for each CITYLAB implementation were normalised to scores between 0 and 100.

vii. The score for each CITYLAB implementation in context of each CITYLAB city was calculated as the average of the normalized score of all relevant logistics initiatives. Each logistics initiative was weighted equally. The score indicates to which extent an applied CITYLAB implementation may be successfully roll-out in other CITYLAB cities.

viii. The scores for all CITYLAB cities have been ranked for each CITYLAB implementation. The ranking enables to evaluate, in which CITYLAB city the best chance is given for a successful transfer of the implementations.

For each combination of CITYLAB city and CITYLAB implementation, success factors were identified. These success factors might be improved to increase the chance of successful transfer of the CITYLAB implementation to the CITYLAB adopter cities. In general, these are success factors which were rated as 'high importance' or as 'essential' from the perspective of the CITYLAB implementations. In contrast, the CITYLAB cities rated the same success factors as 'strong constraint' or as 'constraint'. The results of this analysis are shown in detail in Appendix C.

CITYLAB assessment template

The seven steps of the CITYLAB transferability analysis which were derived from the TIDE methodology are summarised in the CITYLAB transferability assessment template (Figure 1). The steps are generic and the success factors depend on the CITYLAB implementation considered for transfer to other CITYLAB cities.

Step 1
Implementation statement, objectives and scope

Step 2
Impact of the implementations

Step 3
Up-scaling or down-scaling needs

Step 4	Step 5	Step 6
Identification of success factors	Level of importance of success factors in current context of implementations	Assessment of success factors in context of adopter city

Step 7

Evaluation of transferability	Comments on essential success factors

Figure 1 – CITYLAB transferability assessment template.

In the next section of this deliverable the outcome of the CITYLAB transferability analysis will be described using the methodology outlined above.

3 Results of the transferability analysis for CITYLAB implementations

In the following subsections 3.1 to 3.7 each CITYLAB implementation is assessed according to STEP 1 to 6 of the CITYLAB transferability analysis. This includes first of all a motivation for each CITYLAB implementation. This motivation is followed by the consecutive execution of the steps of the transferability analysis. This includes the detailed description of the implementations (STEP 1), the clarification of the impact of the implementations (STEP 2), the identification of the upscaling/downscaling needs (STEP 4), the identification of success factors (STEP 4), the description of the results of the survey on the importance of success factors (STEP 5), and the description of the results of the survey on the assessment of the support or constraint for success factors (STEP 6). All steps are conducted from the perspective of the CITYLAB implementations. There is one subsection for each CITYLAB implementation.

The summary of the results of STEP 7 of the CITYLAB transferability analysis will be presented in section 4. Section 4 will focus on the different CITYLAB cities.

3.1 London implementation: Growth of consolidation and electric vehicle use

The main questions of the London implementation are: ‘What can be done to increase the use of urban consolidation centres (UCC) for logistics activities?’ and ‘What can be done to increase the use of electric vehicles (EV) amongst parcel services providers?’. The implementation involves an integrated co-operative supply chain approach between carriers. The implementation contains the development of an innovative collaborative business model between two freight carriers providing the mutual use of UCCs and freight deliveries with EVs.

3.1.1 STEP 1 London implementation statement/objectives and scoping

Source: CITYLAB Deliverable 5.3 (2017)

The decision to select this implementation action was taken in the London Living Lab, involving Transport for London, Gnewt Cargo, TNT and University of Westminster The implementation action was started in accordance with a time plan set up in the Living Lab. The policy activities in the London Living Lab have been strongly influenced by the questions arising during the implementation efforts, which have focused on how to deal with the limitation of further transfer of parcels flows and business growth in Gnewt Cargo due to the lack of affordable logistics depot space in central London.

The parcels delivery business of Gnewt Cargo focuses on the geographical area inside the London Congestion Charge Zone. The company is performing city centre distribution as carriers’ carrier with a centrally located consolidation centre, and a 100% electrically-powered van fleet.

In the CITYLAB implementation, the business volume of Gnewt Cargo is increased through delivering more parcels on behalf of TNT’s domestic business division, previously distributed by other contractors. Before the implementation, TNT (a major parcel carrier) used a contractor with a standard diesel fleet to make these deliveries from its depot in Barking, East London (about 9 miles from the target delivery area in central London). In the CITYLAB implementation TNT has selected Gnewt Cargo to make these deliveries instead. TNT transfers these parcels to the Gnewt depot in central London each morning using a single diesel truck. This provides Gnewt Cargo with approximately 7-10 van loads each with 80-250 parcels to deliver each day to receivers in central London using its 100% electric van and tricycle fleet.

3.1.2 STEP 2 Clarification of the impacts of the London implementation

Source: CITYLAB Deliverable 5.3 (2017)

Distance and fleet reduction: impact analysis

The main impacts on operations of the London implementation are summarised in Table 3.

Table 3 – TNT distance reduction, before-after comparison, September 2016.

BEFORE deliveries starting from Barking	Number of vehicle trips	MPG	Monthly distance in km	Parcels delivered during month	Distance in km/ parcel
Van TNT domestic	10		24,6	30,0	
Average		31			0.
AFTER Gnewt Cargo operations					
Electric Van Gnewt	10	-	56	21,2	0.2
% reduction	**0**		**77**		**67**

Source: Gnewt Cargo Cat 3 demonstrator, data from September 2016

The distance analysis is strongly influenced by the location of the depots and this result will probably change if another business type or another scenario is considered. In the past, the distance reduction achieved for different clients were between 20% and 85%, the current impact figures for 10 vehicles seem rather robust.

The distance travelled is reduced by 67%. This has an impact on traffic and on costs, and it is estimated that travel times are also reduced.

The number of vehicles in use is unchanged for the Gnewt Cargo business after the changes, due to the use of the electric vans directly starting from the TNT depot in Bermondsey.

CO_2 and air pollutant reduction: impact analysis

The 'before' emissions for TNT diesel van distribution were recorded in September 2015. The average value of 220 grams of CO2 per parcel for TNT is an average baseline value. The 2 million parcels a year of Gnewt Cargo would represent, with such an average, a total CO2 emission of 440 tonnes per year, that can potentially be avoided. This example show how the potential future reduction might occur if the Gnewt Cargo logistics solution, or a similar system, would be further developed in London.

The climate impact of the changed routes occurring in the TNT distribution system is a 100% CO2 reduction, because no diesel truck is used to transport the goods between the TNT depot and the Gnewt Cargo depot. So, as of September 2016, the last mile operation under observation and for which the data collection occurred, was 100% electric.

Fuel use before was 0.07 litre per parcel, equalling 0.195 kilograms of CO2 equivalent per parcel (kg CO2/parcel), and this represents a value that is similar to other diesel vans in urban logistics. The lowest CO2 emissions measured before as an average of one day, is 47 grams of CO2 e per parcel and the maximum is a daily round with an average of 2.38 kg CO2 per parcel.

Table 4 – CO_2 reduction effect, before-after comparison, September 2016.

BEFORE deliveries starting from Barking	Number of vehicle trips	l/ 100km	Total litre/month	Litres/ parcel	kg CO_2/ parcel
Van TNT domestic	10		2243		
Average		9		0.07	0.195
AFTER Gnewt Cargo					
Electric Van Gnewt	10	-	-		
Total	10				
Average			0	0	0
% reduction	**0**		**100**	**100**	**100**

Source: Gnewt Cargo Cat 3 demonstrator, 2016

The total fuel use and CO2 emission per parcel is reduced by 100% in the 'after' situation, due to the 100% electric vehicle fleet in use from the start of the TNT depot.

The air pollutants emissions of PM10 and NOx decrease also by 100% for the same reason. (As a reminder, only tailpipe emissions are considered, as no data is available on any other air pollutant emissions from electric vehicles. It is likely that rubber contact with asphalt produces emissions, but the amount is unknown at this stage).

Energy reduction: effect analysis

The energy use expressed in grammes of oil equivalent (goe)/parcel takes into account the diesel energy of the diesel vans and compares it with the kWh energy of the electric vans. The value of 87% reduction in energy use per parcel is higher than the reduction in total distance driven (67%). The conversion factors are the same than for Case Study 1, see above.

Table 5 – Energy reduction for the TNT demonstration, September 2016.

BEFORE deliveries starting from Barking	Number of vehicle trips	goe/ parcel
Van TNT domestic	10	
Average		63
AFTER Gnewt Cargo operations		
Electric Van Gnewt	10	8.4
% reduction	**0**	**87**

Source: Gnewt Cargo Cat 3 demonstrator, 2016

Empty distance reduction: target analysis

The empty distance is much reduced as well (93%) due to the fact that electric vans are only empty between the last drop and the return to depot, which was estimated as 1 km per van per day. In the situation 'before', the van trip back to the TNT depot in Barking is an empty return, except when the delivery trips can be combined with a collection trip, which is estimated to occur at one tenth of all trips. The empty distance for TNT in Barking is estimated to be 16 km, and the empty trip is counted when starting from the last delivery point of the day, for the part of the journey going back to depot.

Table 6 – Reduction in empty distance for the TNT demonstration, September 2016.

BEFORE deliveries starting from Barking	**Number of vehicle trips**	**Monthly empty distance in km**
Van TNT domestic	10	2984
Average		
AFTER Gnewt Cargo operations		
Electric Van Gnewt	10	210
% reduction	**0**	**93**

Source: Gnewt Cargo Cat 3 demonstrator, 2016

3.1.3 STEP 3 Identification of upscaling/downscaling need (replication potential analysis)

Urban consolidation centres replication is already performed with the opening of a similar Gnewt Cargo depot in Oxford, United Kingdom. The condition to be met is to successfully start a new business in a new location with similar clients and a similar dense distribution area. The replication of the business model linking Gnewt Cargo and TNT however, is less easy and could not be performed during the lifetime of CITYLAB. This is due to the major difficulty that TNT usually delivers a mix of large and small parcels, and that the Gnewt Cargo city centre depot and electric fleet only accommodate smaller parcels. However, we observe a steady growth of the volume of parcels delivered per year at Gnewt Cargo, as other clients were successfully acquired and some of the existing clients increased their freight volume. In London, there is further need to scale up the business model of Gnewt Cargo.

Replication of *"improving load factor of urban delivery vans"* is very easy when considered together with the Urban Consolidation Centre replication. However there remains a fundamental limitation with the load factor problem in urban logistics that even the best business model of Urban Consolidation does not tackle: the load factor only improves because of the use of smaller vans, used for multiple rounds, instead of one bigger truck used for one single round. In itself, the classical logistics round distribution doesn't change, with the vehicle starting full and arriving empty after a succession of unloading and little loading on the way. There is only an improvement on the load factor by volume on departure, and possibly by weight, due to the smaller vehicle used, but the average load factor of the entire round trip remains low, usually less than 50%, if calculated as fraction of tkm with km.

Replication of "*electric vehicle use*" is demonstrated in Oxford and thousands of other businesses in UK and Europe. It is not limited to the parcel service sector.

Replication of "*urban property and land use planning intervention*" is very problematic as it was not possible, despite huge efforts in London, to deliver on this action in a successful way as of October 2017. Not only the replication is difficult, the original "Experimental test" could not lead to a decision in favour of securing any area of London for logistics depot and consolidation purpose, so far. The trial phase is still ongoing but it is too early to obtain certainty on replication potential.

The replication of "*partnership working in the supply chain operations*" is very feasible and successfully demonstrated in many CITYLAB partner and follower cities, such as Southampton, Oxford and Manchester in UK, Brussels, Paris, Rome, Berlin, Oslo, Malmö, Amsterdam and Rotterdam in European partner countries. The basis is built with the initiative of local authorities and academics or consultants, inviting industry and businesses to take a leading role in implementations and planning measures. The main success factors are trust, willingness to cooperate, limiting the risks of failure and obtaining clarity about the benefits for public and private sector. The main barriers for a successful replication are the lack of funding, the absence of experts, lack of affordable space for logistics facilities, and very rudimentary data.

3.1.4 STEP 4 Identification of success factors for the London implementation

According to CITYLAB Deliverable 2.3 the London implementation includes the following logistics initiatives:

- 4.4 Urban consolidation centres/mobile depots
- 4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)
- 4.6.1 Electric and other alternatively-fuelled goods vehicles
- 4.10 Urban distribution property and land use planning interventions
- 4.12 Partnership working in the supply chain operations

For each of these initiatives CITYLAB Deliverable 2.3 identified success factors from literature. Summarising the success factors for the above mentioned logistics initiatives 72 (out of 119) success factors which are relevant for the London implementation. The complete list of the success factors for each logistics initiative is given in Appendix A.

3.1.5 STEP 5 Identification of the level of importance of success factors for the London implementation

The results of the survey on the importance of success factors for the London implementation show that nine out of the 72 success factors have been rated as ‘essential’ for the London implementation. Sorted by logistics initiative these success factors (SF) are:

<u>4.4 Urban consolidation centres/mobile depots</u>

- SF2 - Keeping capital costs to a minimum
- SF4 - Obtaining appropriate location for the consolidation centre
- SF7 - Sufficient product throughput to generate revenue

<u>4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)</u>

- SF21 - Close inter-company working (between shippers, carriers and receivers)

<u>4.6.1 Electric and other alternatively-fuelled goods vehicles</u>

- SF47 - Availability of refuelling/recharging networks
- SF48 - Availability of green electricity
- SF50 - Time taken for refuelling/recharging

<u>4.10 Urban distribution property and land use planning interventions</u>

- SF106 - Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF110 - City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)

None of the success factor for the logistics initiative *4.12 Partnership working in the supply chain operations* was rated as ‘essential’. Nevertheless there are several success factors rated as ‘high importance’ for this logistics initiative:

- SF134 Need to involve a wide range of stakeholders
- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF137 Softer' solutions based on collaboration rather than regulation and restriction are likely to be more acceptable and beneficial

- SF138 Need to find common ground between disparate stakeholders and views
- SF139 Focus and direction needs of the partnership needs to be based on consensus.
- SF140 People's expectations need to be managed and based on realistic outlooks
- SF144 Communication and transparency are critical to partnership success

The results depict, that success factors for the logistics initiative *4.6.1 Electric and other alternatively-fuelled goods vehicles* were assessed as most important for the London implementation. Nearly all success factors in this logistics initiative were rated as 'essential' or 'high importance'.

The lowest importance can be seen in the logistics initiative 4.5 *Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)* were half of the success factors have been rated as 'Not relevant at all' or 'Low importance'.

Overall 51% of the 72 success factors for the London implementation have been rated as 'essential' or 'high importance'.

3.1.6 STEP 6 Assessment of the support or constraint for success factors in the context of the CITYLAB adopter cities

Table 7 figures the survey results regarding the London implementation in context of the other CITYLAB cities. The best chance for a successful transfer of the London implementation is given in Oslo. The chances in Rome and Paris for a successful transfer of the London implementation are on similar levels. The scores for Amsterdam and Southampton are a bit lower. Details on the success factors which have the most influence on the chance for a successful transferability of the London implementation will be given in Appendix C.

Table 7 – Results for London implementation

	CITYLAB city						
Logistics initiative	**Amsterdam**	**Brussels**	**Southampton**	**Oslo**	**Rome**	**Paris**	**max**
4.4	10	-2	29	28	23	-5	86
4.5	-3	0	-1	5	21	1	42
4.6.1	33	-13	33	23	12	9	94
4.10	-2	9	-2	6	-1	26	48
4.12	27	-3	23	37	24	51	68
Normalized score – sum	**57.51**	**49.82**	**59.61**	**63.58**	**62.27**	**63.53**	**100.00**
Rank	**5**	**6**	**4**	**1**	**3**	**2**	

3.2 Amsterdam implementation: Floating depot and city centre microhubs

This implementation followed the Living Lab approach; from a shared vision of making the city centre of Amsterdam more sustainable and reduce congestion. Over the last couple of years PostNL has been exploring alternative options of goods deliveries in Amsterdam, trying to reduce the impact of congestion on its working processes in a sustainable way. The Amsterdam implementation is looking into the possibilities of more efficient last mile deliveries making a better use of the available infrastructure.

3.2.1 STEP 1 Amsterdam implementation statement/objectives and scoping

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

The implementation aims to improve last mile logistics in a sustainable way. This relates to the “highly fragmented last-mile deliveries in city centres” that is one of the four axes of intervention CITYLAB focuses on. The Amsterdam implementation aims at a sustainable but economically viable last mile logistics solution that is reducing the pressure on the urban road transport network. The original idea was a floating depot in the canals. Through the living lab process it evolved into establishing microhubs in the city centre and serves these with electric freight bicycles.

PostNL has cooperated with the local authorities (via the Amsterdam Smart City) as well as with researchers (TNO, Amsterdam University of applied science, HvA, and VU). To optimise the transport using the old waterways in the centre of Amsterdam many ideas were developed, and the implementation has gone through several Living Lab cycles.

The initial plan of the Amsterdam implementation focused a floating depot. The parcels were supposed to be navigated into the city by a vessel with a mechanism to lift the goods onto the quays. From there they were transported by clean vehicles. For several reasons, the initial plan could not be realised: 1) challenging combining the vision of a small company, a large boatbuilding company (Veka) and PostNL, 2) lack of local government support in deciding department 3) organisational changes to the PostNL parcel deliveries, now designed for vans and 4) the distance from the distribution centre to the city-centre is too long for LEVs and it is too expensive to reload for transportation to an inner-city floating depot.

Therefore, at the end of 2016 the idea was changed to serving a set of microhubs by conventional vehicles, but then to use clean vehicles for distribution from these microhubs. A floating depot may still be used in the future, acting as a microhub where needed but the current solution focuses on the microhubs.

At the moment, 7 micro hubs are in operation. These are served by trucks twice a day. The first trip includes mail that will be delivered to business client in the morning. Once the electric freight bicycles deliver all mail to the clients, they return to the microhub and are being recharged. In the afternoon the electric freight bicycles start a second shift to empty all public mailboxes and to go to all the business clients to pick up post and parcels to be sent. It is important to know that the collection of mail and parcels from business clients is time constrained and should occur during a time window, specified by the client. The second trip from the truck in the evening is used to collect all mail from the microhub and transport this to a larger depot outside the city centre.

3.2.2 STEP 2 Clarification of the impacts of the Amsterdam implementation

Source: CITYLAB Deliverable 5.4 (2017)

Before the CITYLAB implementation, the delivery and collection of mail from business clients and public mail boxes was handled by vans from the larger depot outside the city centre. The most frequently used vehicle is the Volkswagen Caddy. About 150 trips per day were required to handle the 3500 orders. The drivers experienced a lot of stress from congestion and parking issues combined with meeting the client’s specific time window.

With the CITYLAB implementation, the use of vans and electric freight bicycles is combined. About 1300 orders are still handled by vans while the remaining 2200 orders are handled by bikes from the microhubs that are supplied by truck. Due to time savings during the trip caused by cycling infrastructure and lack of parking issues, bicycles can handle 5% more orders during a trip which saves about 5 trips per day. Over 90 trips per day are now being done by bike which is over 60% of the total. Drivers are satisfied with the additional exercise due to the cycling and experience less stress because congestion and parking issues no longer is affecting them. Also positive reaction from the public is experienced; tourists taking pictures and enthusiasm from clients.

3.2.3 STEP 3 Identification of upscaling/downscaling need

Replication of the *Floating depot* concept occurred only in a few pilots in Europe, and the lack of operational feasibility in Amsterdam, like in the “Vert chez Vous” case of another business attempt in Paris, did not provide evidence of its economic sustainability. At this stage, the replication of this concept is not recommended.

Replication of the *Microhub or Minihub* solution is ongoing in Utrecht and in multiple European cities, mostly for postal and parcels deliveries, and paired with the use of cargobikes or electric vehicles. Clarity has been achieved on the most profitable business model, the success factors relevant for replication, the barriers to be avoided or overcome, and the supporting framework of public policies and regulations.

Replication of the *eCargocycle use solution* is also feasible and needed in most European cities. As for the microhubs, there is clarity about the success factors and barriers, and the clear advantage of the business model lies in the agile operations in dense or pedestrianised area. One of the key supportive measures for further upscaling and take up of this solution by the industry, is to allow access to cycle lane and restricted zones, and enable the creation of microhubs close to city centres.

Out of the Amsterdam implementation, the findings suggest a further upscaling of the microhubs and ecargocycles use within Amsterdam and Utrecht by PostNL, and a replication potential for other actors in transfer cities and CITYLAB follower cities.

3.2.4 STEP 4 Identification of success factors for the Amsterdam implementation

According to CITYLAB Deliverable 2.3 the Amsterdam implementation in the CITYLAB project includes the following logistics initiatives:

- 4.4 Urban consolidation centres/mobile depots
- 4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)
- 4.6.1 Electric and other alternatively-fuelled goods vehicles
- 4.6.2 Cargo cycles for freight
- 4.11 Non-road modes
- 4.12 Partnership working in the supply chain operations

For the Amsterdam implementation, in total, 91 success factors for the above mentioned logistics initiatives could be identified. The list of success factors for each logistics initiative is given in Appendix A.

3.2.5 STEP 5 Identification of the level of importance of success factors for the Amsterdam implementation

The result of the data collection on the importance of success factors for the Amsterdam implementation show that 6 out of the total 91 success factors have been rated as ‘essential’ for the implementation. Sorted by logistics initiative these success factors are:

4.4 Urban consolidation centres/mobile depots

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF8 Selecting suitably sized vehicles to make deliveries from centre

4.6.2 Cargo cycles for freight

- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)

4.11 Non-road modes

- SF124 Achievement of unit transport costs (including the last mile delivery costs (equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road

None of the success factors were rated as ‘essential’ for the logistics initiatives *4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)*, *4.6.1 Electric and other alternatively-fuelled goods vehicles,* and *4.12 Partnership working in the supply chain operations*.

On average, success factors for the logistics initiative *4.6.1 Electric and other alternatively-fuelled goods vehicles* have been rated as most important for the Amsterdam implementation. Eight out of thirteen success factors in this logistics initiative have been rated as ‘essential’ or ‘high importance’.

The lowest importance of success factors for the Amsterdam implementation can be seen in the logistics initiative *4.12 Partnership working in the supply chain operations* where eleven out of fifteen of the success factors have been rated as ‘Not relevant at all’ or ‘Low importance’.

Overall 43% of the 91 success factors for the Amsterdam implementation have been rated as ‘essential’ or ‘high importance’.

3.2.6 STEP 6 Assessment of the support or constraint for success factors in the context of the CITYLAB adopter cities

Table 8 summarizes the results for the evaluation of the Amsterdam implementation in context of the other CITYLAB cities. It can be seen that the best chance for successful transferability of the Amsterdam implementation is given in Rome. The chance for a successful transfer of the London implementation in the cities of Oslo and Southampton is on similar levels. The scores for Brussels and London are a lower. Details on the success factors of the Amsterdam implementation which have the greatest influence on the chance being successfully transferred to other cities will be given in Appendix C.

Table 8 – Results for Amsterdam implementation

	CITYLAB city						
Logistics initiative	**London**	**Brussels**	**Southampton**	**Oslo**	**Rome**	**Paris**	**max**
4.4	-9	1	39	26	33	-8	76
4.5	-6	3	1	0	26	6	54
4.6.1	36	-10	28	18	12	10	78
4.6.2	-36	2	-1	26	14	6	70
4.11	-37	12	14	-16	11	-3	80
4.12	14	-3	9	18	5	17	24
Normalized score – sum	**48.65**	**49.95**	**61.89**	**62.45**	**63.46**	**57.42**	**100.00**
Rank	**6**	**5**	**3**	**2**	**1**	**4**	

3.3 Brussels implementation: Increasing load factors by utilising free van capacity

The objective of the Brussels implementation is to increase load factors and vehicle efficiency of deliveries to small stores, and to re-establish contact between manufacturer and store owner. Instead of going to wholesalers or supermarkets to buy merchants by their own the direct contact to the manufacturer should established and the deliveries should be conducted efficiently.

3.3.1 STEP 1 Brussels implementation statement/objectives and scoping

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

One of the contributors to congestion are the many delivery vehicles that are driving around with a low vehicle fill rate (VFR), particularly vans. For diverse reasons, it is not easy to maximize the VFRs of these vehicles, especially VFRs of vehicles of service-driven companies. The CITYLAB implementation in Brussels focuses on synergies between different types of freight transport currently transported in vehicles with suboptimal VFRs. The scope of the initiative is supply of fast moving consumer goods (FMCG) from Procter & Gamble (P&G) to small, independent retailers, or nanostores, of which there are an estimated 900 in Brussels. Field research indicates that currently most of these stores in Brussels are supplied by the owners themselves who visit a wholesaler/retailer. The aim of the implementation was to test whether individual trips from storeowners to wholesalers/retailers can be avoided and whether fill rates can be increased by unlocking spare capacity of service-driven companies to cost-efficiently supply consumer goods to small stores and reduce the generated impacts of distribution and shopping.

A dedicated assortment of P&G products was offered in a newly created webshop, operated by an external distributor The small, independent retailers could order the products on the webshop, followed by an online payment. The payment was transferred to the distributor. Order information was available to the distributor and P&G. Thereafter, the distributor informed the owner of spare capacity and delivered the products to the distribution centre

(DC) of the service-driven company. The owner of spare capacity added the additional delivery to his routing. At the end of the period, the owner of spare capacity charged the distributor in case of additional kilometres compared to its regular routes.

The owners of spare transportation capacity are service-driven companies that do not provide a logistics service as such. Those companies have daily delivery and/or service trips and often need to design-in free capacity in both their vehicles and delivery network. Since they are service-driven, these companies are contractually obliged to execute specific delivery tours regardless of being fully loaded. They often use light commercial vehicles (i.e., vans).

During the implementation, deliveries were conducted by Febelco, a distributor of pharmaceutical products. As a wholesaler and distributor of pharmaceutical products, Febelco has a market share of 43% in Belgium. In total, 2500 pharmacies are delivered one to three times per day from 8 DCs across Belgium (www.febelco.be). The Brussels-Capital Region (as well as a region to the east) is served from a DC located in Kortenberg.

3.3.2 STEP 2 Clarification of the impacts of the Brussels implementation

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

In March 2017, a sales representative introduced the concept to the stores and helped them to place their first order. Only five orders were placed and none of the storeowners placed a second order. Deliveries of the five orders were conducted in April-May 2017. They were done by Febelco and did not lead to additional vehicle kilometres since the stores were located exactly on-route between two pharmacies. Storeowners still conducted their trips to wholesalers/retailers to purchase their non-P&G products.

During the implementation, the product assortment was limited to P&G products. Expanding that offer with non-P&G products that are relevant for small stores located in city may further optimize logistics costs, reduce CO_2 footprint and improve service to the stores.

Table 9 below shows the impact indicators of the deliveries by Febelco (Alternative 1) compared to business-as-usual (BAU) situation where the storeowners would have picked-up the same shipment at the nearest wholesaler with their own vehicle.

Table 9 – Impact of deliveries done by Febelco compared to business-as-usual (BAU).

Impact indicator	BAU	Alternative 1
Air quality (gram)		
SO2	0,024	0
NOx	16,15	0
PM	1,634	0
Freight movements	5	5
Freight kilometres	19	0
Fuel consumption (litres)	2,07	0

The main challenge for P&G was to get and keep the stores involved. Whether storeowners continue ordering their products online is vital. Several store visits – also in other locations – revealed that price was the major driver. The storeowners mostly adopted ‘cherry-picking’ when supplying their store, meaning that they try to find the lowest price and go after all promotions in different stores. Most care neither about the brand, nor alternative (innovative) ways of being supplied. Some storeowners do not replenish products when these are out-ofstock but not in promotion at the wholesaler. It was difficult for P&G to show that the pricing and extra delivery service on the webshop can be competitive with this. Minor drivers for participation seemed to be the willingness and ability to pay online (instead of cash), and trust (e.g., taxes).

3.3.3 STEP 3 Identification of upscaling/downscaling need

As it was not possible to demonstrate a sustainable business case for ”*increasing load factors by utilising free van capacity*”, it was not possible during the CITYLAB project, and therefore it is not recommended, to scale up or replicate its operational pilot design in another city at this stage.

There are a number of options available to shippers for increasing the load factors of their supply chain operations. One of the possible enabling options is to allow the carriers to transport goods from different suppliers in the same van.

As for other CITYLAB cities, the replication of “*partnership working in the supply chain operations*“ is very feasible and successfully demonstrated, in London, Oxford and Manchester in UK, Brussels, Paris, Rome, Berlin, Oslo, Malmö, Amsterdam and Rotterdam in European partner countries.

3.3.4 STEP 4 Identification of success factors for the Brussels implementation

Based on CITYLAB Deliverable 2.3 the Brussels implementation in the CITYLAB project includes the following logistics initiatives:

- 4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)
- 4.12 Partnership working in the supply chain operations

For these two initiatives 29 success factors could be identified, which are presented in Appendix A.

3.3.5 STEP 5 Identification of the level of importance of success factors for the Brussels implementation

Due to their importance research partners in Brussels added five new success factors during the survey for the Brussels implementation:

- SF152 Start-up support to involve and instruct customers (storeowners)
- SF153 Creation software platform to track all operations and communication when multiple companies are involved, particularly with more shippers
- SF154 Willingness to order online
- SF155 Ability to pay online (internet connectivity / registered bank account or credit card available)
- SF156 Wide product assortment

These success factors will be considered for further analysis as well. The results of the survey show that five out of the 32 success factors were rated as ‘essential’ for the Brussels implementation. Sorted by logistics initiative these success factors are:

<u>4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)</u>

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)
- SF154 Willingness to order online

<u>4.12 Partnership working in the supply chain operations</u>

- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF148 Online meeting tools assist and increase participation in national and international partnerships
- SF152 Start-up support to involve and instruct customers (storeowners)

On average, the success factors for the two initiatives show assessment in terms of their importance for the Brussels implementation. Overall 59% of the 32 success factors for the Brussels implementation were rated as 'essential' or 'high importance'.

3.3.6 STEP 6 Assessment of the support or constraint for success factors in the context of the CITYLAB adopter cities

Table 10 summarizes the results for the survey of the Brussels implementation in context of the other CITYLAB cities. According to the ranking the city of Paris provides the best environment for a successful transferability of the Brussels implementation of all CITYLAB cities. Oslo also offers a good environment for a successful transfer of the Brussels implementation. The scores for Southampton and Amsterdam are a bit lower.

Details on the success factors which have the most influence on the chance for the successful transferability of the Brussels implementation will be given in Appendix C.

Table 10 – Results for Brussels implementation

	CITYLAB city						
Logistics initiative	**London**	**Amsterdam**	**Southampton**	**Oslo**	**Rome**	**Paris**	**max**
4.5	9	-15	-8	7	18	12	64
4.12	33	22	21	48	24	60	88
Normalized score – sum	**62.89**	**50.39**	**52.84**	**66.37**	**63.85**	**71.73**	**100.00**
Rank	**4**	**6**	**5**	**2**	**3**	**1**	

3.4 Southampton implementation: Joint procurement and consolidation

Improvement of air quality is a fundamental policy objective of the City of Southampton. Other city objectives include to reduce the HGV movements in urban areas and to facilitate a structure that will enable economic growth to continue unhindered by issues of congestion and, in particular, to maintain effective operation of the Port of Southampton. These objectives have to be achieved in the general city context, characterized by: unacceptably high pollution levels in and around the port of Southampton and along some key corridors around the city, increasing congestion levels and limited municipality budgets.

3.4.1 STEP 1 Southampton implementation statement/objectives and scoping

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

Within the Citylab project, the aims of the Southampton implementation actions are to support the policy objective acting on reduction of freight vehicle movements and increasing the number of less-polluting vehicles. It was chosen to focus on the freight transport generated by large municipal organisations (LMOs), such as local authorities, hospitals, universities. The perceived issue is that LMOs are generating too much freight transport through their purchasing of goods and services, exacerbated by, arguably, overly flexible procurement practice (e.g. highly decentralised systems with many different buyers and suppliers and too frequent ordering) and with little consideration of the resulting environmental impact. The CITYLAB Southampton implementation considers two different strands to reduce the environmental impact:

- Use of the Southampton Sustainable Distribution Centre by LMOs
- Use of electric vehicles by Southampton City Council for their in-house operated services.

The Southampton Sustainable Distribution Centre (SSDC) is operated by Meachers Global Logistics (MGL) from their premises on the outskirts of Southampton (Nursling Industrial Estate just off the M271 motorway.) They already run this as a commercially successful operation with several private sector clients including Carnival (cruise liners) and the Steve Porter Group (a transport company based on the Isle of Wight) and some use by Southampton City Council for records storage. The CITYLAB Southampton implementation sought to expand its use to other LMOs (e.g. hospitals and universities). Three consolidation opportunities, fully described in CITYLAB Deliverable 5.3, were investigated:

1. Isle of Wight NHS Trust: Assessment of consolidation opportunities for St. Mary's Hospital, Newport, Isle of Wight, indicated that substantial numbers of delivery vehicles can be removed through consolidation. The Trust ultimately took the decision that the implementation could not proceed due to financial pressures, other priorities, and the belief that the scheme would not be financially sustainable.
2. Planning of consolidation opportunities for Southampton General Hospital was already on-going prior to CITYLAB and continued during the project. A delivery service plan undertaken for the three main goods-in points of the hospital indicated the extent of freight operations: 900 incoming vehicles during the survey week, of which 71% were vans and 18% lorries, which came as an unpleasant surprise for management there who had estimated about 1/3rd of the actual vehicle numbers and led to interest in consolidation opportunities. Subsequent meetings with Directors of Procurement and Supply Chain led to a small-scale implementation of temporary storage and transportation of around 12 automated dispensing cabinets (Omnicell), using the SSDC, and this is now being rolled out to the whole hospital, with a fixed space booked at the SSDC for the next 18 months, including an office and an assembly unit.
3. Consolidation opportunities for University of Southampton (UoS) and Southampton Solent University (SSU) student halls of residence. University students are a particularly active group in terms of online purchasing behaviour, contributing to the major freight traffic flows at university halls of residence. Considerable numbers of parcels for students are delivered to different resident halls of these universities. Courier companies are visiting the halls several times a day delivering individual packages. These deliveries are often done by vans. Surveys conducted at residential halls for both universities have illustrated that individual halls may typically be serviced by ten or more different couriers each day. The implementation idea is that all parcel and mail deliveries to student halls would be made via the SSDC. In practice this would mean, that when ordering an item online, the student would give their delivery address as "Hall name, c/o SSDC address". MGL would receive parcels

and sort them into suitable delivery containers for subsequent delivery to halls. Each hall would receive a single delivery each day from MGL at an agreed time, by a single delivery vehicle.

3.4.2 STEP 2 Clarification of the impacts of the Southampton implementation

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

Due to the lack of any significant take-up of consolidation, to date, by the LMOs, the effects and consequences reported here are based on measured ‘before’ data but **estimated ‘**after’ data, based on stated assumptions about anticipated effects once implementation takes place.

Isle of Wight NHS Trust

Extrapolating the measured survey results for the ‘business as usual’ or ‘before’ case indicated that the combined delivery/collection vehicle visits made to the St. Mary’s hospital depot, pharmacy or catering unit totalled around 11,440 per year, moving an estimated 170,500 items with a volume of around 14,750m^3. For the **estimated** after case, it was considered that total visits would reduce by around 21%, to 9,000 visits per year, based on the assumption that timed deliveries (e.g. before 10am) and local (Isle of Wight) suppliers would be not be suitable for consolidation. A relatively small cost of consolidation of £4,252 per annum was estimated based on consolidation warehousing costs being partially offset by income being generated through increased space availability at the hospital due to reduced goods-in facilities being needed.

Total delivery costs would likely increase due to consolidation as the introduction of costs charged by MGL for the consolidation service may not be offset by any reduced delivery costs charged by 3PLs in delivering to the SSDC rather than to the Isle of Wight (involving a one-hour ferry crossing in each direction of travel). As existing delivery charges are integrated within product prices we could not estimate the price difference (i.e. increased cost) with any confidence. The Trust’s initial attempts to negotiate reduced prices with suppliers have not been fruitful to date and this extra cost has acted as a significant barrier to implementation.

University of Southampton and Southampton Solent University halls of residence

Goods-in surveys at four University of Southampton halls with a total of 5,050 students took place over 6 days (9am to 5pm), immediately following the 2015 Black Friday sales event date (27/11/15). These surveys were restricted to deliveries of parcels and excluded deliveries of groceries and take-away food, which are perishable and thus would not be suitable for consolidation. A total of 3,504 parcels were delivered in 275 visits (average 12.7 parcels/visit) across the four halls and the biggest hall (1,900 students) received between 14 and 18 visits each day. Extrapolating these results to consider both universities in Southampton (14 halls with 8,886 students) and seasonal trends observed in annual goods receipting data obtained from Southampton Solent University, it was estimated that around 128,000 packages per year (= 14 per student per year) are delivered with an estimated total volume of 4,194m^3. The cost of providing a consolidated delivery service to both universities was estimated by MGL to be around or £160,000 or around £18 per student per year.

A significant benefit would be an estimated time savings of two hours per day for the hall receptionist in moving from having to deal with multiple couriers arriving throughout the day to a system having a single receipted and pre-sorted delivery from MGL. This time savings was estimated by a hall manager and derived from the daily time spent dealing with couriers (60 mins), logging parcels into the system (100 mins), liaising with students to handover items (30 mins) and retrieving items from neighbouring halls where a reception desk had been unattended when the courier arrived (20 mins). The usefulness of the time savings would depend on whether that time could be used effectively elsewhere or whether staffing hours could be reduced.

It was estimated that consolidation could have the potential to reduce the total number of delivery visits to halls by 35%, from the current 13,512 to 8,765, that is 5,405 (=40% of 13,512) direct by couriers with 3,360 consolidated deliveries via the consolidation centre (14 halls x 40 weeks x 6 days/week). This was based on an assumption that urgent, timed deliveries would have to be excluded from consolidation as the student may have paid a premium to receive the item before a certain time and, from a legal perspective, it may not be feasible to restrict such requests.

A further benefit is anticipated associated with the amount of time required by couriers to deliver to the SSDC rather than to 14 halls of residence; however, it is difficult to estimate this with any confidence without detailed knowledge of their delivery volumes across the whole of the city and surrounding areas, so this estimate has not been made.

3.4.3 STEP 3 Identification of upscaling/downscaling need

The replication of the use of the Southampton Living Lab solutions *“alternatively-fuelled vehicles and Urban Consolidation Centres”* is ongoing in several CITYLAB cities such as London, Southampton, Amsterdam and Brussels. Other European cities such as Copenhagen, Berlin, Padova or Torino are currently expanding this type of action, with a more general concept, not targeting individual institutions.

Concerning the specific application of solution dedicated to “*Consolidation Centres for Municipalities, Hospitals or University institutions*”, other pilot schemes, are conducted in Newcastle with the University Campus and Clipper Logistics, with the London Borough of Camden and DHL, with the municipality of Amsterdam and Cargohopper. These actions are aiming at “*consolidation from the point of view of the end recipient”*.

3.4.4 STEP 4 Identification of success factors for the Southampton implementation

The Southampton implementation consists only of a single logistics initiative:

- 4.6.1 Electric and other alternatively-fuelled goods vehicles

For this logistics initiative in total 16 success factors could be identified, which are presented in Appendix A.

3.4.5 STEP 5 Identification of the level of importance of success factors for the Southampton implementation

The result of the data collection on the importance of success factors for the Southampton implementation show that two out of 16 success factors have been rated as ‘essential’ for this implementation. All success factors of the Southampton implementation belong to the same logistics initiative. The essential success factors for this logistics initiative are:

<u>4.6.1 Electric and other alternatively-fuelled goods vehicles</u>

- SF42 Type of operating patterns of carrier (distance, duration, intensity of vehicle use)
- SF47 Availability of refuelling/recharging networks

Overall 56% of the 16 success factors for the Southampton implementation have been rated as ‘essential’ or ‘high importance’.

3.4.6 STEP 6 Assessment of the support or constraint for success factors in the context of the CITYLAB adopter cities

The results of the analysis are presented in Table 11. Here, London reaches rank ‘1’, which means it provides the best environment of all other CITYLAB cities for a successful transfer of the Southampton implementation. Amsterdam provides the second best chance for a successful transfer. The score is quite similar level.

Table 11 – Results for Southampton implementation

	CITYLAB city						
Logistics initiative	**London**	**Amsterdam**	**Brussels**	**Oslo**	**Rome**	**Paris**	**max**
4.6.1	34	32	-7	22	15	14	84
Normalized score – sum	**70.24**	**69.05**	**45.83**	**63.10**	**58.93**	**58.33**	**100.00**
Rank	**1**	**2**	**6**	**3**	**4**	**5**	

3.5 Oslo implementation: Common logistics functions for shopping centres

The aim for the Oslo implementation is to improve the conditions for efficient deliveries to major traffic generators e.g. multi-tenant shopping centres. The implementation assists the planning process of a new shopping centre at Økern, Oslo, looking into regulatory, technical, design, organisation and financing challenges, when constructing the shopping centre infrastructure with common logistics functions.

3.5.1 STEP 1 Oslo implementation statement/objectives and scoping

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

Large volumes of goods are daily delivered to the shopping centres. In the business as usual situation drivers have to bring all items from common unloading areas to the individual shops by themselves. This results in long dwell times and queuing for the vehicles in the freight receipt area. This contributes to inefficient use of space, increased use of fuel, as well as noise disturbance, traffic congestion, and contributes to driver stress levels (Browne et al., 2016).

Previous demonstrations and analyses (Straightsol, 2014) have suggested that having a common logistics function in a shopping centre can improve logistics operations efficiency. Common logistics function means creation of a dedicated service for handling freight from vehicle arrival to the individual tenants within the shopping centre and handling back flows in the case of returns and waste. In the framework of this service, dedicated local staff takes over the responsibility for the goods from the driver as soon as the freight is unloaded from the vehicle. The freight may then either be brought to a temporary storage facility or immediately brought to the shops. In that case the driver and the vehicle may leave the shopping mall directly after unloading the goods and all necessary procedures (scans, signatures, etc.) are being performed by the common logistics function. In a concrete example demonstrated in Stovner shopping centre (Straightsol, 2014), instead of direct delivery at the shops, the truck driver delivered his goods to a security guard of the shopping centre. The security guard verified that the deliveries were according the order, signed the papers and placed the goods in a locked buffer storage area. The security guard took care of the internal delivery to the shops, at the time requested by the shop managers.

The implementation supports development of the logistics services within Økern shopping centre. This centre is currently in a construction phase and is planned to be open in 2022. The shopping centre is located in Hovinbyen area - a part of Oslo were 27 000 new residences are planned to be built. The Municipality of Oslo estimates that 100 000 inhabitants will live there in 2030. Steen & Strøm, the owner of the shopping centre, have for a long time planned to demolish and rebuild their shopping centre at Økern combining shops and restaurants with offices, cinema, hotel, and a waterpark. Current plans for the commercial shopping centre include a space of 51,500m^2 where 155 tenants, will be located, generating significant freight flows.

3.5.2 STEP 2 Clarification of the impacts of the Oslo implementation

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

As Økern shopping centre will open its doors in 2022, it is not possible to estimate the effects from the introduction of the common logistics service based on data from the Økern centre. Therefore, in order to evaluate the effects of implementing common logistics functions, experiences were gathered from different shopping centres with and without such functions. The conditions at the different shopping centres affect the setup and execution of the common logistics function. In addition, the various stakeholders have opposing interests and needs and thus perceive the added value differently.

More efficient deliveries

Freight deliveries to shopping centres can be a time consuming activity to the logistics service providers. It includes activities such as unloading of goods, sorting of goods at the freight receipt area, transportation to one or several stores, return transportation of goods and/or waste. One of the main intentions of introducing common logistics functions is to save time on these activities.

As the Logistics Service Providers (LSP) need less time at the shopping mall for unloading activities, it can serve more clients a day, increasing its own efficiency. Experience from Strømmen shopping centre shows that in business as usual situation, the time used by truck drivers to deliver pallets from the vehicle to shops can be up to 30 minutes to deliver one pallet. The time spent increases with the number of pallets and/or stores, depending on the distance to the store and how many trips to and from the freight receipt area that are necessary.

Table 12 – Time spent on freight delivery activities without common logistics function.

Number of pallets	Total time(minutes)	Number of stores
2	35	1
1	35	2
1	30	2
1	20	1
1	18	1
1	15	1
2	15	1
1	15	1
2	13	1

When common logistics function is introduced, the experience of DB Schenker Norway from Stovner shopping centre, shows that drivers reduced delivery times by 4-14 minutes per pallet (Torekoven J A, 2016). It takes on average 2 minutes for the drivers to unload and deliver 1 pallet to the common logistics function compared to regular situation when on average it takes about 15-16 minutes to deliver one pallet to one store depending on its location at the mall.

Effects on costs

The expenses of the logistics service provider companies are a trade-off between the costs of having the drivers performing deliveries at the shopping centre and the potential revenue loss of not performing the last mile delivery to the customer. At one of the shopping centres in the study the management suggest that the transportation companies should cover the expense of the in-house logistics service. Many of the stores demand to have the goods delivered within specific slot-times during the day. This put a strain on the driver in planning a cost efficient route. More flexibility delivering to the common logistics functions might thus improve the utilization possibilities even more. This should in turn result in reduced costs per delivered item (we are awaiting calculations from a LSP).

In the initial face of the implementation the expenses for one of the shopping centres was covered by the management and not the users of the service. This is however not seen as the permanent solution. The land owner has to dedicate sufficient space to cover the loading bays and other areas without lease income. The common logistics function pay rent on the areas covered by the freight receipt and buffer storage. Important to keep in mind is to decide upon and agree on the financial and operational aspects in advance and not after the introduction of a common logistics function.

The stores at the shopping centres handle deliveries of goods in different ways. The employees either pick up the goods at the freight receipt area themselves from the driver or from a buffer storage or have the driver or staff from the common logistics function delivers the goods at the store. At one of the shopping centres in the study nearly all of the goods were picked up at the freight receipt area by the tenants after being registered by a freight receipt employee. The general perception among store employees is that it is preferable to have the goods delivered to the store at an agreed time. This improves the control of the goods and the opportunities to execute a more appropriate (staffing). The shifts of the employees do not have to overlap in order to manage the freight delivery.

There is a potential effect on inventory of having fewer drivers and store employees performing the in-house transportation of goods. The management of one of the shopping centres regularly experienced wear and tear on the building and especially the elevators. A common logistics function solely performing the in-house logistics will help increase the overview and are likely to reduce the number of accidents and related costs. In addition, shopping centre owners have expressed a wish to reduce the number of drivers performing freight delivery alongside the shoppers because it might feel intrusive.

The users do not have to change their operations substantially to adopt the solution of a common logistics function. Neither the logistics service providers nor store employees perceive behaviour or operational change as a significant hinder to make use of the offer of a common logistics function.

3.5.3 STEP 3 Identification of upscaling/downscaling need

The replication of the Oslo solution *“Common logistics functions for shopping centres”* is already ongoing in the Malmö Emporia mall in Hyllie. The logistics operator in charge of the common logistics function is paid by the owner of the shopping centre. The acceptance is high and it is very likely that the solution is going to be implemented by the Shopping Mall owner in several other cities in Scandinavia, not only in Oslo or Malmö.

The innovation itself was not tested in other CITYLAB cities so far, as of October 2017. Therefore, for replication, it is advised to follow the lessons learnt, the key enablers and the limitations observed during the Oslo Living Lab implementation.

3.5.4 STEP 4 Identification of success factors for the Oslo implementation

According to CITYLAB Deliverable 2.3 the Oslo implementation in the CITYLAB project includes the following logistics initiatives:

- 4.4 Urban consolidation centres/mobile depots
- 4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)
- 4.8 Common internal logistics for a major multi-tenanted building or area (including reception and storage facilities and internal logistics)
- 4.12 Partnership working in the supply chain operations

For each of these initiatives CITYLAB Deliverable 2.3 identified success factors from literature. Summarising the success factors for the above mentioned logistics initiatives there are all together 54 success factors for the Oslo implementation.

The list of success factors per logistics initiative is given in Appendix A.

3.5.5 STEP 5 Identification of the level of importance of success factors for the Oslo implementation

The result of the data collection on the importance of success factors for the Oslo implementation show that 11 out of the total 54 success factors have been rated as 'essential' for the implementation. Sorted by logistics initiative these success factors are:

<u>4.4 Urban consolidation centres/mobile depots</u>

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF10 Method for allocation of costs and benefits arising from centre between supply chain users
- SF11 Development of suitable charging mechanisms to reflect costs and benefits arising from centre
- SF12 Existence of a single site owner/landlord
- SF13 Contractual compulsion to make receivers use the centre
- SF14 Regulatory compulsion to make receivers use the centre

<u>4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)</u>

- SF27 Good advance knowledge / warning for carriers about future demand for product movement and available loads

<u>4.12 Partnership working in the supply chain operations</u>

- SF144 Communication and transparency are critical to partnership success
- SF146 Requires enthusiastic support from members to improve efficiency and reduce external impacts
- SF147 Requires clear structure, Terms of Reference and Action Plan, based on achievable goals

There is no success factor rated 'essential' for the logistics initiative 4.8 *Common internal logistics for a major multi-tenanted building or area (including reception and storage facilities and internal logistics)*.

On average success factors for the logistics initiative 4.4 *Urban consolidation centres/mobile depots* have been rated as most important for the Oslo implementation. Twelve out of eighteen success factors in this logistics initiative have been rated as 'essential' or 'high importance'.

The lowest importance of success factors for the Oslo implementation can be seen in the logistics initiative 4.8 *Common internal logistics for a major multi-tenanted building or area (including reception and storage facilities and internal logistics)* where three out of nine of the success factors have been rated 'Not relevant at all' or 'Low importance'.

Overall 50% of the 54 success factors for the Oslo implementation have been rated as 'essential' or 'high importance'.

3.5.6 STEP 6 Assessment of the support or constraint for success factors in the context of the CITYLAB adopter cities

Table 13 summarizes the results for the evaluation of the CITYLAB Oslo implementation in context of the other CITYLAB cities. It can be seen that the best chance for successful transferability of the Oslo implementation is given in Rome. The chance in Paris for a successful transfer of the Oslo implementation is on similar level. The scores for Brussels and London are a bit lower.

Table 13 – Results for Oslo implementation

	CITYLAB city						
Logistics initiative	**London**	**Amsterdam**	**Brussels**	**Southampton**	**Rome**	**Paris**	**max**
4.4	-40	20	-2	32	32	0	98
4.5	-11	-10	0	0	29	4	52
4.8	-21	10	-1	2	11	8	30
4.12	35	25	-2	22	16	50	68
Normalized score – sum	**39.94**	**58.91**	**48.96**	**58.96**	**68.58**	**63.49**	**100.00**
Rank	**6**	**4**	**5**	**3**	**1**	**2**	

3.6 Rome implementation: Integration of direct and reverse logistics

Improvement of accessibility stands as one of the main goals of the New Rome Mobility Masterplan, as approved in 2014 by the City Council and in 2015 by the Municipal Assembly. Optimization and reduction of the freight vehicle movements directly contributes to this goal. CITYLAB Rome implementation aims at improving and optimizing waste collection and reverse logistics, increasing return load factors of the vehicles and eliminating unnecessary vehicle movements.

3.6.1 STEP 1 Rome implementation statement/objectives and scoping

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

The CITYLAB Rome implementation is looking into how to efficiently integrate recycling logistics flows into existing (non-dedicated) vehicle movements. The main idea is to test how to organise the transport for some categories of recyclable waste, collected at large attractors (such as universities, hospitals, public authorities), by non-dedicated trips, making use of an IT alerting system. The initial trial conducted within CITYLAB Rome implementation focuses on the collection of the plastic bottle caps at the premises of Rome Tre University.

The Living Lab partners [Poste Italiane (PIT), MeWare (MEW), City of Rome (ROME), Mobility Agency of Rome (RSM), University of Roma Tre (UR3)] decided to perform several Living Lab cycles starting from a small scale implementation later to be subsequently upscalupscaled.

The first cycle, now completed, is a small scale implementation considering a specific material (i.e. plastic caps) and covering a relatively small area (0.5 km^2, involving four UR3 department buildings). This choice was due to the following factors:

1) due to stringent regulatory/labour legislation constraints on the type of materials that Poste Italiane can transport, preferred to practically implement such an innovative solution in a real-life context, considering a compliant type of material, so to investigate and discover all the possible organisational problems as well as potential market opportunities;
2) no clear and appropriate support could be taken from the beginning by the City of Rome, due to the temporary absence of political guidance, while it was thought that an effective involvement useful for project upscaling would be reached afterwards;
3) plastic caps (composed by polyethylene which is an easy recyclable-versatile-economic type of plastic) recycling initiatives have been spreading in local/national contexts in recent years demonstrating their success with respect to people participation and, in particular, the existing collection system at UR3, based on the availability of volunteers using diesel/gas propelled vehicles performing dedicated collection trips characterised by extremely low load factors, was neither sustainable nor efficient.

Using the Living Lab approach additional stakeholders have been included, namely the company responsible for providing the concierge service, the UR3 Mobility Manager, and UR3 students, teaching and administrative staff.

In the business as usual situation, plastic caps were collected by involved people (students, professors, visitors, etc.) on a voluntary basis, in the collection points located in various buildings of the University. Next, the Mobility Manager (or another University employee) is asked to come and pick up collected plastic caps and deliver it to the central collection point located at the main office. This trip is done with a diesel car. The need to perform collection from peripheral collection points is signalled to the Mobility Manager of the University on a voluntary basis. Therefore, collection is performed on an ad-hoc procedure and many trips are made with extremely low load factors.

Several caps collection containers were installed in 4 university buildings, equipped with automated signalling alert system, indicating when container is full. The key idea of implementation is that once container is full, the signal is sent to Post. The signal to Post when container is full is not automatic but it is provided by the Concierge Service Company. Than container is picked within a round perform by the postal men, who in any case have to perform courier delivery trip to that specific department. The postal men take the plastic container and bring it to the final collection point at Post premises close to the University. These rounds are performed with electric vehicles. Finally, the plastic caps are brought by Post to the central collection point at the Rectorate where they are temporarily stocked until a sufficient amount is garnered so to be finally shipped to RMP Salari S.r.l. who buys them.

The second cycle will explore the opportunity to: 1) extend the implementation in terms of flows involved, sites and alternative waste recycled, 2) include it in the actual logistics process for urban waste management. The Department of the Environment in Rome and the local waste collection company (AMA) will be invited to participate to jointly develop new Living Lab cycles identifying new opportunities with respect to well-focused recyclable materials. The implementation contributes to the city environment where the recently passed Directives 2016-2021 for the future governance of the city of Rome has set waste collection and management as one of the most relevant issues (Roma Capitale, 2016).

While the original project description foresaw the use of iso-modular boxes due to the participation of some of the CITYLAB members also to the Modulushca project in the first implementation standard plastic boxes were used due to the problems that arose within Modulushca concerning the use of iso-modular boxes. This change has not had any major implication for deployment.

3.6.2 STEP 2 Clarification of the impacts of the Rome implementation

Source: CITYLAB Deliverable 5.3 (2017)

The implementation proved the service tested technically feasible and environmentally sustainable. Two different and potentially contrasting objectives have been achieved: (1) increasing the amount of recycling performed; (2) reducing the amount of emissions due to the related transportation activities.

The evaluation is performed by using a hypothetical counterfactual hypothesis. After having acquired the info concerning the amount of plastic caps recycled in each site and determined the number of collection trips, one can compare the actual system developed with respect to the one previously adopted. In fact, since no dedicated trips are made in the actual system, the environmental impacts can be calculated taking into account both the vehicle type used in the previous system and the number of kms that would have been driven, according to the BAU scenario, to perform the actual collection. This procedure will be used to measure the different amounts of polluting emissions with respect to alternative realistic scenarios considering further extensions of the implementation.

More in detail, air quality improved by saving dedicated trips (185 km) and related polluting emissions:

a) 53.46g of NO_2;

b) 20.088g PM 2.5 and PM 10;

c) 58,856g of CO_2;

d) 0.205g SO_2

Additionally, more plastic caps have been collected. In fact, with the old system around 40 kg of caps were monthly collected (about 17000 caps), while during the implementation a total of 108 Kg (+170%) have been collected (about 43000 caps).

The implementation provoked a great participation, interest and curiosity that materialised in several clarification requests as well as suggestions to extend the initiative both geographically (e.g. students/academics/administrative employees asked for the collection to be implemented also in their departments) and with respect to the materials recycled (e.g. the Engineering Department at the University of Roma Tre, already recycles exhausted toner, batteries and paper).

The results obtained proved relevant and have been reported in scientific publications on top journals and presentations in international conferences. The outcomes and the implementation deployed are extremely useful for future developments since they provide a real case experience that can be used as an example for future extensions both geographically and with respect to the materials recycled. This, in turn, provides a greater incentive for other stakeholders to participate and strengthens the support provided by those already involved.

Poste Italiane is now aware of the, financial, organisational, industrial, environmental and social implications linked to the new service provided and its Strategic Marketing Unit is actively investigating the extension of the service to other clean waste materials and exploring possible alleys to secure financial subsidies from local authorities.

The local administration is now capable of illustrating to citizens the implications deriving from a new clean waste collection system.

The innovative initiative proposed, when applied on a large scale, is expected to produce positive environmental impacts due to the increase of freight vehicles load factors, reduction of vehicle movements (i.e. dedicated trips), increase of electric vehicles usage, enhancement of public awareness towards recycling and increase of its total amount.

3.6.3 STEP 3 Identification of upscaling/downscaling need

The replication of the solution "*integration of direct and reverse logistics*" is occurring in several other cities in the context of waste management and reverse logistics is part of industrial and manufacturing sector logistics. The insights of the trials in Rome show that such schemes are replicable and Poste Italiane, the operator, is considering an upscaling scenario. However, as of October 2017, no other CITYLAB city has replicated the Rome solution.

The replication of the scheme components "*improved load factors*", "*use of alternative fuelled vehicles*", and "*partnerships*", is much needed. These components are similar to the other CITYLAB innovations and included into the reverse logistics solutions tested.

3.6.4 STEP 4 Identification of success factors for the Rome implementation

According to CITYLAB Deliverable 2.3 the Rome implementation in the CITYLAB project includes the following logistics initiatives:

- 4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)
- 4.6.1 Electric and other alternatively-fuelled goods vehicles
- 4.12 Partnership working in the supply chain operations

For each of these initiatives CITYLAB Deliverable 2.3 identified success factors from literature. Summarising the success factors for the above mentioned logistics initiatives there are all together 45 success factors for the Rome implementation.

The list of success factors per logistics initiative is given in Appendix A.

3.6.5 STEP 5 Identification of the level of importance of success factors for the Rome implementation

Research partners in Rome added the following success factors for the Rome implementation as there was seen importance in these success factors:

- SF149 Social diffusion among relevant community members of participants' role and achievements obtained via dedicated and general-purpose media
- SF150 Implementation of multi-purpose gamification and stakeholder engagement dedicated tools
- SF151 Development of a third-party green logistic integrated certification measurement system (linked to both previous points)

These success factors will be taken into account for further analysis as well.

The result of the data collection on the importance of success factors for the Rome implementation show that 6 out of the total 46 success factors have been rated as 'essential' for the implementation. Sorted by logistics initiative these success factors are:

4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)

- SF22 Less suited to goods that are time-critical
- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)
- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging

4.6.1 Electric and other alternatively-fuelled goods vehicles

- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers

4.12 Partnership working in the supply chain operations

- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

On average success factors for the logistics initiative 4.12 *Partnership working in the supply chain operations* have been rated as most important for the Rome implementation. Thirteen out of eighteen success factors in this logistics initiative have been rated as ‘essential’ or ‘high importance’.

The lowest importance of success factors for the Rome implementation can be seen in the logistics initiative 4.6.1 *Electric and other alternatively-fuelled goods vehicles* where nine out of sixteen of the success factors have been rated ‘Not relevant at all’ or ‘Low importance’.

Overall 39% of the 46 success factors for the Rome implementation have been rated as ‘essential’ or ‘high importance’.

3.6.6 STEP 6 Assessment of the support or constraint for success factors in the context of the CITYLAB adopter cities

Table 14 summarizes the results for the evaluation of the CITYLAB Rome implementation in context of the other CITYLAB cities. It can be seen that the best chance for successful transferability of the Rome implementation is given in London. The chance in Paris and Oslo for a successful transfer of the Rome implementation is on similar level. The score for Brussels is a bit lower.

Table 14 – Results for Rome implementation

	CITYLAB city						
Logistics initiative	**London**	**Amsterdam**	**Brussels**	**Southampton**	**Oslo**	**Paris**	**max**
4.5	2	-7	2	-3	7	6	54
4.6.1	24	17	-4	22	9	2	42
4.12	36	24	-2	28	53	72	102
Normalized score – sum	**66.02**	**58.51**	**48.70**	**62.38**	**64.39**	**64.41**	**100.00**
Rank	**1**	**5**	**6**	**4**	**3**	**2**	

3.7 Paris implementation: Logistics hotels

Paris is among the cities that have an elaborated plan to act upon the air pollution, which is recognised as one of the city's major problems. It is recognized nowadays, that logistics sprawl is contributing to the creation of additional freight vehicle – kms on the urban and metropolitan roads, thus contributing to air pollution and CO_2 emissions. The Paris CITYLAB implementation action aims to address the negative consequences of "logistics sprawl" and is doing so by reintroducing logistics terminals in the dense urban areas.

3.7.1 STEP 1 Paris implementation statement/objectives and scoping

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

The CITYLAB Paris implementation action aims to address the negative consequences of "logistics sprawl". It looks into the effects of the reintroduction of logistics terminals in the dense urban areas. CITYLAB Paris implementation assists with the evaluation of two different terminals located in Paris: Chapelle logistics hotel and Beaugrenelle urban consolidation centre. Beaugrenelle is already functioning and CITYLAB implementation is focused on its economic and environmental analysis. Due to confidentiality issues, an economic evaluation cannot be publicly reported. In the case of Chapelle logistics hotel, CITYLAB Paris implementation is not assessing volume or operational achievements (as the terminal is under construction), but regulatory, technical and economic challenges when constructing logistics buildings in cities. As the hotel is not yet in operation, economic and environmental data about it do not exist. Qualitative data on challenges when building a logistics hotel are available.

The logistics hotel's Living Lab is organized as one of the constituted working groups of the Sustainable Logistics Charter of Paris. It represents a partnership between the City of Paris, the Paris Region and SOGARIS (a logistics real estate investor and manager whose majority of capital is owned by the city of Paris).

The Paris Living Lab has made the Logistics Hotels possible: stakeholders have initiated the idea within the Paris Living Lab, and the idea was discussed and partnerships identified and consolidated. The project has then been converted into a favourable regulatory and economic environment through discussions within the Living Lab. Both logistics hotels are assessed within the CITYLAB Living Lab, and replication possibilities are imagined there.

Beaugrenelle urban distribution space is located in the 15th arrondissement of Paris. It was transformed from an old parking and has been in operation since 2013. It is configured as an urban distribution centre to serve South-West Paris and immediate neighbouring cities. It is composed of a road logistics terminal of 2 565 m²operating parcel and express transport with two delivery areas and one customer reception area open from 9h-19h. Another area of 462 m² is dedicated to offices and sanitary/social infrastructure.

Chronopost is the sole operator of this urban delivery centre. Before operating from Beaugrenelle, Chronopost was running a regular service from a suburban cross dock terminal locatied 10 kms from Paris. The location of the depot has made a huge difference in operations because consolidated shipments arrive all the way to Beaugrenelle (with Chronopost trucks), then contractors take over. In Beaugrenelle the 11 employees and 50 drivers (incl. subcontractors) of Chronopost handle 6 500 parcels per day (distribution and collection) and 3 500 deliveries per day. Current Chronopost/subcontractors fleet is composed of 28 diesel vans and 2 electric vehicles.

The **Chapelle International** project is being built as a key element of the City of Paris' strategy to reintroduce logistics activity in the dense urban area. That is a "logistics hotel": a multi-user multi-story freight facility incorporating cross-docking and warehousing facilities as well as multimodal rail road terminal.

The area wide planning is a six hectare development, with an overall project made of two parts: the first part is an urban logistics facilities (the Chapelle logistics hotel, including sport facilities, an urban farm, offices, a data centre in addition to the logistics facilities) and the second part is a set of residential buildings and 'SOHOs ' as well as several public facilities.

The logistics hotel occupies 24,203 sq m total surface (42,000 m² floor area). It is 390 meter long, 27 meter large and 7 meter high. The building has two functional levels and an occupied roof. There is a ground level of 18,826 m² and an underground level of 17,758 m². The roof is a green zone with several facilities (sport and tennis courts) and an urban farm. The urban project of around 104,000 sq m net footprint includes: around 56,000 sq m of residential areas with 900 apartments, about 33,000 sq m of offices, 8,000 sq m of SOHO (small offices/house offices), 6,000 sq m of public facilities, 800 sq m of commercial areas.

3.7.2 STEP 2 Clarification of the impacts of the Paris implementation

Source: CITYLAB Deliverable 5.3 (2017) and CITYLAB Deliverable 5.4 (2017)

For Beagrenelle, the assessment study, released in January 2017, shows an important decrease in freight veh-kms and emissions due to the new location of the depot (from suburban to urban). Most of the reduction comes from the logistics hotel concept: having a consolidation centre in the city centre reduces last miles for delivery and first miles for pick-up. By comparison, less benefits from the logistics hotel come from the use of electric vehicles.

Costs and benefits for society of CITYLAB solution

Compared to the distribution without consolidation, it contributed to the following emissions reductions: 50.4% CO_2; 52.4% PM; 47.8% SO_2; 34.3% CO and 34.7% HO; as well as a veh km savings of 52%. In 2016, it contributed to the 8% reduction of noise with the deployment of electric vans.

In Beaugrenelle, consolidation increases load factors for final deliveries and provides improved flexibility and quality of service for final deliveries, as well as substitution of diesel vans by clean vehicles (electric or CNG). The city of Paris and its citizens at large are impacted too, through a reduction of overall air pollution. Noise may also be an impact, as neighbourhood households could be negatively impacted by trucks arriving at the site.

Financial viability of CITYLAB solution

The reduction of 52% of annual km and the 8% of electric vans in the fleet can allow an economy of 60% of fuel consumption. The platform is equipped with 100% LED lighting system and a front with natural light in order to reduce energy consumption. The roof of the site is equipped with rain water recovery system.

Since its conception, the development of **Chapelle** International has overcome many obstacles. There are legal/administrative constraints, technical constraints and economic constraints, which provide the framework for various effects from the implementation.

3.7.3 STEP 3 Identification of upscaling/downscaling need

The replication of the solution tested in Paris "*logistics hotel*" is ongoing in several other business units of Chronopost in Paris and in other European cities. The construction and planning of a *rail hub in city centre,* like in Chapelle International, is not replicated yet. The investment costs and financial risks for rail infrastructure, and the long-term planning horizon are high barriers for its implementation and serious limitations for this type of solution. But at the same time, an inner-city rail hub offers a credible alternative to congested road networks in any large European city.

As of October 2017, only the solution used in Beaugrenelle of *inner city consolidation centre and clean vehicles* was replicated by the French stakeholders and the other CITYLAB partners. As for the CITYLAB London trial and the trial in Amsterdam, the easiest part of the Paris scheme is the use of clean vehicles, while the use of inner city consolidation centre is facing more severe limitations such as the lack of affordable space.

As for other CITYLAB cities, the replication of "*partnership working in the supply chain operations*" is very feasible and successfully demonstrated in Southampton, London, Oxford and Manchester in UK, Brussels, Rome, Berlin, Oslo, Malmö, Amsterdam and Rotterdam in European partner countries.

3.7.4 STEP 4 Identification of success factors for the Paris implementation

According to CITYLAB Deliverable 2.3 the Paris implementation in the CITYLAB project includes the following logistics initiatives:

- 4.4 Urban consolidation centres/mobile depots
- 4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)
- 4.6.1 Electric and other alternatively-fuelled goods vehicles
- 4.10 Urban distribution property and land use planning interventions
- 4.11 Non-road modes
- 4.12 Partnership working in the supply chain operations

For each of these initiatives CITYLAB Deliverable 2.3 identified success factors from literature. Summarising the success factors for the above mentioned logistics initiatives there are all together 78 success factors for the Paris implementation.

The list of success factors per logistics initiative is given in Appendix A.

3.7.5 STEP 5 Identification of the level of importance of success factors for the Paris implementation

The result of the data collection on the importance of success factors for the Paris implementation show that 21 out of the total 89 success factors have been rated as 'essential' for the implementation. Sorted by logistics initiative these success factors are:

4.4 Urban consolidation centres/mobile depots

- SF3 Revenue generation from value added services

- SF5 Making use of existing depot/warehouse space to reduce capital costs

4.6.1 Electric and other alternatively-fuelled goods vehicles

- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF45 Regulatory vehicle emissions standards
- SF46 City access regulations/regulatory support for clean vehicles

4.10 Urban distribution property and land use planning interventions

- SF104 Can be implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF111 Facilitation of acquisition of building permits in some cases
- SF114 Promoting innovation in architecture and building techniques for urban warehouses

4.11 Non-road modes

- SF116 Clear leadership from major public sector stakeholder backing modal shift
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF132 Efficient goods handling/terminal equipment

4.12 Partnership working in the supply chain operations

- SF142 Need to avoid becoming a talking shop – requires specific actions and tasks with timescales
- SF145 A chair and administrator are necessary to direct and take forward the work of the partnership

There are no success factors rated ‘essential’ for the logistics initiatives 4.5 *Improving loads carried on goods vehicles (vehicle fill and return loads/empty running),* and 4.10 *Urban distribution property and land use planning interventions*.

On average success factors for the logistics initiative 4.10 *Urban distribution property and land use planning interventions* have been rated as most important for the Paris implementation where of the eleven success factors in this logistics initiative have been rated as ‘essential’.

The lowest importance of success factors for the Paris implementation can be seen in the logistics initiatives 4.4 *Urban consolidation centres/mobile depots* and 4.5. *Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)*. For the logistics initiative 4.4 *Urban consolidation centres/mobile depots* two out of eighteen of the success factors have been rated ‘Not relevant at all’, seven as ‘Low importance’.

Overall 61% of the 89 success factors for the Paris implementation have been rated as ‘essential’ or ‘high importance’.

3.7.6 STEP 6 Assessment of the support or constraint for success factors in the context of the CITYLAB adopter cities

Table 15 summarizes the results for the evaluation of the CITYLAB Paris implementation in context of the other CITYLAB cities. It can be seen that the best chance for successful transferability of the Paris implementation is given in Southampton. The chance in

Amsterdam and Rome for a successful transfer of the Paris implementation is on similar level. The score for London is a bit lower.

Table 15 – Results for Paris implementation

	CITYLAB city						
Logistics initiative	**London**	**Amsterdam**	**Brussels**	**Southampton**	**Oslo**	**Rome**	**max**
4.4	1	9	1	33	19	18	72
4.5	-6	-1	4	3	1	25	48
4.6.1	32	33	-7	31	25	12	86
4.10	-64	-8	-4	0	-4	-4	88
4.11	-44	59	13	15	-13	9	90
4.12	37	27	-4	31	44	25	82
Normalized score – sum	**45.80**	**61.52**	**50.55**	**61.88**	**57.68**	**60.58**	**100.00**
Rank	**6**	**2**	**5**	**1**	**4**	**3**	

4 STEP 7: Transferability of CITYLAB implementations to other CITYLAB cities

In this section the focus is on the different CITYLAB cities. The summary of the results of STEP 7 of the CITYLAB transferability analysis will be presented. Details on these results are given in Appendix C. Subsection 4.1 will describe the most important findings for each CITYLAB city concerning the chances for successful transfer of other CITYLAB implementations. Furthermore general recommendations on how to increase the chances for successful transfer will be given to each CITYLAB city.

Finally, subsection 4.2 summarizes the results of the CITYLAB transferability analysis. The derived chart overview gives an overview in which for each combination of CITYLAB city and CITYLAB implementation the chance for successful transfer is outlined.

4.1 Results in context of the CITYLAB cities

As the last step of the CITYLAB transferability analysis this subsection presents the results in context of the CITYLAB cities. For this the answers on the support or constraint for success factors of CITYLAB implementations are summarized for each CITYLAB city. As a first step the answers of the CITYLAB cities have been assessed in general. This will give an overview of the general context in the cities concerning the possibilities for the successful implementation of CITYLAB solutions. Following this there will be an overview on the most important success factors which are relevant for the improvement of the chances for successful implementation of CITYLAB solutions for each CITYLAB city. Recommendations for the improvement of the framework conditions in the CITYLAB cities to extend the chances for success will be derived.

Details on the support or constraint of success factors for all CITYLAB cities in combination with all CITYLAB implementations will be given in Appendix C.

4.1.1 London: Chances of successful transfer of CITYLAB implementations

The results of the assessment of 119 success factors show that generally the conditions in London for a successful transfer of other CITYLAB implementations is less promising than in other CITYLAB cities: Only 25 out of 119 success factors were rated as ‘strong support’ and 20 success factors were rated as ’support’. In contrast, 46 success factors were rated as ‘strong constraint’ and 17 success factors were rated as ‘constraint’. Seven success factors are rated ‘neutral’ in London. Only for four success factors no answer was given.

Despite the fact that London’s conditions facilitating logistics initiatives are below average, the conditions to implement logistics initiative 4.6.1. E*lectric and other alternatively-fuelled goods vehicles* are the best of all CITYLAB cities.

Table 16 represents the results of the analysis of each CITYLAB implementation specifically in context of London’s conditions. The chances for a successful transfer of the Southampton and Rome implementations seem superior: Both implementations have the highest normalized scores and are ranked as ‘1’. In contrast, the CITYLAB city London is ranked as ‘6’ (lowest scores) for a successful transfer of the implementations of Amsterdam, Oslo, and Paris, and Brussels as ‘4’.

Table 16 – CITYLAB implementations in context of the CITYLAB city London

	CITYLAB implementation						
	Amsterdam	**Brussels**	**Southampton**	**Oslo**	**Rome**	**Paris**	**max**
Normalized score	**48.65**	**62.89**	**70.24**	**39.94**	**66.02**	**45.80**	**100.00**
Rank	**6**	**4**	**1**	**6**	**1**	**6**	

A comprehensive overview of the results for the CITYLAB city London in relation to each implementation is given in Appendix C, Section 8.1. It includes a detailed analysis of the success factors. Specific recommendations for city authorities and urban planners how to improve the conditions for a successful transfer of each CITYLAB implementation will be given.

Summarising the results on the transferability of all CITYLAB solution to the CITYLAB city London we can conclude that the improvement of the support for the following success factors in the CITYLAB city London will in improve the chance for successful transfer of different implementations:

- SF4 - Industry can obtain appropriate location for the consolidation centre
- SF5 It will be possible to make use of existing depot/warehouse space to reduce capital costs
- SF27 - Good advance knowledge / warning for carriers about future demand for product movement and available loads
- SF49 - Sufficiently wide range of vehicle availability by vehicle manufacturers

The improvement of the support for success factor SF4 will raise the chance of the successful implementation of the CITYLAB implementations from Amsterdam, Oslo, and Paris. We recommend to the CITYLAB city London to provide and develop appropriate areas for the location of consolidation centres and logistics locations.

The improvement of the support for success factor SF5 will raise the chance of the successful implementation of the CITYLAB implementations from Amsterdam, Oslo, and Paris. We recommend to the CITYLAB city London to make sure that areas dedicated to logistics land use are not used for other purposes in future time. It is important to preserve these areas and existing buildings for logistics companies.

The improvement of the support for success factor SF27 will raise the chance of the successful implementation of the CITYLAB implementations from Amsterdam, Oslo, and Paris. We recommend to the CITYLAB city London to find industry partners with very good information and communication structures to make sure that information for future demand for product movement and available loads is available.

The improvement of the support for success factor SF49 will raise the chance of the successful implementation of the CITYLAB implementations from Amsterdam, Southampton, and Paris. The establishment of a broad range of electric vehicles could not be initiated by cities. It is the role of the car manufacturing industry to supply a sufficiently wide range. We recommend to the CITYLAB city London to address this issue in consultation of the vehicle manufacturers. As the range of electric vehicles is assumed the chance for successful implementation of the mentioned CITYLAB solutions will improve.

4.1.2 Amsterdam: Chances of successful transfer of CITYLAB implementations

The assessment of all success factors in context of the CITYLAB cities shows that the conditions in Amsterdam are very good compared to all other CITYLAB cities. There are high chances for a successful transfer of CITYLAB implementation: All together 21 out of 119 requested success factors were rated as ‘strong support’. Furthermore 49 success factors were rated as ‘support’. On the other side only 6 success factors were rated as ‘constraint’, 12 as ‘strong constraint’. Eighteen success factors are rated ‘neutral’ in Amsterdam. For 13 success factors there was no answer given. In detail the conditions in Amsterdam are very good to implement logistics initiatives 4.6.2 *Cargo cycles for freight*, 4.8 *Common internal logistics for a major multi-tenanted building or area (including reception and storage facilities and internal logistics)*, and 4.11 *Non-road modes*.

Table 17 shows the scores and the ranking for the chances of successful implementation of CITYLAB solutions in the context of the CITYLAB city Amsterdam. There are relatively good chances for a successful transfer of the CITYLAB solutions in Southampton and Paris in the context of the CITYLAB city Amsterdam as they are ranked ‘2’ in comparison to other CITYLAB cities. Despite the same ranking the normalized score for the Southampton implementation is higher than the normalized score for the Paris implementation. The normalized scores for the implementation in London, Oslo, and Rome are on similar levels. Compared to other CITYLAB cities the chances of successful implementation of this solution are lower. These implementations are ranked ‘4’ and ‘5’. The chance for a successful implementation of the CITYLAB Brussels solution is comparablly low, as the conditions in Amsterdam for the Brussels implementation are ranked ‘6’.

Table 17 – CITYLAB implementations in context of the CITYLAB city Amsterdam

	CITYLAB implementation						
	London	**Brussels**	**Southampton**	**Oslo**	**Rome**	**Paris**	**max**
Normalized score	**57.51**	**50.39**	**69.05**	**58.91**	**58.51**	**61.52**	**100.00**
Rank	**5**	**6**	**2**	**4**	**5**	**2**	

Details on the results for the CIYTLAB city Amsterdam in relation to each CITYLAB implementation are given in Appendix C, section 8.2. In Appendix C specific recommendations for city authorities and urban planners how to improve the conditions for a successful transfer of CITYLAB implementations to the CITYLAB city Amsterdam are given.

The results show that there are different success factors for which improved support can increase the chance for successful transfer of CITYLAB implementations to Amsterdam. Summarizing these results it can be seen that the support for the success factors SF4, SF47, and SF135 may be improved in Amsterdam to increase the chances for successful transfer of different CITYLAB implementations. The improved support for other success factors has effects on just one implementation.

The improved support for the success factor SF4 *Obtaining appropriate location for the consolidation centre* is relevant for the CITYLAB implementations London and Oslo. Accordingly, we recommend to the CITYLAB city Amsterdam to provide and develop appropriate areas for the location of consolidation centres and logistics locations.

The improved support for the success factor SF47 *Availability of refuelling/recharging networks* is relevant for the CITYLAB implementations in London and Southampton. To improve the support for this success factor we recommend to the CITYLAB city Amsterdam to install further electric charging infrastructure according to the needs of commercial freight transport in the urban area of Amsterdam. Overall the improved support for the use of electric vehicles in urban freight transport will increase the chances for successful implementation of CITYLAB solutions in the context of the CITYLAB city Amsterdam.

The improvement of the support for the success factor SF135 *Need support of senior managers (public and private) – support of political representative also helpful* will increase the chances for successful transfer of the CITYLAB implementations in Brussels and Rome. We recommend to the CITYLAB city Amsterdam to get in contact with senior managers in private companies as well as public authorities to make sure they support the transfer of CITYLAB solutions. Aims and advantages of the CITYLAB implementations need to be communicated. Additional to this the support by political decision in this is needed as well. Overall the inclusion of all relevant actors and stakeholders will help the CITYLAB city Amsterdam to improve the chance for successful transfer of solutions.

4.1.3 Brussels: Chances of successful transfer of CITYLAB implementations

From the results of the data collection concerning the support or constraint for success factors of logistics initiatives it can be seen, that the conditions in the CITYLAB city Brussels are comparablly weak. For 9 out of all 119 requested success factors in the context of the CITYLAB city Brussels the ranking was ‘strong support’. Furthermore there 25 success factors were rated as ‘support’. On the other side 24 success factors are rated as ‘constraint’, 15 as ‘strong constraint’. Seventeen success factors are rated ‘neutral’ in Brussels. For 29 success factors there was no answer given.

Overall there are more success factors rated as ‘constraints’ in Brussels. The conditions in Brussels are well below average compared to all other CITYLAB cities when it comes to the support for all logistics initiatives.

As shown in Table 18 the conditions for the transfer of CITYLAB implementations to the CITYLAB city Brussels are well below average for all implementations. In comparison to the other CITYLAB cities Brussels is ranked ‘5’ and ‘6’ out of six cities. Thus we must conclude that the chances for successful transfer of implementation are very weak in Brussels.

Table 18 – CITYLAB implementations in context of the CITYLAB city Brussels

	CITYLAB implementation						
	London	**Amsterdam**	**Southampton**	**Oslo**	**Rome**	**Paris**	**max**
Normalized score	**49.82**	**49.95**	**45.83**	**48.96**	**48.70**	**50.55**	**100.00**
Rank	**6**	**5**	**6**	**5**	**6**	**5**	

Details on the results for the CIYTLAB city Brussels in relation to each CITYLAB implementation are given in Appendix C, section 8.3. In Appendix C specific recommendations for city authorities and urban planners how to improve the conditions for a successful transfer of CITYLAB implementations to the CITYLAB city Brussels are given.

There are several success factors where to improved support for in Brussels will increase the chance for the successful transfer of one CITYLAB implementation. In this section we discuss success factors where the improved support will have an effect on different implementation.

Increased support for success factor SF35 *Purchase price of clean vehicles* will have positive effects on the chance for successful transfer of the implementations from Southampton and

Paris. It is seen as an essential success factor for these implementations. Purchase price differentials with conventional vehicles may be key reason for discontinuation of trials and schemes. Thus measures to reduce the price gap between clean vehicles and conventional vehicles may be taken.

Additional to this the success factors SF47 *Availability of refuelling/recharging networks* and SF50 *Time taken for refuelling/recharging* which are connected to the use of electric vehicles as well have effects on the chance for successful transfer of the implementations from London and Southampton in context of the CITYLAB city Brussels. Thus it is recommended to Brussels to install appropriate charging infrastructure for electric commercial vehicles. Measures to reduce charging times for commercial vehicles must be taken.

Furthermore the improved support for the success factor SF143 *Need clear responsibility for actions allocated across members* which is connected to the partnership working in supply chain operations will increase the chance for successful transfer of implementations from Rome and Paris to Brussels.

4.1.4 Southampton: Chances of successful transfer of CITYLAB implementations

In general the conditions in Southampton for the transfer of CITYLAB implementations are quite good compared to all other CITYLAB cities. In general 9 out of all 119 requested success factors are rated as 'strong support' in the context of the CITYLAB city Southampton. Furthermore 38 success factors are rated as 'support'. On the other side 12success factors are rated as 'constraint', one as 'strong constraint'. 43 success factors are rated 'neutral' in Southampton. For 16 success factors there was no answer given.

Overall there is more support than constraints in Southampton on the requested success factors. In detail the conditions in Southampton are very good compared to other CITYLAB cities when it comes to the support for the logistics initiatives 4.4 *Urban consolidation centres/mobile depots*, 4.6.1 *Electric and other alternatively-fuelled goods vehicles*, 4.10 *Urban distribution property and land use planning interventions*, and 4.11 *Non-road modes*.

Table 19 shows that the conditions for a transfer of the Paris implementation are the best in Southampton compared to all other CITYLAB cities. Thus the chance for successful implementation of the Paris solution is best in Southampton. For the other CITYLAB implementations the conditions in Southampton are rather weak even if the normalized scores for Amsterdam and Rome are comparable.

Table 19 – CITYLAB implementations in context of the CITYLAB city Southampton

	CITYLAB implementation						
	London	**Amsterdam**	**Brussels**	**Oslo**	**Rome**	**Paris**	**max**
Normalized score	**59.61**	**61.89**	**52.84**	**58.96**	**62.38**	**61.88**	**100.00**
Rank	**4**	**3**	**5**	**3**	**4**	**1**	

Details on the results for the CIYTLAB city Southampton in relation to each CITYLAB implementation are given in Appendix C, section 8.4. In Appendix C specific recommendations for city authorities and urban planners on how to improve the conditions for a successful transfer of CITYLAB implementations to the CITYLAB city Southampton are given.

In summary we can report that the increased support for the success factors SF22 *Less suited to goods that are time-critical* and SF25 *More suited to operations that are not subject* *to complex scheduling constraints* will have positive effects on three different CITYLAB implementations. Increased support for the success factor SF22 will increase the chances of successful transfer of the implementations from London, Brussels, and Rome. Thus it is recommended to Southampton to focus activities on goods which are not time-critical. Better support for the success factor SF25 will have positive effects on the chances for transfer of the implementations from Brussels, Oslo, and Paris.

4.1.5 Oslo: Support or constraint for success factors of CITYLAB implementations

The conditions in Oslo are very good compared to all other CITYLAB cities when it comes to the support for logistics initiatives. In general 24 out of all 119 requested success factors in the context of the CITYLAB city Oslo are rated as ‘strong support’. Furthermore 45 success factors are rated ‘support’. On the other side 18 success factors are rated as ‘constraint’, 11 as ‘strong constraint’. Nineteen success factors are rated ‘neutral’ in Oslo. For only 2 success factors there was no answer given. Overall there is more support than constraints in Oslo on the requested success factors. In detail the conditions in Oslo are very good compared to other CITYLAB cities when it comes to the support for the urban freight initiatives 4.4 *Urban consolidation centres/mobile depots*, 4.6.2 *Cargo cycles for freight*, 4.8 *Common internal logistics for a major multi-tenanted building or area (including reception and storage facilities and internal logistics)*, and 4.12 *Partnership working in the supply chain operations*.

There are very good chances for a successful transfer of the London implementation to the CITYLAB city Oslo as the normalized score for Oslo is the highest compared to all CITYLAB cities. Accordingly Oslo is ranked as ‘1’ for this implementation (see Table 20). Even for other implementations the chances for successful transfer to Oslo are comparably good. Oslo is ranked ‘2’ for the implementations in Amsterdam and Brussels. For the implementations in Southampton and Rome, the CITYLAB city Oslo is ranked ‘3’.

Table 20 – CITYLAB implementations in context of the CITYLAB city Oslo

	CITYLAB implementation						
	London	**Amsterdam**	**Brussels**	**Southampton**	**Rome**	**Paris**	**max**
Normalized score	**63.58**	**62.45**	**66.37**	**63.10**	**64.39**	**57.68**	**100.00**
Rank	**1**	**2**	**2**	**3**	**3**	**4**	

Details on the results for the CIYTLAB city Oslo in relation to each CITYLAB implementation are given in Appendix C, section 8.5. In Appendix C specific recommendations for city authorities and urban planners on how to improve the conditions for a successful transfer of CITYLAB implementations to the CITYLAB city Oslo are given.

In summary we can see that the improved support for two success factors have positive effects on multiple implementations. There are five implementations where the increased support for success factor SF46 *City access regulations/regulatory support for clean vehicles* increases the chances for successful transfer. These implementations are: London, Amsterdam, Southampton, Rome, and Paris. Success factor SF25 *More suited to operations that are not subject to complex scheduling constraints* has influence on the chance of transfer of CITYLAB implementations from Amsterdam, Brussels, Rome, and Paris.

As there are effects on different implementations in Oslo expected, we recommend improved support for access regulations for electric vehicles in Oslo. Advantages for electric vehicles concerning the access to the city will ease the use of electric vehicles in commercial transport and urban freight and thus increase the chances of successful transfer of the above mentioned implementations to the CITYLAB city Oslo.

Furthermore the City of Oslo should focus more on activities related to goods where there are no complex scheduling constraints. Such goods might not be suitable for the successful transfer of several CITYLAB implementations as described above.

4.1.6 Rome: Support or constraint for success factors of CITYLAB implementations

The conditions in Rome are quite good compared to all other CITYLAB cities when it comes to the support for logistics initiatives. In general 10 out of all 119 requested success factors in the context of the CITYLAB city Rome are rated as ‘strong support’. Furthermore 40 success factors are rated as ‘support’. On the other side 12 success factors are rated as ‘constraint’, one as ‘strong constraint’. 25 success factors are rated ‘neutral’ in Rome. For 31 success factors there was no answer given. Overall there is more support than constraints in Rome on the requested success factors. In detail the conditions in Rome are very good compared to other CITYLAB cities when it comes to the support for the urban freight initiative 4.5 *Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)*.

Table 21 shows that the context of the CITYLAB city Rome is best suited for successful transfer of the implementations from Amsterdam and Oslo compared to all other CITYLAB cities. Even if the normalized scores for both combinations are a bit different, they are ranked as ‘1’ as the normalized scores for other CITYLAB cities concerning these implementations are lower. Concerning the implementations from London, Brussels, and Paris the context of the CITYLAB city Rome gives average chances for successful transfer.

Table 21 – CITYLAB implementations in context of the CITYLAB city Rome

	CITYLAB implementation						
	London	**Amsterdam**	**Brussels**	**Southampton**	**Oslo**	**Paris**	**max**
Normalized score	**62.27**	**63.46**	**63.85**	**58.93**	**68.58**	**60.58**	**100.00**
Rank	**3**	**1**	**3**	**4**	**1**	**3**	

Details on the results for the CIYTLAB city Rome in relation to each CITYLAB implementation are given in Appendix C, section 8.5. In Appendix C specific recommendations for city authorities and urban planners on how to improve the conditions for a successful transfer of CITYLAB implementations to the CITYLAB city Rome are given.

In summary of the results for the CITYLAB city Rome we can see that there are several success factors where the improved support for could increase the chances for successful transfer of two different CITYLAB implementations. Three of these success factors are part of the logistics initiative 4.6.1 *Electric and other alternatively-fuelled goods vehicles*:

- SF45 *Regulatory vehicle emissions standards*
- SF46 *City access regulations/regulatory support for clean vehicles*
- SF47 *Availability of refuelling/recharging networks*

It is thus recommended to the CITYLAB city Rome to improve the support for the use of electric vehicles in commercial transport through regulations which favour electric vehicles and the extension of the charging infrastructure for electric commercial vehicles.

Two success factors are part of the logistics initiative 4.10 *Urban distribution property and land use planning interventions*:

- SF106 *Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)*
- SF110 *City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)*

Additional to the recommendations given above, it is recommended to the CITYLAB city Rome to identify and protect areas for urban distribution activities. This will increase the chance for successful transfer of the implementations from London and Paris to the CITYLAB city Rome.

4.1.7 Paris: Support or constraint for success factors of CITYLAB implementations

The conditions in Paris are very good compared to all other CITYLAB cities when it comes to the support for logistics initiatives. In general 21 out of all 119 requested success factors in the context of the CITYLAB city Paris are rated as ‘strong support’. Furthermore 42 success factors are rated as ‘support’. On the other side 21 success factors are seen as ‘constraint’, four as ‘strong constraint’. 21 success factors are rated ‘neutral’ in Paris. For 10 success factors there was no answer given. Overall there is more support than constraints in Paris on the requested success factors. In detail the conditions in Paris are very good compared to other CITYLAB cities when it comes to the support for the logistics initiative 4.10 *Urban distribution property and land use planning interventions*.

As shown in Table 22 the conditions in the CITYLAB city Paris are best suited for the successful transfer of the CITYLAB implementation in Brussels. For this implementation the normalized score for Paris is the highest compared with all other CITYLAB cities and thus Paris is ranked as ‘1’. Furthermore the chances for successful transfer of implementations from London, Oslo, and Rome are very good as Paris is ranked as ‘2’ for all these implementations. Contrary to this Paris is ranked below average for the implementations from Amsterdam and Southampton.

Table 22 – CITYLAB implementations in context of the CITYLAB city Paris

	CITYLAB implementation						
	London	**Amsterdam**	**Brussels**	**Southampton**	**Oslo**	**Rome**	**max**
Normalized score	**63.53**	**57.42**	**71.73**	**58.33**	**63.49**	**64.41**	**100.00**
Rank	**2**	**4**	**1**	**5**	**2**	**2**	

Details on the results for the CIYTLAB city Paris in relation to each CITYLAB implementation are given in Appendix C, section 8.5. In Appendix C specific recommendations for city authorities and urban planners on how to improve the conditions for a successful transfer of CITYLAB implementations to the CITYLAB city Paris are given.

Summarising the results of the individual analysis of CITYLAB implementations in context of the CITYLAB city Paris we can see two success factors than stand out of the general analysis: The increased support for these success factors will increase the chances of successful transfer of the implementation from London, Amsterdam, and Oslo to the CITYLAB of Paris. Furthermore both of them are part of the logistics initiative 4.4 *Urban consolidation centres/mobile depots*. The related success factors are:

- SF2 *Keeping capital costs to a minimum*
- SF4 *Obtaining appropriate location for the consolidation centre*

It is recommended to the CITYLAB city Paris to further improve the conditions for the establishment of urban consolidation centres and mobile depots by measures which on the one hand help companies to keep capital costs for such depots low. On the other hand it is important to have appropriate locations for consolidation centres available as this is seen as essential success factor.

4.2 Summary of CITYLAB transferability analysis and deduction of final results

The approach for the transferability analysis was adopted from the TIDE project and was further developed to qualify for the CITYLAB requirements. The analysis is based on 119 success factors (SF) which were identified in CITYLAB Deliverable 2.3 to identify the challenges that need to be addressed and overcome by the private and public sectors in ensuring the successful uptake and outcome of the initiatives included in the CITYLAB implementations. By rating the level of each success factor within each CITYLAB city for each implementation the likelihood of a successful implementation of all CITYLAB implementation in other but there original implementing city could be assessed. As a last step recommendations for each city were derived regarding the field of action, where the environment should be improved to facilitate the implementation of different urban logistics measures. The CITYLAB approach is suitable to assess transferability of different logistics measures to other cities, and – if necessary – to depict areas, where cities can improve the condition to increase the chance for successful transfer of implementations.

Due to the unevenly allocated number of success factors for the CITYLAB implementations a normalisation of the ratings was necessary to avoid the over estimation of initiatives with a large number of success factors. Table 23 summarizes the normalized scores for all CITYLAB cities in relation to all CITYLAB implementations. The normalisation of the scores allows comparisons between all CITYLAB implementations and all CITYLAB cities. Additionally, all scores can be ranked. For each implementation the city with the highest score is highlighted in green. These implementations are ranked as ‘1’ in Table 24. Slight differences amongst the maximum scores for each implementation exist.

The range of the normalized scores is between 71.73 and 39.94. The combination of the Brussels implementation with the city of Paris figures the highest score among all combinations. Thus, the chance for a successful transfer of the Brussels implementation to Paris is the highest.

Table 23 – Chart overview - normalized scores

		CITYLAB City						
		London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
Implementation	London		57.51	49.82	59.61	63.58	62.27	63.53
	Amsterdam	48.65		49.95	61.89	62.45	63.46	57.42
	Brussels	62.89	50.39		52.84	66.37	63.85	71.73
	Southampton	70.24	69.05	45.83		63.10	58.93	58.33
	Oslo	39.94	58.91	48.96	58.96		68.58	63.49
	Rome	66.02	58.51	48.70	62.38	64.39		64.41
	Paris	45.80	61.52	50.55	61.88	57.68	60.58	

For each implementation the city with the highest score is highlighted in green.

For the CITYLAB city London the best chance for successful transfer is given for the Southampton implementation. For the Rome implementation the normalized score is on a similar level and thus there is a high chance for successful transfer of this implementation to the CITYLAB city London as well.

For the CITYLAB city Amsterdam there are relatively good chances for a successful transfer of the CITYLAB solutions in Southampton and Paris as they are ranked ‘2’ in comparison to other CITYLAB cities.

The conditions for the transfer of CITYLAB implementations to the CITYLAB city Brussels are well below average for all implementations. Compared to the other CITYLAB cities Brussels is ranked ‘5’ and ‘6’ out of six cities. Thus the chances for successful transfer of CITYLAB implementations are very low in Brussels.

For the CITYLAB city Southampton the conditions for a transfer of the Paris implementation are the best compared to all other CITYLAB cities. Thus the chance for successful implementation of the Paris solution is best in Southampton. For the other CITYLAB implementations the conditions in Southampton are rather weak and accordingly the ranking is low, even if the normalized scores for the Amsterdam implementation and the Rome implementation are on a comparable level with the Paris implementation.

For the CITYLAB city Oslo there are very good chances for a successful transfer of the London implementation as the normalized score for Oslo is the highest compared to all CITYLAB cities. Accordingly Oslo is ranked as ‘1’ for this implementation. Even for other implementations the chances for successful transfer to Oslo are comparably good. Oslo is ranked ‘2’ for the implementations in Amsterdam and Brussels. For the implementations in Southampton and Rome, the CITYLAB city Oslo is ranked ‘3’.

The context of the CITYLAB city Rome is best suited for successful transfer of the implementations from Amsterdam and Oslo compared to all other CITYLAB cities. These cities are ranked as ‘1’ while the normalized scores for other CITYLAB cities concerning these implementations are lower.

The conditions in the CITYLAB city Paris are best suited for the successful transfer of the CITYLAB implementation in Brussels. For this implementation the normalized score is the highest compared with all other CITYLAB cities and thus Paris is ranked as ‘1’. Furthermore the chances for successful transfer of implementations from London, Oslo, and Rome are very good as Paris is ranked as ‘2’ for all these implementations.

There are two CITYLAB cities which score best on two different implementations (London for the Southampton and Rome implementation; Rome for the Amsterdam and Oslo implementation).

Table 24 – Chart overview - ranking

		City						
		London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
Implementation	London		5	6	4	1	3	2
	Amsterdam	6		5	3	2	1	4
	Brussels	4	6		5	2	3	1
	Southampton	1	2	6		3	4	5
	Oslo	6	4	5	3		1	2
	Rome	1	5	6	4	3		2
	Paris	6	2	5	1	4	3	

The summary of the analysis of the success factors which influence the chances for successful transfer of CITYLAB implementations to other CITYLAB cities shows, that there is a wide range of success factors which have effects on different implementations in different cities. But some success factors stand out from the rather heterogeneous picture. The success factors SF4 *Obtaining appropriate location for the consolidation centre* and SF47 *Availability of refuelling/recharging networks* have been present in three different CITYLAB cities as success factors, where the increased support can have effects on the chances of successful transfer for different CITYLAB solutions. The success factors SF25 *More suited to operations that are not subject to complex scheduling constraints* and SF46 *City access regulations/regulatory support for clean vehicles* have been present in two different cities each. Overall, no further conclusions can be drawn at this point since the cities and implementations are very different.

Sensitivity analysis has been conducted for the transferability analysis. For this the weight of the logistics initiatives has been altered. This has shown that there are minor changes in the normalized scores and the ranking of the cities for each implementation, but in general the results were quite stable. Sensitivity analysis did not indicate the need for rebalance of weights.

As a result, the transferability analysis could show for each city which implementations have the best chance for successful transfer. For each city, success factors have been identified that can help to improve the chance for successful transfer of the implementations and can serve as a basis developing strategic plan on city level

Overall, however, no general statements on the success factors are possible as the implementations are very different in the importance of the success factors. Furthermore, the cities offer very different conditions concerning the support and constraint for the success factors. These differences were very well illustrated by the CITYLAB methodology which exploits a broad selection of success factors.

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Appendix A – Detailed results on importance of success factors

Not relevant at all	0
Low importance	1
Medium importance	2
High importance	3
Essential	4

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
1	II.4.4 Urban consolidation centres/mobile depots								
2	4.4	Keeping capital costs to a minimum	3			3		3	
3	4.4	Revenue generation from value added services	2			2		4	
4	4.4	Obtaining appropriate location for the consolidation centre	4			4		3	
5	4.4	Making use of existing depot/warehouse space to reduce capital costs	4			4		4	
6	4.4	Avoiding the need for expensive handling systems	2			3		1	
7	4.4	Sufficient product throughput to generate revenue	2			3		3	
8	4.4	Selecting suitably sized vehicles to make deliveries from centre	4			3		1	
9	4.4	Generating two-way flows on vehicles delivering from the centre	3			2		1	
10	4.4	Method for allocation of costs and benefits arising from centre between supply chain users	3			4		1	
11	4.4	Development of suitable charging mechanisms to reflect costs and benefits arising from centre	3			4		1	
12	4.4	Existence of a single site owner/landlord	0			4		3	
13	4.4	Contractual compulsion to make receivers use the centre	0			4		0	

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
14	4.4	Regulatory compulsion to make receivers use the centre	0			4		0	
15	4.4	Implementation of related supportive urban freight transport measures	2			1		3	
16	4.4	Need for public financial support during start-up phase	0			0		3	
17	4.4	Hypothecated public funding for traffic and environmental benefits provided by consolidation centre	2			1		3	
18	4.4	Focusing on product types with limited logistics handling / storage requirements	1			0		1	
19	4.4	Need for planning systems / flow optimisation when handling goods from and for multiple users	3			3		1	
20	II.4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)								
21	4.5	Close inter-company working (between shippers, carriers and receivers)	4	2	3		3	2	1
22	4.5	Less suited to goods that are time-critical	2	1	3		1	4	1
23	4.5	Less suited to goods with specialised transport requirements (for reducing empty running)	1	3	4		2	0	1
24	4.5	Suits operations with balanced flows of product in both directions (for reducing empty running)	1	2	1		2	4	2
25	4.5	More suited to operations that are not subject to complex scheduling constraints	1	3	3		3	2	3
26	4.5	More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging	2	1	1		2	4	1
27	4.5	Good advance knowledge / warning for carriers about future demand for product movement and available loads	2	3	2		4	1	3
28	4.5	Desire to reduce vehicle activity and negative impacts (as well as to achieve	3	3	3		3	3	3

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		cost savings) among supply chain partners							
29	4.5	Changes in maximum permissible weight / size dimensions for vehicles (in general or in given urban location)	1	2	0		0	1	2
30	4.5	Process standardisation via iso-modular units	0	2	1		1	2	2
31	4.5	Design/configuration of vehicle carrying space	3	2	1		3	2	2
32	4.5	Availability of suitable handling equipment to make it easier and quicker to load and unload vehicles	1	3	1		2	2	3
154	4.5	Willingness to order online			4				
155	4.5	Ability to pay online (internet connectivity / registered bank account or credit card available)			3				
156	4.5	Wide product assortment			2				
34	II.4.6.1 Electric and other alternatively-fuelled goods vehicles								
35	4.6.1	Purchase price of clean vehicles	3	3		3		1	3
36	4.6.1	Comparative fuel prices	2	2		3		0	3
37	4.6.1	Comparative maintenance and servicing costs	2	2		3		0	2
38	4.6.1	Coverage of capital costs associated with recharging systems	2	1		3		1	3
39	4.6.1	Availability of vehicle information of a sufficiently wide and detailed basis	2	2		2		0	1
40	4.6.1	Comparative payload of clean vehicles (weight and volume)	3	2		1		2	3
41	4.6.1	Comparative vehicle reliability	3	3		3		0	3
42	4.6.1	Type of operating patterns of carrier (distance, duration, intensity of vehicle use)	3	3		4		2	1
43	4.6.1	Public support for clean vehicles	3	3		2		2	2
44	4.6.1	Corporate Social Responsibility (CSR)	3	3		2		4	4

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		commitments and concerns about corporate image of shippers and receivers							
45	4.6.1	Regulatory vehicle emissions standards	3	2		3		2	4
46	4.6.1	City access regulations/regulatory support for clean vehicles	3	3		3		2	4
47	4.6.1	Availability of refuelling/recharging networks	4	3		4		1	3
48	4.6.1	Availability of green electricity	4	2		2		1	2
49	4.6.1	Sufficiently wide range of vehicle availability by vehicle manufacturers	3	3		2		2	3
50	4.6.1	Time taken for refuelling/recharging	4	2		2		1	2
51	II.4.6.2 Cargo cycles for freight								
52	4.6.2	Requirement of low-cost overnight central urban parking location		3					
53	4.6.2	Need for suitable size and weight of freight carried		3					
54	4.6.2	Need for suitably sized catchment area for deliveries (i.e. short stem distances)		3					
55	4.6.2	Public and organisational support for environmentally- and traffic-friendly freight		2					
56	4.6.2	Implementation of cycling-friendly infrastructure (including on-street parking facilities)		4					
57	4.6.2	Road traffic safety legislation and enforcement		3					
58	4.6.2	Driver training (especially for HGV drivers)		2					
59	4.6.2	Awareness schemes to raise profile of cycle freight		3					
60	4.6.2	City centre vehicle access and parking/loading restrictions for other freight vehicles		3					
61	4.6.2	Land use planning regulations to keep delivery distances viable (especially in		2					

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		terms of shopping centre location)							
62	4.6.2	Technological assistance to increase electrically-assisted cycle speed thereby increasing catchment/range		3					
63	4.6.2	Availability of recharging networks		2					
64	4.6.2	Availability of green electricity		2					
80	II.4.8 Common internal logistics for a major multi-tenanted building or area (including reception and storage facilities and internal logistics)								
81	4.8	Commitment and support of senior executives in tenant receiver companies and site manager / owner					0		
82	4.8	Collaborative and joint planning/working between supply chain partners (shippers, carriers, receivers and site managers/owners)					2		
83	4.8	Importance of overcoming receiver concerns about legal liability for goods in a common logistics environment					1		
84	4.8	Overcoming initial preconceptions of tenant receiver companies and their staff can be required					2		
85	4.8	Most suited to non-business critical products					3		
86	4.8	Need to develop an approach that is cost neutral or better if not a compulsory scheme					2		
87	4.8	Emphasis on reduction in local traffic and environmental impacts can be important in gaining support of receivers					2		
88	4.8	Site owner can consider imposing use of, and charges for, common internal logistics as requirement of tenancy					0		
89	4.8	Good record-keeping and tracking of delivered items important in resolving potential delivery disputes					3		

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
103	II.4.10 Urban distribution property and land use planning interventions								
104	4.10	Can be implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities	3						4
105	4.10	Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)	1						2
106	4.10	Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)	4						4
107	4.10	Possible need for public subsidy of costs of suitable urban logistics land (countering logistics sprawl)	3						1
108	4.10	Political difficulty in limiting development that prevents logistics use in future (especially residential development)	3						2
109	4.10	City planning authority has to take initiative/lead	2						3
110	4.10	City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)	4						3
111	4.10	Facilitation of acquisition of building permits in some cases	2						4
112	4.10	Quantification/ forecasting freight trip generation rates associated with different types of land use (freight travel planning for major sites)	1						3
113	4.10	Understanding the freight transport compatibility of different land use types (mixed use developments countering logistics sprawl)	1						3

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
114	4.10	Promoting innovation in architecture and building techniques for urban warehouses	0						4
115	II.4.11 Non-road modes								
116	4.11	Clear leadership from major public sector stakeholder backing modal shift		1					4
117	4.11	Formation of working group including all stakeholders		1					2
118	4.11	Research into most appropriate types of non-road urban freight services/product flows		3					3
119	4.11	Research into degree of penetration of urban areas best suited to characteristics of non-road modes		3					3
120	4.11	Evidence base to alter perception of possible users in relation to flexibility, reliability and cost of non-road modes		2					3
121	4.11	Focus on longer distance product flows due to terminal handling and transfer costs		3					3
122	4.11	Close involvement of logistics providers, with multiple customers within the urban area, to help aggregate sufficient volumes (such as parcels or retail products)		2					2
123	4.11	Cooperation between the shippers and between the logistic operators (in order to bundle/consolidate flows)		0					2
124	4.11	Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road		4					4
125	4.11	Achievement of service flexibility and reliability equivalent to direct delivery by road		4					3
126	4.11	Scope to consolidate goods flows destined for the urban area		3					1
127	4.11	User support / Corporate Social Responsibility for reducing environmental		2					3

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		and traffic impacts							
128	4.11	Existence of sidings and wharves (to connect services to customers)		3					2
129	4.11	Availability of paths for non-road freight vehicles on the urban network		3					3
130	4.11	Availability of suitable sites and suitable costs for goods handling and road access		3					2
131	4.11	Ability to utilise space for smaller freight consignments on existing passenger rail services		0					1
132	4.11	Efficient goods handling/terminal equipment		3					4
133	II.4.12 Partnership working in the supply chain operations								
134	4.12	Need to involve a wide range of stakeholders	3	1	1		3	3	3
135	4.12	Need support of senior managers (public and private) – support of political representative also helpful	3	1	4		2	4	3
136	4.12	Appropriate funding has to be identified – to support administrative tasks and actions	2	1	0		3	4	2
137	4.12	Softer' solutions based on collaboration rather than regulation and restriction are likely to be more acceptable and beneficial	3	2	3		1	2	3
138	4.12	Need to find common ground between disparate stakeholders and views	3	2	3		3	2	2
139	4.12	Focus and direction needs of the partnership needs to be based on consensus.	3	0	3		2	3	2
140	4.12	People’s expectations need to be managed and based on realistic outlooks	3	0	3		3	3	3
141	4.12	The partnership should work on a variety of issues	2	0	1		0	3	3
142	4.12	Need to avoid becoming a talking shop – requires specific actions and tasks with	2	0	1		0	2	4

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		timescales							
143	4.12	Need clear responsibility for actions allocated across members	2	0	3		2	3	3
144	4.12	Communication and transparency are critical to partnership success	3	2	3		4	2	3
145	4.12	A chair and administrator are necessary to direct and take forward the work of the partnership	2	0	3		3	3	4
146	4.12	Requires enthusiastic support from members to improve efficiency and reduce external impacts	1	2	2		4	2	3
147	4.12	Requires clear structure, Terms of Reference and Action Plan, based on achievable goals	2	0	3		4	3	2
148	4.12	Online meeting tools assist and increase participation in national and international partnerships	0	1	4		0	3	1
149	4.12	Social diffusion among relevant community members of participants' role and achievements obtained via dedicated and general-purpose media						3	
150	4.12	Implementation of multi-purpose gamification and stakeholder engagement dedicated tools						3	
151	4.12	Development of a third-party green logistic integrated certification measurement system (linked to both previous points)						3	
152	4.12	Start-up support to involve and instruct customers (storeowners)			4				
153	4.12	Creation software platform to track all operations and communication when multiple companies are involved, particularly with more shippers			3				

Appendix B – Detailed results on support and constraint for success factors

-2 strong constraint

-1 constraint

0 neutral

1 support

2 strong support

na no answer

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
1	II.4.4 Urban consolidation centres/mobile depots								
2	4.4	We can keep capital costs for urban consolidation centres/mobile depots to a minimum	-2	1	na	0	0	na	-2
3	4.4	Industry can generate revenue from value added services	0	1	0	1	1	-1	-1
4	4.4	Industry can obtain appropriate location for the consolidation centre	-2	1	1	2	-1	2	-2
5	4.4	It will be possible to make use of existing depot/warehouse space to reduce capital costs	-2	2	1	2	1	2	1
6	4.4	Industry can avoid the need for expensive handling systems	-1	0	-2	1	1	0	2
7	4.4	We can ensure sufficient product throughput to generate revenue	2	1	1	-1	2	1	0
8	4.4	Suitably sized vehicles will be selected to make deliveries from centre.	2	1	na	2	1	2	1
9	4.4	There will be two-way flows on vehicles delivering from the centre.	1	1	-1	0	2	1	-1
10	4.4	We can provide method for allocation of costs and benefits arising from centre between supply chain users.	-2	0	na	0	-1	-1	-1
11	4.4	We can develop suitable charging mechanisms to reflect costs and benefits arising from centre.	-2	0	na	1	2	0	0
12	4.4	We can ensure there is a single site	-1	1	na	1	2	1	2

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		owner/landlord.							
13	4.4	We have contractual obligations to make receivers use the centre.	-2	0	-2	-1	2	na	na
14	4.4	We have regulatory obligations to make receivers use the centre.	-2	-2	1	-1	-2	na	na
15	4.4	We will implement related supportive urban freight transport measures.	2	-2	0	1	0	1	1
16	4.4	We can provide public financial support during start-up phase.	2	-2	-1	1	-2	-2	1
17	4.4	There is public funding for consolidation centre impacting positively on traffic and environment available.	2	-2	-1	1	0	0	0
18	4.4	There will be a focus on product types with limited logistics handling / storage requirements.	1	0	na	0	2	1	0
19	4.4	There will be planning systems / flow optimisation when handling goods from and for multiple users.	1	1	na	2	1	2	0
20	II.4.5 Improving loads carried on goods vehicles (vehicle fill and return loads/empty running)								
21	4.5	We can ensure close inter-company working (between shippers, carriers and receivers).	2	-2	-1	0	1	1	-1
22	4.5	We will avoid the inclusion of goods that are time-critical.	2	-2	na	-2	-1	-1	0
23	4.5	We will avoid goods with specialised transport requirements (for reducing empty running).	-1	-2	na	-1	-1	0	1
24	4.5	We will focus on operations with balanced flows of product in both directions (for reducing empty running).	-1	-2	na	0	1	2	na
25	4.5	We will avoid operations that are subject to complex scheduling constraints.	-1	-2	na	-1	-2	1	1
26	4.5	We will focus on goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging.	-1	1	na	0	1	2	2
27	4.5	Industry will have good advance knowledge and there will be warning for carriers about future demand for product movement and	-2	-1	na	0	0	1	0

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		available loads.							
28	4.5	There will be desire to reduce vehicle activity and negative impacts (as well as to achieve cost savings) among supply chain partners.	2	2	1	1	1	2	-1
29	4.5	There will be changes in maximum permissible weight / size dimensions for vehicles (in general or in given urban location).	2	2	1	na	-2	0	1
30	4.5	We can standardise processes via iso-modular units.	0	0	na	na	0	1	-1
31	4.5	Design/configuration of vehicle carrying space suits carried goods and return loads.	-2	2	na	0	0	1	na
32	4.5	There is suitable handling equipment to make it easier and quicker to load and unload vehicles.	-1	1	na	2	2	1	1
154	4.5	Storeowners are willing to order online.	1	na	-2	na	1	na	1
155	4.5	Storeowners are able to pay online (internet connectivity / registered bank account or credit card available).	1	1	-2	na	2	na	1
156	4.5	Storeowners have a wide product assortment.	0	1	0	na	0	na	1
34	II.4.6.1 Electric and other alternatively-fuelled goods vehicles								
35	4.6.1	There are comparative purchase prices of clean vehicles.	0	-1	-2	-1	2	1	-1
36	4.6.1	There are comparative fuel prices for electric vehicles.	0	2	2	1	2	1	2
37	4.6.1	There are comparative maintenance and servicing costs for electric vehicles.	0	0	0	0	0	1	2
38	4.6.1	We can cover capital costs associated with recharging systems.	-2	0	na	1	1	0	0
39	4.6.1	We can make vehicle information available of a sufficiently wide and detailed basis.	1	0	na	1	0	1	1
40	4.6.1	Comparative payload of clean vehicles is given (weight and volume).	1	1	-1	1	-1	0	na
41	4.6.1	Comparative vehicle reliability for electric vehicles compared with conventional vehicles is given.	0	1	na	0	na	na	1

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
42	4.6.1	Types of operating patterns of carrier (distance, duration, intensity of vehicle use) fit electric vehicles.	2	2	0	2	-1	1	0
43	4.6.1	We can provide public support for clean vehicles.	2	-1	0	2	1	-1	2
44	4.6.1	There are corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers	2	1	1	1	1	1	1
45	4.6.1	We have regulatory vehicle emissions standards that favour the use of electric vehicles.	1	2	1	2	2	0	1
46	4.6.1	We have city access regulations (regulatory support) for clean vehicles.	2	1	-1	1	-2	0	-1
47	4.6.1	There are refuelling/recharging networks available.	2	1	-1	-1	1	0	0
48	4.6.1	Green electricity is available.	2	na	1	0	1	0	0
49	4.6.1	There is sufficiently wide range of vehicle availability by vehicle manufacturers given.	-2	1	-1	1	1	0	-2
50	4.6.1	Time taken for refuelling/recharging fits operating patterns.	2	1	-2	1	na	0	-1
51	II.4.6.2 Cargo cycles for freight								
52	4.6.2	We can provide low-cost overnight central urban parking location.	-1	2	0	-1	1	na	0
53	4.6.2	Size and weight of freight carried suits cargo cycles.	-1	0	na	0	1	2	-1
54	4.6.2	There is a suitably sized catchment area for deliveries (i.e. short stem distances).	-1	2	0	0	2	1	1
55	4.6.2	We provide public and organisational support for environmentally- and traffic-friendly freight.	2	1	1	1	2	1	0
56	4.6.2	We can implement cycling-friendly infrastructure (including on-street parking facilities).	-2	2	-1	-1	1	na	1
57	4.6.2	We have road traffic safety legislation and enforcement that support cargo cycles.	-2	2	0	-1	1	na	2
58	4.6.2	There will be driver training (especially for HGV drivers).	1	1	na	0	1	na	1

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
59	4.6.2	We have an awareness scheme implemented to raise profile of cycle freight.	-1	1	0	0	0	1	-1
60	4.6.2	We have city centre vehicle access and parking/loading restrictions for other freight vehicles than cargo cycles.	-2	-1	2	1	-1	0	-1
61	4.6.2	We have land use planning regulations to keep delivery distances viable (especially in terms of shopping centre location).	-2	1	-1	0	-1	na	-1
62	4.6.2	There is technological assistance to increase electrically-assisted cycle speed thereby increasing catchment/range.	-2	2	0	na	0	na	na
63	4.6.2	We can provide recharging networks.	-2	1	-1	2	2	0	1
64	4.6.2	Green electricity is available.	2	na	1	na	1	0	0
80	II.4.8 Common internal logistics for a major multi-tenanted building or area (including reception and storage facilities and internal logistics)								
81	4.8	We have commitment and support of senior executives in tenant receiver companies and site manager / owner.	-2	0	-1	na	2	1	0
82	4.8	We can establish collaborative and joint planning/working between supply chain partners (shippers, carriers, receivers and site managers/owners).	-2	1	0	na	2	1	1
83	4.8	We will be able to overcome receiver concerns about legal liability for goods in a common logistics environment.	-2	1	na	0	1	-1	1
84	4.8	We give support for overcoming initial preconceptions of tenant receiver companies and their staff.	-2	0	na	0	1	1	1
85	4.8	We will focus to non-business critical products. Business critical products are products which are essential in their availability for the business of the receiver.	-2	-1	na	0	-1	2	-1
86	4.8	We can develop an approach that is cost neutral or better if not a compulsory scheme.	-2	1	na	0	-1	0	1
87	4.8	We have emphasis on reduction in local traffic and environmental impacts for gaining support of receivers.	-2	1	-2	1	1	1	-1
88	4.8	Site owner can consider imposing use of, and charges for, common internal logistics as	-2	1	0	1	0	na	0

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		requirement of tenancy.							
89	4.8	Industry can ensure good record-keeping and tracking of delivered items for resolving potential delivery disputes.	1	2	1	0	1	na	2
103	II.4.10 Urban distribution property and land use planning interventions								
104	4.10	We have land use planning interventions implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities.	-2	0	-2	na	0	na	2
105	4.10	We see a risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building).	-2	-2	1	-1	1	na	na
106	4.10	There is pressure on logistics land uses in the urban area due to land values (countering logistics sprawl).	-2	na	2	-1	2	na	na
107	4.10	There is public subsidy of costs of suitable urban logistics land (countering logistics sprawl).	-2	na	1	0	-2	na	1
108	4.10	There is no political difficulty in limiting development that prevents logistics use in future (especially residential development).	-2	na	-1	0	0	na	2
109	4.10	We can ensure that city planning authorities take initiative/lead.	-2	-1	0	1	1	0	1
110	4.10	We can identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl).	-2	na	2	0	1	0	2
111	4.10	We can ensure facilitation of acquisition of building permits in some cases.	-2	1	na	0	-1	na	0
112	4.10	We can quantify/ forecast freight trip generation rates associated with different types of land use (freight travel planning for major sites).	1	na	-1	1	-1	-1	1
113	4.10	We have an understanding in freight transport compatibility of different land use types (mixed use developments countering logistics	1	na	-1	0	0	0	0

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		sprawl).							
114	4.10	We promote innovation in architecture and building techniques for urban warehouses.	-2	na	-2	0	-2	0	1
115	II.4.11 Non-road modes								
116	4.11	We can ensure clear leadership from major public sector stakeholder backing modal shift.	-2	2	1	0	1	na	0
117	4.11	We can establish a working group including all stakeholders.	-2	1	2	1	2	1	1
118	4.11	There is research done into most appropriate types of non-road urban freight services/product flows.	2	1	1	1	-1	na	-1
119	4.11	There is research done into degree of penetration of urban areas best suited to characteristics of non-road modes.	2	2	-1	0	-2	na	-1
120	4.11	We have evidence base to alter perception of possible users in relation to flexibility, reliability and cost of non-road modes.	na	1	1	1	-1	na	-1
121	4.11	We have a focus on longer distance product flows due to terminal handling and transfer costs.	-2	1	0	1	-2	na	1
122	4.11	We can involve logistics providers, with multiple customers within the urban area, to help aggregate sufficient volumes (such as parcels or retail products).	-2	2	1	0	1	na	1
123	4.11	Industry can ensure cooperation between the shippers and between the logistic operators (in order to bundle/consolidate flows).	-2	1	na	0	1	0	1
124	4.11	Industry can achieve unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road.	-2	2	na	0	-1	-1	-2
125	4.11	Industry can achieve service flexibility and reliability equivalent to direct delivery by road.	-2	2	na	0	-1	na	-1
126	4.11	We have a strategy to consolidate goods flows destined for the urban area.	-2	2	1	1	1	2	-1
127	4.11	There is user support for Corporate Social Responsibility for reducing environmental and traffic impacts.	1	1	1	1	-1	1	1

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
128	4.11	We can ensure the existence of sidings and wharves (to connect services to customers).	na	0	1	0	0	na	1
129	4.11	We can provide paths for non-road freight vehicles on the urban network.	-1	1	-2	0	-2	na	1
130	4.11	We can provide suitable sites and suitable costs for goods handling and road access.	-2	2	1	0	1	1	1
131	4.11	We have a strategy to utilise space for smaller freight consignments on existing passenger rail services.	-2	-2	-2	0	-2	na	0
132	4.11	Industry has efficient goods handling/terminal equipment.	-2	1	0	0	2	1	1
133	II.4.12 Partnership working in the supply chain operations								
134	4.12	We are able to involve a wide range of stakeholders.	2	1	2	1	2	1	2
135	4.12	We have the support of public and private senior managers.	2	0	-1	1	1	1	2
136	4.12	We are able to identify appropriate funding to support administrative tasks and actions.	-1	1	1	1	1	-1	1
137	4.12	There is agreement that softer' solutions based on collaboration rather than regulation and restriction are likely to be more acceptable and beneficial.	1	1	1	1	1	1	2
138	4.12	We are able to find a common ground between disparate stakeholders and views.	2	1	-1	0	2	1	0
139	4.12	We can find a consensus of the partnership needs regarding focus and direction.	2	2	-1	0	1	1	1
140	4.12	We are able to manage people’s expectations based on realistic outlooks.	-1	1	-1	0	1	1	1
141	4.12	The partnership should work on a variety of issues.	1	1	2	1	1	0	2
142	4.12	We can ensure specific actions and tasks with timescales in order to avoid becoming a talking shop.	-1	1	-2	1	0	1	1
143	4.12	We can allocate clear responsibility for actions across members.	1	0	-2	1	1	1	2
144	4.12	We can ensure open communication and	1	0	-1	1	1	1	2

SF	Logistics initiative	Success factors	London	Amsterdam	Brussels	Southampton	Oslo	Rome	Paris
		transparency.							
145	4.12	We are able to find a chair and administrator to direct and take forward the work of the partnership.	2	0	2	1	1	1	2
146	4.12	There is enthusiastic support from members to improve efficiency and reduce external impacts.	1	1	-1	1	2	-1	1
147	4.12	We have a clear structure, Terms of Reference and Action Plan, based on achievable goals.	1	1	1	0	0	0	2
148	4.12	We have online meeting tools to assist and increase participation in national and international partnerships available.	1	-2	-1	na	2	0	2
149	4.12	There is social diffusion among relevant community members of participants’ role and achievements obtained via dedicated and general-purpose media.	na	na	0	na	1	1	2
150	4.12	We can implement multi-purpose gamification and stakeholder engagement dedicated tools.	na	na	-2	na	0	-1	0
151	4.12	We can develop a third-party green logistic integrated certification measurement system (linked to both previous points).	-1	na	2	na	1	-1	0
152	4.12	We can give start-up support to involve and instruct customers (storeowners).	-1	1	-1	na	2	-1	1
153	4.12	We can create a software platform to track all operations and communication when multiple companies are involved, particularly with more shippers.	-2	1	-2	na	-1	1	-1

Appendix C – Detailed results for each CITYLAB city and CITYLAB implementation

C.1. Results for the CITYLAB city London

Amsterdam implementation in London city context

In the context of the CITYLAB city London the following success factor for which the importance is seen as 'essential' for the Amsterdam implementation was rated as 'strong support':

- SF8 Suitably sized vehicles will be selected to make deliveries from centre.

On the other hand the following success factors which were seen as 'essential' for the Amsterdam implementation are rated as 'strong constraint' in the context of the CITYLAB city London:

- SF4 Industry can obtain appropriate location for the consolidation centre
- SF5 It will be possible to make use of existing depot/warehouse space to reduce capital costs
- SF56 We can implement cycling-friendly infrastructure (including on-street parking facilities).
- SF124 Industry can achieve unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road.
- SF125 Industry can achieve service flexibility and reliability equivalent to direct delivery by road.

In general the conditions in the CITYLAB city London are quite weak for the transfer of the Amsterdam implementation. The chance for a successful adoption of the Amsterdam implementation in London is comparablly low.

To improve the chance for a successful implementation of the Amsterdam solution in London, the City of London might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF10 Method for allocation of costs and benefits arising from centre between supply chain users
- SF11 Development of suitable charging mechanisms to reflect costs and benefits arising from centre
- SF27 Good advance knowledge / warning for carriers about future demand for product movement and available loads
- SF49 Sufficiently wide range of vehicle availability by vehicle manufacturers
- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)
- SF57 Road traffic safety legislation and enforcement
- SF60 City centre vehicle access and parking/loading restrictions for other freight vehicles
- SF62 Technological assistance to increase electrically-assisted cycle speed thereby increasing catchment/range
- SF121 Focus on longer distance product flows due to terminal handling and transfer costs

- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road
- SF126 Scope to consolidate goods flows destined for the urban area
- SF130 Availability of suitable sites and suitable costs for goods handling and road access
- SF132 Efficient goods handling/terminal equipment

Brussels implementation in London city context

In the context of the CITYLAB city London the following success factor for which the importance is seen as 'essential' for the Brussels implementation was rated as 'strong support':

- SF135 Need support of senior managers (public and private) – support of political representative also helpful

On the other hand none of the success factors which are seen as 'essential' for the Brussels implementation are rated as 'strong constraint' in the context of the CITYLAB city London.

In general the conditions in the CITYLAB city London are quite good for the transfer of the Brussels implementation. The chance for a successful adoption of the Brussels implementation in London is comparablly high.

To improve the chance for a successful implementation of the Brussels solution in London, the City of London might improve the support for the following success factors:

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)
- SF148 Online meeting tools assist and increase participation in national and international partnerships
- SF152 Start-up support to involve and instruct customers (storeowners)
- SF154 Willingness to order online

Southampton implementation in London city context

In the context of the CITYLAB city London the following success factors for which the importance are seen as 'essential' for the Southampton implementation were rated as 'strong support':

- SF42 Type of operating patterns of carrier (distance, duration, intensity of vehicle use)
- SF47 Availability of refuelling/recharging networks

On the other hand the following success factor which is seen as 'essential' for the Southampton implementation is rated as 'constraint' in the context of the CITYLAB city London:

- SF38 Coverage of capital costs associated with recharging systems

In general the conditions in the CITYLAB city London are very good for the transfer of the Southampton implementation. The chance for a successful adoption of the Southampton implementation in London is the best compared to all other CITYLAB cities.

To improve the chance for a successful implementation of the Southampton solution in London, the City of London might improve the support for the following success factors:

- SF38 Coverage of capital costs associated with recharging systems
- SF49 Sufficiently wide range of vehicle availability by vehicle manufacturers

Oslo implementation in London city context

For the eleven success factors for which the importance is seen as 'essential' for the Oslo implementation there is no success factors that was rated as 'strong support' in the context of the CITYLAB city London. Nevertheless the following success factors which are seen as 'essential' for the Oslo implementation were rated as 'support':

- SF144 Communication and transparency are critical to partnership success
- SF146 Requires enthusiastic support from members to improve efficiency and reduce external impacts
- SF147 Requires clear structure, Terms of Reference and Action Plan, based on achievable goals

On the other hand the following success factors which are seen as 'essential' for the Oslo implementation are rated as 'strong constraint' in the context of the CITYLAB city London:

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF10 Method for allocation of costs and benefits arising from centre between supply chain users
- SF11 Development of suitable charging mechanisms to reflect costs and benefits arising from centre
- SF13 Contractual compulsion to make receivers use the centre
- SF14 Regulatory compulsion to make receivers use the centre
- SF27 Good advance knowledge / warning for carriers about future demand for product movement and available loads

In general the conditions in the CITYLAB city London are very weak for the transfer of the Oslo implementation. The chance for a successful adoption of the Oslo implementation in London is very low compared to other CITYLAB cities.

To improve the chance for a successful implementation of the Oslo solution in London, the City of London might improve the support for the following success factors:

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF10 Method for allocation of costs and benefits arising from centre between supply chain users
- SF11 Development of suitable charging mechanisms to reflect costs and benefits arising from centre
- SF13 Contractual compulsion to make receivers use the centre
- SF14 Regulatory compulsion to make receivers use the centre
- SF27 Good advance knowledge / warning for carriers about future demand for product movement and available loads

Rome implementation in London city context

In the context of the CITYLAB city London the following success factors for which the importance is seen as 'essential' for the Rome implementation were rated as 'strong support':

- SF22 Less suited to goods that are time-critical
- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF135 Need support of senior managers (public and private) – support of political representative also helpful

On the other hand the following success factors for which the importance is seen as ‘essential’ for the Rome implementation are rated as ‘constraint’ in the context of the CITYLAB city London:

- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)
- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

In general the conditions in the CITYLAB city London are very good for the transfer of the Rome implementation. The chance for a successful adoption of the Rome implementation in London is comparably high. It is the best compared to all other CITYLAB cities.

To improve the chance for a successful implementation of the Rome solution in London, the City of London might improve the support for the following success factors:

- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)
- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

Paris implementation in London city context

In the context of the CITYLAB city London the following success factors which are seen as essential for the Paris implementation were rated as ‘strong support’:

- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF46 City access regulations/regulatory support for clean vehicles
- SF145 A chair and administrator are necessary to direct and take forward the work of the partnership

On the other hand the following success factors for which the importance is seen as ‘essential’ for the Paris implementation are rated as ‘strong constraint’ in the context of the CITYLAB city London:

- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF104 Can be implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities
- SF105 Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF107 Possible need for public subsidy of costs of suitable urban logistics land (countering logistics sprawl)
- SF108 Political difficulty in limiting development that prevents logistics use in future (especially residential development)
- SF109 City planning authority has to take initiative/lead
- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)
- SF111 Facilitation of acquisition of building permits in some cases

- SF114 Promoting innovation in architecture and building techniques for urban warehouses
- SF116 Clear leadership from major public sector stakeholder backing modal shift
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF132 Efficient goods handling/terminal equipment

In general the conditions in the CITYLAB city London are very weak for the transfer of the Paris implementation. The chance for a successful adoption of the Paris implementation in London is comparably low.

To improve the chance for a successful implementation of the Paris solution in London, the City of London might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF27 Good advance knowledge / warning for carriers about future demand for product movement and available loads
- SF38 Coverage of capital costs associated with recharging systems
- SF49 Sufficiently wide range of vehicle availability by vehicle manufacturers
- SF104 Can be implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities
- SF105 Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF107 Possible need for public subsidy of costs of suitable urban logistics land (countering logistics sprawl)
- SF108 Political difficulty in limiting development that prevents logistics use in future (especially residential development)
- SF109 City planning authority has to take initiative/lead
- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)
- SF111 Facilitation of acquisition of building permits in some cases
- SF114 Promoting innovation in architecture and building techniques for urban warehouses
- SF116 Clear leadership from major public sector stakeholder backing modal shift
- SF121 Focus on longer distance product flows due to terminal handling and transfer costs
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road
- SF132 Efficient goods handling/terminal equipment

C.2. Results for the CITYLAB city Amsterdam

London implementation in Amsterdam city context

There are nine success factors for which the importance was rated as ‘essential’ for the London implementation. None of them were rated as ‘support’ or ‘strong support’ in the context of the CITYLAB city Amsterdam.

On the other hand the following success factor for which the importance is seen as ‘essential’ for the London implementation is rated as ‘strong constraint’ in the context of the CITYLAB city Amsterdam:

- SF21 Close inter-company working (between shippers, carriers and receivers)

In general there are more success factors rated as ‘support’ than ‘constraint’ in the context of the CITYLAB city Amsterdam for the success factors which are listed for the London implementation. Thus the conditions in the CITYLAB city Amsterdam are quite good for the transfer of the London implementation. The chance for a successful adoption of the London implementation in Amsterdam is high, but compared to all other CITYLAB cities quite low.

To improve the chance for a successful implementation of the London solution in Amsterdam, the City of Amsterdam might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF4 Obtaining appropriate location for the consolidation centre
- SF7 Sufficient product throughput to generate revenue
- SF21 Close inter-company working (between shippers, carriers and receivers)
- SF47 Availability of refuelling/recharging networks
- SF48 Availability of green electricity
- SF50 Time taken for refuelling/recharging
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)

Brussels implementation in Amsterdam city context

There are five success factors for which the importance is seen as ‘essential’ for the Brussels implementation. None of them were rated as ‘support’ or ‘strong support’ in the context of the CITYLAB city Amsterdam.

On the other hand the following success factors for which the importance is seen as ‘essential’ for the Brussels implementation are rated as ‘strong constraint’ in the context of the CITYLAB city Amsterdam:

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)
- SF148 Online meeting tools assist and increase participation in national and international partnerships

In general the conditions in the CITYLAB city Amsterdam are quite weak for the transfer of the Brussels implementation. The chance for a successful adoption of the Brussels implementation in Amsterdam is comparably low.

To improve the chance for a successful implementation of the Brussels solution in Amsterdam, the City of Amsterdam might improve the support for the following success factors:

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)
- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF148 Online meeting tools assist and increase participation in national and international partnerships
- SF152 Start-up support to involve and instruct customers (storeowners)
- SF154 Willingness to order online

Southampton implementation in Amsterdam city context

In the context of the CITYLAB city Amsterdam the following success factor for which the importance is seen as 'essential' for the Southampton implementation was rated as 'strong support':

- SF42) Type of operating patterns of carrier (distance, duration, intensity of vehicle use)

On the other hand no success factor for which the importance is seen as 'essential' for the Southampton implementation is rated as 'strong constraint'. There is no success factor at all which is rated as 'strong constraint' in the context of the CITYLAB city Amsterdam when it comes to the Southampton implementation.

Thus in general the conditions in the CITYLAB city Amsterdam are very good for the transfer of the Southampton implementation. The chance for a successful adoption of the Southampton implementation in Amsterdam is very high compared to other CITYLAB cities.

To further improve the chance for a successful implementation of the Southampton solution in Amsterdam, the City of Amsterdam might improve the support for the following success factors:

- SF35 Purchase price of clean vehicles
- SF37 Comparative maintenance and servicing costs
- SF38 Coverage of capital costs associated with recharging systems
- SF41 Comparative vehicle reliability
- SF46 City access regulations/regulatory support for clean vehicles
- SF47 Availability of refuelling/recharging networks

Oslo implementation in Amsterdam city context

In the context of the CITYLAB city Amsterdam the following success factor for which the importance is seen as 'essential' for the Oslo implementation was rated as 'strong support':

- SF5 Making use of existing depot/warehouse space to reduce capital costs

On the other hand the following success factor for which the importance is seen as 'essential' for the Oslo implementation is rated as 'strong constraint' in the context of the CITYLAB city Amsterdam:

- SF14 Regulatory compulsion to make receivers use the centre

In general the conditions in the CITYLAB city Amsterdam are quite good for the transfer of the Oslo implementation. The chance for a successful adoption of the Oslo implementation in Amsterdam is comparably high.

To improve the chance for a successful implementation of the Oslo solution in Amsterdam, the City of Amsterdam might improve the support for the following success factors:

- SF4 Obtaining appropriate location for the consolidation centre

- SF10 Method for allocation of costs and benefits arising from centre between supply chain users
- SF11 Development of suitable charging mechanisms to reflect costs and benefits arising from centre
- SF12 Existence of a single site owner/landlord
- SF13 Contractual compulsion to make receivers use the centre
- SF14 Regulatory compulsion to make receivers use the centre
- SF27 Good advance knowledge / warning for carriers about future demand for product movement and available loads
- SF144 Communication and transparency are critical to partnership success
- SF146 Requires enthusiastic support from members to improve efficiency and reduce external impacts
- SF147 Requires clear structure, Terms of Reference and Action Plan, based on achievable goals

Rome implementation in Amsterdam city context

There are six success factors for which the importance is seen as ‘essential’ for the Rome implementation. None of them is rated as ‘strong support’ in context of the CITYLAB city Amsterdam. However the following success factors for which the importance is seen as ‘essential’ for the Rome implementation was rated as ‘support’ in the context of the CITYLAB city Amsterdam:

- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging
- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

On the other hand the following success factors for which the importance is seen as ‘essential’ for the Rome implementation are rated as ‘strong constraint’ in the context of the CITYLAB city Amsterdam:

- SF22 Less suited to goods that are time-critical
- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)

In general the conditions in the CITYLAB city Amsterdam are disparate for the transfer of the Rome implementation. The chance for a successful adoption of the Rome implementation in Amsterdam is not very good compared to other CITYLAB cities.

To improve the chance for a successful implementation of the Rome solution in Amsterdam, the City of Amsterdam might improve the support for the following success factors:

- SF22 Less suited to goods that are time-critical
- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)
- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging
- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

- SF148 Online meeting tools assist and increase participation in national and international partnerships

Paris implementation in Amsterdam city context

In the context of the CITYLAB city Amsterdam the following success factors for which the importance is seen as ‘essential’ for the Paris implementation were rated as ‘strong support’:

- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF45 Regulatory vehicle emissions standards
- SF116 Clear leadership from major public sector stakeholder backing modal shift
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road

On the other hand the following success factor for which the importance is seen as ‘essential’ for the Paris implementation is rated as ‘strong constraint’ in the context of the CITYLAB city Amsterdam:

- SF105 Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)

In general the conditions in the CITYLAB city Amsterdam are quite good for the transfer of the Paris implementation. The chance for a successful adoption of the Paris implementation in Amsterdam is comparably high.

To improve the chance for a successful implementation of the Paris solution in Amsterdam, the City of Amsterdam might improve the support for the following success factors:

- SF15 Implementation of related supportive urban freight transport measures
- SF16 Need for public financial support during start-up phase
- SF17 Hypothecated public funding for traffic and environmental benefits provided by consolidation centre
- SF25 More suited to operations that are not subject to complex scheduling constraints
- SF105 Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)

C.3. Results for the CITYLAB city Brussels

London implementation in Brussels city context

In the context of the CITYLAB city Brussels the following success factors for which the importance is seen as ‘essential’ for the London implementation was rated as ‘strong support’:

- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)

On the other hand the following success factor for which the importance is seen as ‘essential’ for the London implementation was rated as ‘strong constraint’ in the context of the CITYLAB city Brussels:

- SF50 Time taken for refuelling/recharging

In general the conditions in the CITYLAB city Brussels are quite weak for the transfer of the London implementation. The chance for a successful adoption of the London implementation in Brussels is comparably low.

To improve the chance for a successful implementation of the London solution in Brussels, the City of Brussels might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF21 Close inter-company working (between shippers, carriers and receivers)
- SF47 Availability of refuelling/recharging networks
- SF50 Time taken for refuelling/recharging

Amsterdam implementation in Brussels city context

There are six success factors for which the importance is seen as 'essential' for the Amsterdam implementation. None of them is rated as 'strong support' in context of the CITYLAB city Brussels. However the following success factors for which the importance is seen as 'essential' for the Amsterdam implementation were rated as 'support' in the context of the CITYLAB city Brussels:

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs

Furthermore none of the success factor for which the importance is seen as 'essential' for the Amsterdam implementation was rated as 'strong constraint' in context of the CITYLAB city Brussels. However the following success factor for which the importance is seen as 'essential' for the Amsterdam implementation was rated as 'constraint' in the context of the CITYLAB city Brussels:

- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)

In general the conditions in the CITYLAB city Brussels are quite weak for the transfer of the Amsterdam implementation. The chance for a successful adoption of the Amsterdam implementation in Brussels is comparably low.

To improve the chance for a successful implementation of the Amsterdam solution in Brussels, the City of Brussels might improve the support for the following success factors:

- SF8 Selecting suitably sized vehicles to make deliveries from centre
- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road

Southampton implementation in Brussels city context

In context of the CITYLAB city Brussels one success factor in the Southampton implementation was rated as 'strong support'. The success factors which are seen as 'essential' for the Southampton implementation are rate as 'neutral' and 'constraint' in the context of the CITYLAB city Brussels. One success factor for which the importance for the Southampton implementation was seen as 'high' was rated as 'strong constraint' in context of the CITYLAB city Brussels:

- SF35 Purchase price of clean vehicles

In general the conditions in the CITYLAB city Brussels are very weak for the transfer of the Southampton implementation. The chance for a successful adoption of the Southampton implementation in Brussels is comparably low.

To improve the chance for a successful implementation of the Southampton solution in Brussels, the City of Brussels might improve the support for the following success factors:

- SF35 Purchase price of clean vehicles
- SF47 Availability of refuelling/recharging networks
- SF50 Time taken for refuelling/recharging

Oslo implementation in Brussels city context

There are eleven success factors for which the importance is seen as ‘essential’ for the Oslo implementation. None of them was rated as ‘strong support’ in the context of the CITYLAB city Brussels. However the following success factors for which the importance is seen as ‘essential’ for the Oslo implementation was rated as ‘support’ in the context of the CITYLAB city Brussels:

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF14 Regulatory compulsion to make receivers use the centre
- SF147 Requires clear structure, Terms of Reference and Action Plan, based on achievable goals

On the other hand the following success factor for which the importance is seen as ‘essential’ for the Oslo implementation was rated as ‘strong constraint’ in the context of the CITYLAB city Brussels:

- SF13 Contractual compulsion to make receivers use the centre

Furthermore the following success factors which are seen as ‘essential’ for the Oslo implementation were rated as ‘constraint’ in the context of the CITYLAB city Brussels:

- SF144 Communication and transparency are critical to partnership success
- SF146 Requires enthusiastic support from members to improve efficiency and reduce external impacts

In general the conditions in the CITYLAB city Brussels are quite weak for the transfer of the Oslo implementation. The chance for a successful adoption of the Oslo implementation in Brussels is comparably low.

To improve the chance for a successful implementation of the Oslo solution in Brussels, the City of Brussels might improve the support for the following success factors:

- SF6 Avoiding the need for expensive handling systems
- SF13 Contractual compulsion to make receivers use the centre
- SF144 Communication and transparency are critical to partnership success
- SF146 Requires enthusiastic support from members to improve efficiency and reduce external impacts

Rome implementation in Brussels city context

There are six success factors for which the importance is seen as ‘essential’ for the Rome implementation. None of them is rated as ‘strong support’ in the context of the CITYLAB city Brussels. However the following success factors for which the importance is seen as ‘essential’ for the Rome implementation were rated as ‘support’ in the context of the CITYLAB city Brussels:

- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

On the other hand there is no success factor for which the importance is seen as ‘essential’ for the Rome implementation rated as ‘strong constraint’ in the context of the CITYLAB city Brussels. The following success factor was rated as ‘constraint’:

- SF135 Need support of senior managers (public and private) – support of political representative also helpful

In general the conditions in the CITYLAB city Brussels are very weak for the transfer of the Rome implementation compared to other CITYLAB cities. Thus the chance for a successful adoption of the Rome implementation in Brussels is comparably low.

To improve the chance for a successful implementation of the Rome solution in Brussels, the City of Brussels might improve the support for the following success factors:

- SF22 Less suited to goods that are time-critical
- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)
- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging
- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF143 Need clear responsibility for actions allocated across members
- SF150 Implementation of multi-purpose gamification and stakeholder engagement dedicated tools

Paris implementation in Brussels city context

In the context of the CITYLAB city Brussels the following success factors for which the importance is seen as ‘essential’ for the Paris implementation were rated as ‘strong support’:

- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)
- SF145 A chair and administrator are necessary to direct and take forward the work of the partnership

On the other hand the following success factors for which the importance is seen as ‘essential’ for the Paris implementation were rated as ‘strong constraint’ in the context of the CITYLAB city Brussels:

- SF104 Can be implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities
- SF114 Promoting innovation in architecture and building techniques for urban warehouses
- SF142 Need to avoid becoming a talking shop – requires specific actions and tasks with timescales

In general the conditions in the CITYLAB city Brussels are quite weak for the transfer of the Paris implementation. The chance for a successful adoption of the Paris implementation in Brussels is comparably low.

To improve the chance for a successful implementation of the Paris solution in Brussels, the City of Brussels might improve the support for the following success factors:

- SF35 Purchase price of clean vehicles
- SF104 Can be implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities
- SF114 Promoting innovation in architecture and building techniques for urban warehouses
- SF129 Availability of paths for non-road freight vehicles on the urban network
- SF142 Need to avoid becoming a talking shop – requires specific actions and tasks with timescales
- SF143 Need clear responsibility for actions allocated across members

C.4. Results for the CITYLAB city Southampton

London implementation in Southampton city context

In the context of the CITYLAB city Southampton the following success factor for which the importance is seen as ‘essential’ for the London implementation was rated as ‘strong support’:

- SF4 Obtaining appropriate location for the consolidation centre

There is no success factor for which the importance is seen as ‘essential’ for the London implementation rated as ‘strong constraint’ in the context of the CITYLAB city Southampton. However the following success factors for which the importance is seen as ‘essential’ for the London implementation were rated as ‘constraint’ in the context of the CITYLAB city Southampton:

- SF7 Sufficient product throughput to generate revenue
- SF47 Availability of refuelling/recharging networks
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)

In general the conditions in the CITYLAB city Southampton are quite good for the transfer of the London implementation. The chance for a successful adoption of the London implementation in Southampton is on average level.

To improve the chance for a successful implementation of the London solution in Southampton, the City of Southampton might improve the support for the following success factors:

- SF7 Sufficient product throughput to generate revenue
- SF22 Less suited to goods that are time-critical
- SF47 Availability of refuelling/recharging networks
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)

Amsterdam implementation in Southampton city context

In the context of the CITYLAB city Southampton the following success factors for which the importance is seen as ‘essential’ for the Amsterdam implementation were rated as ‘strong support’:

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF8 Selecting suitably sized vehicles to make deliveries from centre

There is no success factor which is seen as 'essential' for the Amsterdam implementation rated as 'strong constraint' in the context of the CITYLAB city Southampton. However the following success factor for which the importance is seen as 'essential' for the Amsterdam implementation was rated as 'constraint' in the context of the CITYLAB city Southampton:

- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)

In general the conditions in the CITYLAB city Southampton are quite good for the transfer of the Amsterdam implementation. The chance for a successful adoption of the Amsterdam implementation in Southampton is comparably high.

To improve the chance for a successful implementation of the Amsterdam solution in Southampton, the City of Southampton might improve the support for the following success factors:

- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)

Brussels implementation in Southampton city context

There are five success factors for which the importance is seen as 'essential' for the Brussels implementation. None of them is rated as 'strong support' in context of the CITYLAB city Southampton. Furthermore none of these success factors were rated as 'strong constraint' in the context of the CITYLAB city Southampton. However the following success factor for which the importance is seen as 'essential' for the Brussels implementation was rated as 'support':

- SF135 Need support of senior managers (public and private) – support of political representative also helpful

On the other hand the following success factor for which the importance is seen as 'essential' for the Brussels implementation was rated as 'constraint' in the context of the CITYLAB city Southampton:

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)

In general the conditions in the CITYLAB city Southampton are quite weak for the transfer of the Brussels implementation. The chance for a successful adoption of the Brussels implementation in Southampton is comparably low.

To improve the chance for a successful implementation of the Brussels solution in Southampton, the City of Southampton might improve the support for the following success factors:

- SF22 Less suited to goods that are time-critical
- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)
- SF25 More suited to operations that are not subject to complex scheduling constraints

Oslo implementation in Southampton city context

In the context of the CITYLAB city Southampton the following success factors for which the importance is seen as 'essential' for the Oslo implementation were rated as 'strong support':

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs

There is no success factor for which the importance is seen as ‘essential’ for the Oslo implementation rated as ‘strong constraint’ in the context of the CITYLAB city Southampton. However the following success factors were rated as ‘constraint’:

- SF13 Contractual compulsion to make receivers use the centre
- SF14 Regulatory compulsion to make receivers use the centre

In general the conditions in the CITYLAB city Southampton are quite good for the transfer of the Oslo implementation. The chance for a successful adoption of the Oslo implementation in Southampton is on average level.

To improve the chance for a successful implementation of the Oslo solution in Southampton, the City of Southampton might improve the support for the following success factors:

- SF13 Contractual compulsion to make receivers use the centre
- SF14 Regulatory compulsion to make receivers use the centre
- SF25 More suited to operations that are not subject to complex scheduling constraints

Rome implementation in Southampton city context

There are six success factors for which the importance is seen as ‘essential’ for the Rome implementation. None of them was rated as ‘strong support’ in the context of the CITYLAB city Southampton. However the following success factors for which the importance is seen as ‘essential’ for the Rome implementation were rated as ‘support’:

- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

On the other hand the following success factor for which the importance is seen as ‘essential’ for the Rome implementation was rated as ‘strong constraint’ in the context of the CITYLAB city Southampton:

- SF22 Less suited to goods that are time-critical

In general the conditions in the CITYLAB city Southampton are quite good for the transfer of the Rome implementation. The chance for a successful adoption of the Rome implementation in Southampton is comparable.

To improve the chance for a successful implementation of the Rome solution in Southampton, the City of Southampton might improve the support for the following success factors:

- SF22 Less suited to goods that are time-critical

Paris implementation in Southampton city context

In the context of the CITYLAB city Southampton the following success factors for which the importance is seen as ‘essential’ for the Paris implementation were rated as ‘strong support’:

- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF45 Regulatory vehicle emissions standards

On the other hand none of the success factors for which the importance is seen as ‘essential’ for the Paris implementation was rated as ‘strong constraint’ in the context of the CITYLAB city Southampton. However there are some which were rated as ‘constraint’:

- SF105 Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)

In general the conditions in the CITYLAB city Southampton are very good for the transfer of the Paris implementation. The chance for a successful adoption of the Paris implementation in Southampton is the best compared to all other CITYLAB cities.

To improve the chance for a successful implementation of the Paris solution in Southampton, the City of Southampton might improve the support for the following success factors:

- SF25 More suited to operations that are not subject to complex scheduling constraints
- SF35 Purchase price of clean vehicles
- SF47 Availability of refuelling/recharging networks
- SF105 Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)

C.5. Results for the CITYLAB city Oslo

London implementation in Oslo city context

In the context of the CITYLAB city Oslo the following success factors for which the importance is seen as ‘essential’ for the London implementation were rated as ‘strong support’:

- SF7 Sufficient product throughput to generate revenue
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)

There is no success factor for which the importance is seen as ‘essential’ for the London implementation rated as ‘strong constraint’ in the context of the CITYLAB city Oslo. However the following success factor for which the importance is seen as ‘essential’ for the London implementation was rated as ‘constraint’ in the context of the CITYLAB city Oslo:

- SF4 Obtaining appropriate location for the consolidation centre

In general the conditions in the CITYLAB city Oslo are very good for the transfer of the London implementation. The chance for a successful adoption of the London implementation in Oslo is the best compared to all other CITYLAB cities.

To further improve the chance for a successful implementation of the London solution in Oslo, the City of Oslo might improve the support for the following success factors:

- SF4 Obtaining appropriate location for the consolidation centre
- SF46 City access regulations/regulatory support for clean vehicles
- SF107 Possible need for public subsidy of costs of suitable urban logistics land (countering logistics sprawl)

Amsterdam implementation in Oslo city context

There are six success factors for which the importance is seen as ‘essential’ for the Amsterdam implementation. None of them was rated as ‘strong support’. However the following success factors for which the importance is seen as 'essential' for the Amsterdam implementation were rated as 'support' in the context of the CITYLAB city Oslo:

- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF8 Selecting suitably sized vehicles to make deliveries from centre
- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)

There is no success factor for which the importance is seen as 'essential' for the Amsterdam implementation rated as 'strong constraint' in the context of the CITYLAB city Oslo. However the following success factors are rated as 'constraint':

- SF4 Obtaining appropriate location for the consolidation centre
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road

In general the conditions in the CITYLAB city Oslo are good for the transfer of the Amsterdam implementation. The chance for a successful adoption of the Amsterdam implementation in Oslo is comparably high.

To further improve the chance for a successful implementation of the Amsterdam solution in Oslo, the City of Oslo might improve the support for the following success factors:

- SF4 Obtaining appropriate location for the consolidation centre
- SF25 More suited to operations that are not subject to complex scheduling constraints
- SF46 City access regulations/regulatory support for clean vehicles
- SF119 Research into degree of penetration of urban areas best suited to characteristics of non-road modes
- SF121 Focus on longer distance product flows due to terminal handling and transfer costs
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road
- SF129 Availability of paths for non-road freight vehicles on the urban network

Brussels implementation in Oslo city context

In the context of the CITYLAB city Oslo the following success factors for which the importance is seen as 'essential' for the Brussels implementation were rated as 'strong support':

- SF148 Online meeting tools assist and increase participation in national and international partnerships
- SF152 Start-up support to involve and instruct customers (storeowners)

There is no success factor for which the importance is seen as 'essential' for the Brussels implementation rated as 'strong constraint' in the context of the CITYLAB city Oslo. However the following success factor was rated as 'constraint':

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)

In general the conditions in the CITYLAB city Oslo are good for the transfer of the Brussels implementation. The chance for a successful adoption of the Brussels implementation in Oslo is comparably high.

To further improve the chance for a successful implementation of the Brussels solution in Oslo, the City of Oslo might improve the support for the following success factors:

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)
- SF25 More suited to operations that are not subject to complex scheduling constraints
- SF153 Creation software platform to track all operations and communication when multiple companies are involved, particularly with more shippers

Southampton implementation in Oslo city context

There are two success factors for which the importance is seen as 'essential' for the Southampton implementation. None of them was rated as 'strong support' in context of the CITYLAB city Oslo. Furthermore none of these success factors was rated as 'strong constraint' in the context of the CITYLAB city Oslo. However the following success factor for which the importance is seen as 'essential' for the Southampton implementation was rated as 'support':

- SF47 Availability of refuelling/recharging networks

On the other hand the following success factor for which the importance is seen as 'essential' for the Southampton implementation was rated as 'constraint' in the context of the CITYLAB city Oslo:

- SF42 Type of operating patterns of carrier (distance, duration, intensity of vehicle use)

In general the conditions in the CITYLAB city Oslo are quite good for the transfer of the Southampton implementation. The chance for a successful adoption of the Southampton implementation in Oslo is on average level.

To improve the chance for a successful implementation of the Southampton solution in Oslo, the City of Oslo might improve the support for the following success factors:

- SF42 Type of operating patterns of carrier (distance, duration, intensity of vehicle use)
- SF46 City access regulations/regulatory support for clean vehicles

Rome implementation in Oslo city context

There are six success factors for which the importance is seen as 'essential' for the Rome implementation. None of them was rated as 'strong support' in context of the CITYLAB city Oslo. Furthermore none of these success factors was rated as 'strong constraint' in the context of the CITYLAB city Oslo. However the following success factors for which the importance is seen as 'essential' for the Rome implementation were rated as 'support':

- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)
- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging
- SF44 Corporate Social Responsibility (CSR) commitments and concerns about corporate image of shippers and receivers
- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF136 Appropriate funding has to be identified – to support administrative tasks and actions

On the other hand the following success factor for which the importance is seen as 'essential' for the Rome implementation was rated as 'constraint' in the context of the CITYLAB city Oslo:

- SF22 Less suited to goods that are time-critical

In general the conditions in the CITYLAB city Oslo are quite good for the transfer of the Rome implementation. The chance for a successful adoption of the Rome implementation in Oslo is on average level.

To improve the chance for a successful implementation of the Rome solution in Oslo, the City of Oslo might improve the support for the following success factors:

- SF22 Less suited to goods that are time-critical
- SF25 More suited to operations that are not subject to complex scheduling constraints
- SF46 City access regulations/regulatory support for clean vehicles

Paris implementation in Oslo city context

In the context of the CITYLAB city Oslo the following success factors for which the importance is seen as 'essential' for the Paris implementation was rated 'strong support':

- SF45 Regulatory vehicle emissions standards
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF132 Efficient goods handling/terminal equipment

On the other hand the following success factors for which the importance is seen as 'essential' for the Paris implementation were rated as 'strong constraint' in the context of the CITYLAB city Oslo:

- SF46 City access regulations/regulatory support for clean vehicles
- SF107 Possible need for public subsidy of costs of suitable urban logistics land (countering logistics sprawl)
- SF114 Promoting innovation in architecture and building techniques for urban warehouses

In general the conditions in the CITYLAB city Oslo are quite good for the transfer of the Paris implementation. The chance for a successful adoption of the Paris implementation in Oslo is on average level.

To improve the chance for a successful implementation of the Paris solution in Oslo, the City of Oslo might improve the support for the following success factors:

- SF16 Need for public financial support during start-up phase
- SF25 More suited to operations that are not subject to complex scheduling constraints
- SF46 City access regulations/regulatory support for clean vehicles
- SF107 Possible need for public subsidy of costs of suitable urban logistics land (countering logistics sprawl)
- SF114 Promoting innovation in architecture and building techniques for urban warehouses
- SF119 Research into degree of penetration of urban areas best suited to characteristics of non-road modes
- SF121 Focus on longer distance product flows due to terminal handling and transfer costs
- SF129 Availability of paths for non-road freight vehicles on the urban network

C.6. Results for the CITYLAB city Rome

London implementation in Rome city context

In the context of the CITYLAB city Rome the following success factor for which the importance is seen as 'essential' for the London implementation was rated as 'strong support':

- SF4 Obtaining appropriate location for the consolidation centre

None of the success factors seen as 'essential' for the London implementation was rated as 'strong constraint' or 'constraint' in the in the context of the CITYLAB city Rome.

In general the conditions in the CITYLAB city Rome are good for the transfer of the London implementation. The chance for a successful adoption of the London implementation in Rome is on average level.

To further improve the chance for a successful implementation of the London solution in Rome, the City of Rome might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF47 Availability of refuelling/recharging networks
- SF48 Availability of green electricity
- SF50 Time taken for refuelling/recharging
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)

Amsterdam implementation in Rome city context

In the context of the CITYLAB city Rome the following success factors for which the importance is seen as 'essential' for the Amsterdam implementation were rated as 'strong support':

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF8 Selecting suitably sized vehicles to make deliveries from centre

None of the success factors seen as 'essential' for the Amsterdam implementation was rated as 'strong constraint' in the in the context of the CITYLAB city Rome. However the following success factor for which the importance is seen as 'essential' for the Amsterdam implementation was rated as 'constraint' in the context of the CITYLAB city Rome:

- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road

In general the conditions in the CITYLAB city Rome are very good for the transfer of the Amsterdam implementation. The chance for a successful adoption of the Amsterdam implementation in Rome is the best for all CITYLAB cities.

To improve the chance for a successful implementation of the Amsterdam solution in Rome, the City of Rome might improve the support for the following success factors:

- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road

Brussels implementation in Rome city context

There are five success factors seen as 'essential' for the Brussels implementation. None of them was rated as 'strong support' in the context of the CITYLAB city Rome. However the following success factor for which the importance is seen as 'essential' for the Brussels implementation was rated as 'support':

- SF135 Need support of senior managers (public and private) – support of political representative also helpful

None of the success factors seen as 'essential' for the Brussels implementation was rated as 'strong constraint' in the in the context of the CITYLAB city Rome. However the following success factor for which the importance is seen as 'essential' for the Brussels implementation was rated as 'constraint' in the context of the CITYLAB city Rome:

- SF152 Start-up support to involve and instruct customers (storeowners)

In general the conditions in the CITYLAB city Rome are good for the transfer of the Brussels implementation. The chance for a successful adoption of the Brussels implementation in Rome is on average level.

To improve the chance for a successful implementation of the Brussels solution in Rome, the City of Rome might improve the support for the following success factors:

- SF23 Less suited to goods with specialised transport requirements (for reducing empty running)
- SF148 Online meeting tools assist and increase participation in national and international partnerships
- SF152 Start-up support to involve and instruct customers (storeowners)
- SF154 Willingness to order online

Southampton implementation in Rome city context

There are two success factors for which the importance is seen as 'essential' for the Southampton implementation. None of them was rated as 'strong support' in the context of the CITYLAB city Rome. However the following success factor for which the importance is seen as 'essential' for the Southampton implementation was rated as 'support':

- SF42 Type of operating patterns of carrier (distance, duration, intensity of vehicle use)

None of the success factors for which the importance is seen as 'essential' for the Southampton implementation was rated as 'strong constraint' or 'constraint' in the in the context of the CITYLAB city Rome.

In general the conditions in the CITYLAB city Rome are good for the transfer of the Southampton implementation. The chance for a successful adoption of the Southampton implementation in Rome is on average level.

To improve the chance for a successful implementation of the Southampton solution in Rome, the City of Rome might improve the support for the following success factor:

- SF38 Coverage of capital costs associated with recharging systems
- SF45 Regulatory vehicle emissions standards
- SF46 City access regulations/regulatory support for clean vehicles
- SF47 Availability of refuelling/recharging networks

Oslo implementation in Rome city context

In the context of the CITYLAB city Rome the following success factors for which the importance is seen as 'essential' for the Oslo implementation were rated as 'strong support':

- SF4 Obtaining appropriate location for the consolidation centre
- SF5 Making use of existing depot/warehouse space to reduce capital costs

None of the success factors for which the importance is seen as ‘essential’ for the Oslo implementation was rated as ‘strong constraint’ in the in the context of the CITYLAB city Rome. However the following success factors for which the importance is seen as ‘essential’ for the Oslo implementation are rated as ‘constraint’ in the context of the CITYLAB city Rome:

- SF10 Method for allocation of costs and benefits arising from centre between supply chain users
- SF146 Requires enthusiastic support from members to improve efficiency and reduce external impacts

In general the conditions in the CITYLAB city Rome are very good for the transfer of the Oslo implementation. The chance for a successful adoption of the Oslo implementation in Rome is the best among all CITYLAB cities.

To further improve the chance for a successful implementation of the Oslo solution in Rome, the City of Rome might improve the support for the following success factors:

- SF11 Development of suitable charging mechanisms to reflect costs and benefits arising from centre
- SF13) Contractual compulsion to make receivers use the centre
- SF146 Requires enthusiastic support from members to improve efficiency and reduce external impacts
- SF147 Requires clear structure, Terms of Reference and Action Plan, based on achievable goals

Paris implementation in Rome city context

In the context of the CITYLAB city Rome the following success factor for which the importance is seen as ‘essential’ for the Paris implementation was rated as ‘strong support’:

- SF5 Making use of existing depot/warehouse space to reduce capital costs

None of the success factors for which the importance is seen as ‘essential’ for the Paris implementation was rated as ‘strong constraint’ in the in the context of the CITYLAB city Rome. However the following success factors for which the importance is seen as ‘essential’ for the Paris implementation were rated as ‘constraint’ in the context of the CITYLAB city Rome:

- SF3 Revenue generation from value added services
- SF112 Quantification/ forecasting freight trip generation rates associated with different types of land use (freight travel planning for major sites)
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road

In general the conditions in the CITYLAB city Rome are quite good for the transfer of the Paris implementation. The chance for a successful adoption of the Paris implementation in Rome is on average level.

To improve the chance for a successful implementation of the Paris solution in Rome, the City of Rome might improve the support for the following success factors:

- SF3 Revenue generation from value added services
- SF16 Need for public financial support during start-up phase
- SF45 Regulatory vehicle emissions standards
- SF46 City access regulations/regulatory support for clean vehicles

- SF104 Can be implemented alongside free-market approach in land acquisition and development - by easing planning rules and conditions for suitable distribution centre and warehousing facilities
- SF105 Risk of making city less attractive than its urban competitors (through the requirement of inclusion of loading regulations for large buildings and freight travel planning which can reduce the rentable space in a commercial building)
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)
- SF107 Possible need for public subsidy of costs of suitable urban logistics land (countering logistics sprawl)
- SF108 Political difficulty in limiting development that prevents logistics use in future (especially residential development)
- SF109 City planning authority has to take initiative/lead
- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)
- SF111 Facilitation of acquisition of building permits in some cases
- SF112 Quantification/ forecasting freight trip generation rates associated with different types of land use (freight travel planning for major sites)
- SF113 Understanding the freight transport compatibility of different land use types (mixed use developments countering logistics sprawl)
- SF114 Promoting innovation in architecture and building techniques for urban warehouses
- SF116 Clear leadership from major public sector stakeholder backing modal shift
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road

C.7. Results for the CITYLAB city Paris

London implementation in Paris city context

In the context of the CITYLAB city Paris the following success factor for which the importance is seen as ‘essential’ for the London implementation was rated as ‘strong support’:

- SF110 City authority to identify and protect suitable urban sites (regulation/safeguarding to counter logistics sprawl)

On the other hand the following success factors for which the importance is seen as ‘essential’ for the London implementation were rated as ‘strong constraint’ in the context of the CITYLAB city Paris:

- SF2 Keeping capital costs to a minimum
- SF4 Obtaining appropriate location for the consolidation centre

In general the conditions in the CITYLAB city Paris are good for the transfer of the London implementation. The chance for a successful adoption of the London implementation in Paris is comparably high.

To improve the chance for a successful implementation of the London solution in Paris, the City of Paris might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF4 Obtaining appropriate location for the consolidation centre
- SF7 Sufficient product throughput to generate revenue
- SF21 Close inter-company working (between shippers, carriers and receivers)
- SF47 Availability of refuelling/recharging networks

- SF48 Availability of green electricity
- SF50 Time taken for refuelling/recharging
- SF106 Existing pressure on logistics land uses in the urban area due to land values (countering logistics sprawl)

Amsterdam implementation in Paris city context

There are two success factors for which the importance is seen as ‘essential’ for the Amsterdam implementation. None of them was rated as ‘strong support’ in the context of the CITYLAB city Paris. However there the following success factors for which the importance is seen as ‘essential’ for the Amsterdam implementation were rated as ‘support’:

- SF5 Making use of existing depot/warehouse space to reduce capital costs
- SF56 Implementation of cycling-friendly infrastructure (including on-street parking facilities)

On the other hand the following success factors for which the importance is seen as ‘essential’ for the Amsterdam implementation were rated as ‘strong constraint’ in the context of the CITYLAB city Paris:

- SF4 Obtaining appropriate location for the consolidation centre
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road

In general the conditions in the CITYLAB city Paris are quite good for the transfer of the Amsterdam implementation. The chance for a successful adoption of the Amsterdam implementation in Paris is comparably low.

To improve the chance for a successful implementation of the Amsterdam solution in Paris, the City of Paris might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF4 Obtaining appropriate location for the consolidation centre
- SF49 Sufficiently wide range of vehicle availability by vehicle manufacturers
- SF124 Achievement of unit transport costs (including the last mile delivery costs) equivalent to direct delivery by road
- SF125 Achievement of service flexibility and reliability equivalent to direct delivery by road

Brussels implementation in Paris city context

In the context of the CITYLAB city Paris the following success factors for which the importance is seen as ‘essential’ for the Brussels implementation were rated as ‘strong support’:

- SF135 Need support of senior managers (public and private) – support of political representative also helpful
- SF148 Online meeting tools assist and increase participation in national and international partnerships

None of the success factors for which the importance is seen as ‘essential’ for the Brussels implementation was rated as ‘strong constraint’ or ‘constraint’ in the in the context of the CITYLAB city Paris.

In general the conditions in the CITYLAB city Paris are very good for the transfer of the Brussels implementation. The chance for a successful adoption of the Brussels implementation in Paris is the best among all CITYLAB cities.

To further improve the chance for a successful implementation of the Brussels solution in Paris, the City of Paris might improve the support for the following success factors:

- SF21 Close inter-company working (between shippers, carriers and receivers)
- SF28 Desire to reduce vehicle activity and negative impacts (as well as to achieve cost savings) among supply chain partners
- SF153 Creation software platform to track all operations and communication when multiple companies are involved, particularly with more shippers

Southampton implementation in Paris city context

There are two success factors for which the importance is seen as 'essential' for the Southampton implementation. None of them was rated as 'strong support' or 'support' in the context of the CITYLAB city Paris. Both success factors have been rated 'neutral' in the context of the CITYLAB city Paris. Thus they are not seen as 'strong constraint' or 'constraint' as well.

In general the conditions in the CITYLAB city Paris are quite weak for the transfer of the Southampton implementation. The chance for a successful adoption of the Southampton implementation in Paris is comparably low.

To improve the chance for a successful implementation of the Southampton solution in Paris, the City of Paris might improve the support for the following success factors:

- SF38 Coverage of capital costs associated with recharging systems
- SF42 Type of operating patterns of carrier (distance, duration, intensity of vehicle use)
- SF47 Availability of refuelling/recharging networks

Oslo implementation in Paris city context

In the context of the CITYLAB city Paris the following success factors for which the importance is seen as 'essential' for the Oslo implementation were rated as 'strong support':

- SF12 Existence of a single site owner/landlord
- SF144 Communication and transparency are critical to partnership success
- SF147 Requires clear structure, Terms of Reference and Action Plan, based on achievable goals

On the other hand the following success factor for which the importance is seen as 'essential' for the Oslo implementation was rated as 'strong constraint' in the context of the CITYLAB city Paris:

- SF4 Obtaining appropriate location for the consolidation centre

In general the conditions in the CITYLAB city Paris are good for the transfer of the Oslo implementation. The chance for a successful adoption of the Oslo implementation in Paris is comparably high.

To further improve the chance for a successful implementation of the Oslo solution in Paris, the City of Paris might improve the support for the following success factors:

- SF2 Keeping capital costs to a minimum
- SF4 Obtaining appropriate location for the consolidation centre
- SF10 Method for allocation of costs and benefits arising from centre between supply chain users

Rome implementation in Paris city context

In the context of the CITYLAB city Paris the following success factors for which the importance is seen as ‘essential’ for the Rome implementation were rated as ‘strong support’:

- SF26 More suited to goods that can be easily combined in direct and reverse flows in terms of size, types (linked to safety issues) and packaging
- SF135 Need support of senior managers (public and private) – support of political representative also helpful

None of the success factors for which the importance is seen as ‘essential’ for the Rome implementation was rated as ‘strong constraint’ or ‘constraint’ in the context of the CITYLAB city Paris.

In general the conditions in the CITYLAB city Paris are good for the transfer of the Rome implementation. The chance for a successful adoption of the Rome implementation in Paris is comparably high.

To improve the chance for a successful implementation of the Rome solution in Paris, the City of Paris might improve the support for the following success factors:

- SF22 Less suited to goods that are time-critical
- SF24 Suits operations with balanced flows of product in both directions (for reducing empty running)