

SoCool@EU

Sustainable Organisation between Clusters of
Optimised Logistics @ Europe



Deliverable n° D3.3: Business Plan

**Within the context of Work Package 3 - Initiatives to improve
integration: definition of a joint action plan**

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List of Partners

Beneficiary n°	Partner	Country
1 (Coordinator)	Dutch Institute for Advanced Logistics (Dinalog)	The Netherlands
2	House of Logistics and Mobility (HOLM)	Germany
3	Asociación Logística Innovadora de Aragón (ALIA)	Spain
4	Lund University (ULUND)	Sweden
5	Mersin Chamber of Commerce and Industry (MTSO)	Turkey

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0 Executive Summary

This Business Plan is part of the project "Sustainable Organisation between Clusters of Optimised Logistics @ Europe (SoCool@EU)", funded under the 7th Framework Programme of the European Union. Five world-class clusters have joined forces in this project to create an open European hub that will enable research-driven regional clusters throughout Europe to collaborate and mutually learn in order to achieve more sustainable and competitive freight gateways and hubs with associated logistical services and transport operations. Together, they build a leading network of logistics gateways in Europe.

- Dutch Institute for Advanced Logistics (DINALOG), Netherlands South West & Flanders Cluster - The Netherlands / Belgium
- House of Logistics and Mobility (HOLM), Rhein-Main Region - Germany
- Asociación Logística Innovadora de Aragón (ALIA), Region of Aragón - Spain
- Lund University, Øresund Region - Denmark / Sweden
- Mersin Chamber of Commerce and Industry, Mersin Logistics Cluster - Turkey

After a detailed analysis of the collaborating regions and clusters, a Joint Action Plan was developed, describing the identified fields of strategic research in which the project clusters will develop projects and initiate research activities to improve the sustainability and competitiveness of logistics services and intermodal transport operations in the European regions. The six identified joint action fields are:

- 1) Advanced supply chains and ICT
- 2) Cluster development and internationalisation
- 3) Green logistics
- 4) Intelligent hubs
- 5) Knowledge transfer and valorisation
- 6) Urban logistics

The present Business Plan builds on the six fields of the Joint Action Plan and defines the relevant joint projects which have been identified for potential development among the clusters and its stakeholders. It provides a detailed outline of proposals for joint projects and elaborates on the motivation, objectives, activities, risks, possible actors and funding sources. The eleven project proposals are:

- 1) Smart Humanitarian Logistics
- 2) Clusters' Orchestration of Horizontal Collaboration
- 3) Synchronodal Supply Chain Management
- 4) European Expert Groups in Logistics and Mobility
- 5) Empowering Industrial Internationalisation through Inter-cluster Collaboration
- 6) Green Supply Chain

- 7) The Impact of E-commerce Service Models on Supply Chain Cost & Emission Efficiency
- 8) Innovative Models in the Rail Freight Transportation System
- 9) Increasing Efficiency of Inbound Cargo into Hubs through Collaboration and ICT Solutions
- 10) Logistics Education, Training and Valorisation
- 11) Coordinated European Development of Pilot Solutions for Urban Logistics

In the next step within the frame of Work Package 4, the clusters will break down the Joint Action Plan and the Business Plan into an operable project planning and implementation system which will be applied throughout the project.

1 Introduction

In the context of the 7th Framework Programme of the European Union, five regional logistics hubs have joined in the project "Sustainable Organisation between Clusters of Optimised Logistics @ Europe (SoCool@EU)" to foster sustainable economic development in Europe by boosting the competitiveness of the transport-related economy. In their position as mature logistics clusters, the five SoCool@EU partners contribute with their expertise as deep sea-, short sea shipping-, airport- and dry hubs.

- Dutch Institute for Advanced Logistics (DINALOG), Netherlands South West & Flanders Cluster - The Netherlands / Belgium
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- Lund University, Øresund Region - Denmark / Sweden
- Mersin Chamber of Commerce and Industry, Mersin Logistics Cluster - Turkey

The strategic objective which guided the preparation of the SoCool@EU Business Plan concerns the setup of an open European platform of excellence with specific joint projects in supply chain management and logistics connected with hubs and gateways. The platform will enable research-driven clusters in logistics throughout Europe to collaborate and mutually learn from each other and thus drive the competitiveness and sustainability of the gateways and hubs and their associated logistics industry through enhanced innovative activity. More specifically, the goal extends to increasing intra-cluster and especially inter-cluster interaction between actors of the private sector, research institutions and public authorities ("triple helix") in collaborative projects to

- foster knowledge development and transfer, boost the exchange of best practices and facilitate collaborative efforts in research and education,
- leverage the single European marketplace for logistics and contribute to the internationalisation of the clusters,
- match regional innovation agendas and enable synergies and combined approaches to hub, gateway and intermodal transport operations, and
- provide mentoring services to regions with yet developing logistics clusters.

The current Work Package 3 is concerned with the development of initiatives to improve integration. The objective consists in the strengthening of collaboration between the project logistics clusters and the definition of a strategic research vision for this collaboration. A Joint Action Plan has been formulated presenting the strategic research agenda along with the pillars and activities in six major fields of action:

- 1) Advanced supply chains and ICT
- 2) Cluster development and internationalisation
- 3) Green logistics
- 4) Intelligent hubs
- 5) Knowledge transfer and valorisation
- 6) Urban logistics

The fields of action serve as a basis for the development of common project proposals of the clusters which are specified in the current Business Plan. The rationale of the Business Plan is to outline project proposals for further development and implementation in Work Package 4. The specific project impulses are:

- 1) Smart Humanitarian Logistics
- 2) Clusters' Orchestration of Horizontal Collaboration
- 3) Synchromodal Supply Chain Management
- 4) European Expert Groups in Logistics and Mobility
- 5) Empowering Industrial Internationalisation through Inter-cluster Collaboration
- 6) Green Supply Chain
- 7) The Impact of E-commerce Service Models on Supply Chain Cost & Emission Efficiency
- 8) Innovative Models in the Rail Freight Transportation System
- 9) Increasing Efficiency of Inbound Cargo into Hubs through Collaboration and ICT Solutions
- 10) Logistics Education, Training and Valorisation
- 11) Coordinated European Development of Pilot Solutions for Urban Logistics

The Business Plan is structured into four major chapters. Following the introduction, Chapter 2 gives a summary of the process which led to the formulation of the Business Plan. Representing the main content, Chapter 3 provides the descriptions of the project impulses. Finally, a round-up and future outlook will close the document.

2 Method

The process of defining the projects for the Joint Action Plan and future implementation in the SoCool@EU regions was initiated in Work Package 2 in the course of a detailed analysis of the participating clusters in regard to their competitive profiles in logistics and transport. The results from the regional cluster analyses yielded a catalogue of current and future issues in logistics and transportation in each region. Regional workshops with local experts and stakeholders especially from the research and private sector were organised following the analysis to discuss and verify the results and identify possible projects and recommendations for action for the clusters. As a main outcome, the expert rounds resulted in an evaluation of fields for action in regard to their relevance for the regional business community and their relevance in a more European/global context.

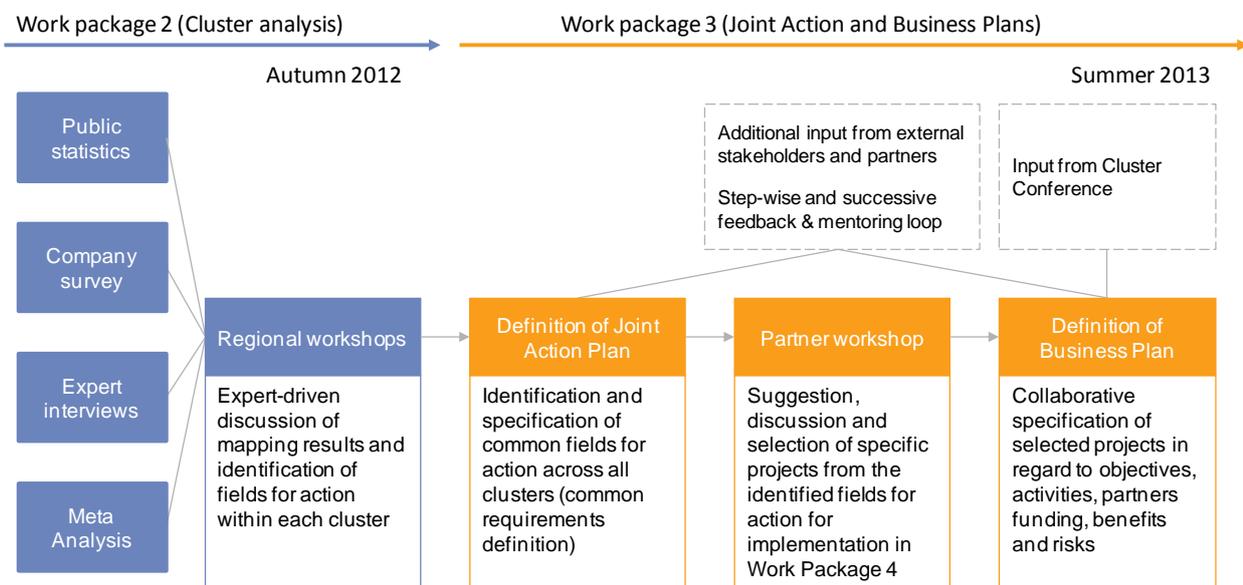


Figure 1 Approach of the identification of joint European projects

Source: Own illustration, 2013.

In the initiation of Work Package 3, each SoCool@EU partner region communicated the results from their regional workshops and the identified fields for action to all other partners. A subsequent comparative mapping exercise revealed common fields for action to SoCool@EU clusters. These overlapping topic domains were merged, adjusted, and reformulated in a Joint Action Plan with six fields for action. The fields represent a basic common understanding between the consortium partners on relevant issues which should initially determine the agenda of the future platform and on corresponding projects.

Consequently, the project impulses of the Business Plan have been developed in line with the interests and necessities for common action as part of the individual roadmaps of the EU logistics clusters: Initially, each partner provided a selection of specific projects related to the six fields of the Joint Action Plan which they considered to be solely feasible or decisively benefit from

implementation in the context of SoCool@EU. This preliminary selection yielded a total of forty-two projects submitted by all consortium members. Representatives from the different clusters in the project convened in a workshop at the HOLM Forum at Frankfurt/Main Airport on 21-22 March 2013 to discuss the submitted project outlines in the six overarching fields for action. Workshop participants transported the input on recommendations for action from their regional actors and, in their role as cluster institutions representing their cluster, enhanced the discussion on project outlines. Project impulses were selected or merged for inclusion in the Business Plan

- which have the potential to contribute valuable input to the state of the art,
- which are of common interest for at least two SoCool@EU clusters and potentially relevant for the others,
- and which would benefit most from European-wide inter-regional learning and networking.

Following, the selected project impulses were drafted by designated lead partners with a main interest in the respective topic and subsequently merged in a first version of the Business Plan.

The draft was presented to the experts of the Advisory Board of the SoCool@EU project in a meeting in Rotterdam on May 14, 2013 for comments and approval. The adjusted versions were further presented to representatives of practice and academia in workshop sessions for discussion and evaluation during the SoCool@EU cluster conference at the HOLM Forum at Frankfurt/Main Airport on 11 June 2013.

The current final Business Plan defines joint project impulses within the topic areas of the Joint Action Plan and specifies objectives, activities, benefits and risks. In their nature as preliminary proposals, the project outlines also adopt a generic definition of possible actors and funding. The actual participants and funding sources will be specified in Work Package 4 during implementation.

3 Description of SoCool@EU Research Project Impulses

The present Business Plan provides an overview of the joint project impulses which were identified in the work process of Work Package 3 as being the most relevant for future collaborative activity and implementation in Work Package 4. The following subchapters provide outlines of the project impulses in regard to the corresponding Joint Action Plan field, interested partners of the consortium, motivation, objectives, activities, partners, funding, benefits, and risks.

Joint Action Plan: Identified fields for action	Business Plan: Specific project impulses for action
<i>Advanced supply chains and ICT</i>	Smart Humanitarian Logistics Clusters' Orchestration of Horizontal Collaboration Synchromodal Supply Chain Management
<i>Cluster development and internationalisation</i>	European Expert Groups in Logistics and Mobility Empowering Industrial Internationalisation through Inter-cluster Collaboration
<i>Green logistics</i>	Green Supply Chain The Impact of E-commerce Service Models on Supply Chain Cost & Emission Efficiency Innovative Models in the Rail Freight Transportation System
<i>Intelligent hubs</i>	Increasing Efficiency of Inbound Cargo into Hubs through Collaboration and ICT Solutions
<i>Knowledge transfer and valorisation</i>	Logistics Education, Training and Valorisation
<i>Urban logistics</i>	Coordinated European Development of Pilot Solutions for Urban Logistics

Figure 2 Fields of the Joint Action Plan and the respective project impulses described in the Business Plan.
Source: Own illustration, 2013.

3.1 Smart Humanitarian Logistics

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban logistics

Participating consortium partners				
ALIA	Dialog	HOLM	ULUND	MTSO (mentored)

Motivation

Humanitarian logistics takes up the idea of the preparedness for fast and slow on-set disasters (including, e.g. development of competence, supplier relationships and pre-positioning of stocks), response (during a disaster), and recovery (getting back to normal state, e.g. rebuilding). Furthermore, there are also logistics activities related to long-term development such as education and fighting diseases. Humanitarian logistics often involves coordinating a large number of independent actors, unpredictable demands and information levels, conflicts and political instability, as well as varying levels of infrastructure.

Logistics accounts for up to 80% of the total costs of relief operations. In disaster-relief logistics operations, it is estimated that every year between 2.5 and 7 billion USD are lost due to inefficiencies. At the same time, more than 25 million people in need do not receive support due to insufficient funding. The potential benefits from improvements in efficiency of logistics are immense.

Even though humanitarian relief supply chains share similarities with business-driven supply chains, they also have some unique characteristics. First of all, humanitarian operations often take place in underdeveloped regions with poor infrastructure which are often far away from any major trading routes or sources of inventory. Secondly, the final user is neither a customer of the carrier nor the shipper. Thus, the normal pull-based supply chain drivers are not applicable, and present as well as future demand is difficult to estimate. Thirdly, political and economic considerations among donors as well as the recipients of relief operations regularly influence operations. Often, several competing humanitarian organisations are active in the same region without coordinating their operations. Further, national and local authorities (often in their role as a donor party) as well as other stakeholders in the receiving areas are regularly trying to influence the deployment of operations. Humanitarian logistics is a relatively new field of action which is gaining increased attention due to its central role and financial impact in humanitarian relief operations. The inefficiencies which still exist in humanitarian logistics in face of unpredictable and special conditions are yet to be alleviated.

Objective

The objective of this project is to identify and develop best practices within humanitarian logistics in order to improve overall efficiency in conduct. One question in this context pertains to what humanitarian logistics can learn from the vast knowledge accumulated in commercial logistics as well as from other humanitarian and emergency management areas.

Potential Activities

- Initiatives for improved information and communication, as on-the-fly information and certainty about local experts and contacts are most relevant to operate efficiently in difficult environments.
- Development of basic training courses as short modules in supply chain management that can be delivered to staff at humanitarian organisations (onsite) as well as over the internet (online) to enhance the capabilities of in-country practitioners in the field at their convenience.
- Development of basic tools for inventory management scheduling that can be used by non-supply chain experts (often, there are no workers knowledgeable about supply chains in the organisations or the distressed region).

Actors

- Consortium members and other cluster organisations
- Logistics companies and freight forwarders within humanitarian and disaster-relief logistics
- Non-governmental organisations, humanitarian organisations and the United Nations
- Research institutions
- European Union, national and regional authorities

Funding

- Foundations and non-governmental organisations
 - DG ECHO (EU) and other European funding
 - National funding
-

Impact

The potential improvements in conduct on the side of the actors involved in actual humanitarian logistics operations (such as humanitarian organisations, freight forwarders and carriers) would especially be beneficial for the recipients of aid in terms of faster and more targeted relief delivery. Larger relief impact with the same amount of resources would also increase approval on the side of donors. Involved companies directly gain in terms of knowledge accumulation in regard to sophisticated logistics operations in difficult conditions.

Risks

Multiple actors with different economic and political interests among donors as well as the receiving regions are often involved in the deployment of relief logistics operations. Even though the potential for improving service levels and efficiency is often very large, there is a risk that differences in interests will hamper any efforts made towards the implementation of better solutions.

3.2 Clusters' Orchestration of Horizontal Collaboration

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban logistics

Participating consortium partners				
ALIA	Dinalog	HOLM	ULUND	MTSO (mentored)

Motivation

It has been common practice for individual shippers to optimise their respective distribution systems in such a way that their own customers are best served. For less-than-full-truck-load shipments, the fact that shippers' warehouses are geographically dispersed has to be compensated by the logistics service providers' consolidation network. This is especially relevant for perishable goods supply chains, where often small and medium-sized companies with limited capacity have to fulfil sophisticated logistics requirements of retailers.

Recent research and pioneering pilot cases have revealed that extensive consolidation efforts and the related surplus kilometres and emissions could be avoided through an improved efficiency in the system obtained through horizontal collaboration of manufacturers. An exemplary practice resulting from horizontal collaboration regards to the co-location of stocks of companies delivering to the same customers or customer regions. If these collaborating shippers are granted only a limited degree of flexibility from their (joint) customers in terms of delivery quantities and/or timings, possibilities for synchronisation and bundling of transport flows open up, leading to an optimisation of activities in a way that is not achievable for individual companies acting on their own. Efforts made towards horizontal collaboration may also contribute significantly to achieving the European Commission's ambition of reducing greenhouse gas emissions by 60% in 2050¹.

Objective

The main objective of the project is to develop and implement real cases of horizontal collaboration between partner companies in every region in order to increase efficiency in transport and warehousing through collaborative bundling and synchronisation of activities. Possibilities for

¹ COM (2011) 112 final. "A Roadmap for moving to a competitive low carbon economy in 2050". European Commission, Brussels, 8.3.2011.

additional value generation should be investigated in regard to actors from different logistics clusters collaborating in sharing information about transportation flows and realising the related potential synergies. Logistics clusters - as hubs of activity, knowledge, and experience - can assume a central role in the promotion and diffusion of horizontal collaboration as a practice for industry.

Potential Activities

- Review of insights from recent implementations, related EU-funded projects such as CO3, and results from recent cases on horizontal collaboration in general and particularly in cases where logistics clusters were involved.
 - Identification of business models of horizontal collaboration through clusters as well as the different stakeholders involved, e.g. logistics clusters as online and offline orchestrators and neutral coordinating entity, collaboration between, e.g. clusters, clusters from other sectors, shippers and logistics service providers (LSPs). Business models should integrate organisational and operational issues both from intra-cluster and inter-cluster points of view.
 - Development and deployment of the necessary operational tools and multi-party agreements (e.g. on gain- and value-sharing, entry-exit rules, contracts).
 - Pilot applications in specific industries. Applications have to explicitly address the perspectives of shippers, logistics service providers and the society in order to achieve a collaboration that is beneficial for all stakeholders.
 - Dissemination and transfer of best practices in horizontal collaboration as well as experiences and lessons learnt from pilot applications to other regions and/or industries.
-

Actors

- Consortium members
 - Representatives from the producing industry in focus
 - Small and medium-sized enterprises with proven experience in horizontal collaboration
 - Logistics service providers
 - Retail chains for input on requirements
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Funding

- Horizon 2020
 - Programme for the Competitiveness of enterprises and SMEs (COSME) 2014-2020
 - National funding
 - Regional funding
 - Private investors
-

Impact

Short-term benefits from this project are foreseen. The project will be a supporting step towards the establishment of horizontal collaboration as a standard in the logistics sector. It is expected that widespread horizontal collaboration could reduce energy consumption and thus CO₂ emissions of the supply chains in focus by at least 30%. Furthermore, the pilot collaborations which the project will initiate could serve as an inspirational example for future collaborating shippers as well as a practical handbook.

Risks

In order to create successful horizontal collaboration partnerships, information should be transparent and flow freely among the partners. Still, some actors might try to block this free flow of information in order to position themselves as central gate holders in the collaborative network and influence activities in their own interest. Further, the high dynamism of certain sectors such as the food industry might pose a problem in long-term pilot projects.

3.3 Synchromodal Supply Chain Management

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban and logistics

Participating consortium partners				
Dinalog	HOLM	ALIA	ULUND	MTSO (mentored)

Motivation

Consolidation is needed to achieve a high efficiency especially in long-distance transit chains, and not only in terms of cost considerations, but also in regard to the utilisation of infrastructure capacities. In light of growing volumes in transport, a central future challenge for the industry, related academia and governments is to increase efficiency in the utilisation of existing infrastructures and resources.

Already now, an increasing share of global transport is containerized, reducing handling costs and facilitating the use of multiple modes of transportation. Yet, the flexibility needed to be independent of a specific mode of transport substantially increases the coordination and planning issues along the transit chain, with imbalances in the supply-and-demand network resulting in empty containers.

Actors have to take combined efforts to arrive at new and sophisticated multimodal and synchromodal transit chains with improved information availability and exchange and better planning and scheduling. Synchromodality is a concept that takes a holistic view of (freight) transport, including and integrating all available modes, new logistics and transport concepts, facilitating infrastructures, (ICT) technologies, services, new policies, and governance. The basic idea is the use of alternative transport modes in a flexible way, depending on temporary circumstances as well as product and supply chain characteristics. Synchromodality requires a superb information infrastructure and data exchange between all parties involved (e.g. shippers, main ports, inland hubs, smart corridor operators, customs, and inspection authorities).

Objective

The objective consists in the investigation of possibilities to use the existing transport infrastructure and resources more efficiently by developing sophisticated synchromodal transit chains through improved information availability and exchange and better planning and scheduling. The objective implies a holistic analysis and step forward to the application of the synchromodal concept,

including the investigation of the societal costs and benefits of a synchromodal view on (freight) transport, the identification of the most important barriers for implementation and transition, and the development of solutions to overcome the indicated barriers.

Potential Activities

- In-depth analysis of implementation lessons (positive and negative) from intermodal and co-modal studies and pilots (identifying most important implementation and transition issues).
- Identification of most appropriate freight transport markets for the synchromodal concept (e.g. defined by transport distance, value of transported goods, heterogeneity/homogeneity and density of the flows, types of packaging).
- Development of strategies for a synchromodal transport system with associated new logistics/service concepts, ICT systems, infrastructures (terminals) and possible vehicle concepts.
- Implementation/transition analysis for synchromodal transport in light of the available experiences with intermodal transport.
- Deployment, assessment, and evaluation of a synchromodal transport system to optimise logistics and supply chains (based on developed information infrastructure and data model).
- Linkage of companies from different clusters to develop efficient "back-hauls" for synchromodal shipments. Clusters could identify possible products for "back-haul" to avoid empty shipments.
- Review of supply chain agility concepts in the context of synchromodal transport as the ability to deal with risks inherent in all logistics operations (e.g. continuation after disruption or disorder).

Actors

- Consortium members
- Private sector, and especially logistics service providers and shippers
- Research institutions
- National and regional authorities

Funding

- National funding
- Private investments from collaborating companies
- Horizon 2020

Impact

Potential beneficiaries include the supply chain actors, especially logistics service providers and shippers. Specific benefits extend to a better understanding of implementation/transition barriers to synchromodal transportation systems, increased capabilities for effective future policy-making (legislation, investments in physical infrastructures, investments in supporting technologies, instruments to overcome implementation barriers), and additional possibilities for new business opportunities based upon value-added logistics services. With appropriate policy instruments implemented, the suggested activities will ultimately lead to better functioning and thus more sustainable and cost-effective transport systems.

The project will also contribute to the scientific discussion on the possibilities for off- and online synchromodal planning. More specifically, it is important to mention that many goods are delivered following a very fast service pattern despite, in many cases, the absence of the necessity to do so. This opens up the prospect for adequate offline multimodal planning of the transport movements in the transit chain. Yet, an online adaptation related to real-time problems (as in synchromodality) of these offline-prepared plans appears difficult due to the very limited degrees of freedom to switch modes in practice. This is still an unfinished discussion where academia needs to assist in defining properly the important issues.

Risks

The synchromodal transport approach is complex and requires the integration of a large set of stakeholders throughout the various supply chain disciplines, many of which are yet unwilling to participate. Gaining their acceptance and coordinating the interests in the process poses a major challenge as it requires a major shift in mind. While key actors would have to take the initiative, they are often confronted with obstacles such as lack of a proper systematic approach or inadequate collaboration and financing support.

3.4 European Expert Groups on Logistics and Mobility

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban and logistics

Participating consortium partners				
ALIA	Dinalog	HOLM	ULUND	MTSO (mentored)

Motivation

Europe has a central position in the worldwide flows of passenger and freight transport. The transport industry is thereby an essential component of the European economy. The logistics industry in many parts of Europe faces similar challenges, e.g. in regard to the globalisation of supply chains, urbanisation trends, infrastructure capacities, and increasingly rigorous environmental legislation. Still, the discussion on the issues and the development of solutions occurs rather isolated, with little interaction between the different regions. Consequently, the risk of double work, redundant efforts, and application of outdated concepts and technology as a consequence of lacking knowledge about existing best practices and solutions may pertain.

Objective

The current project intends to support the search for future solutions to common problems through an exchange of ideas between European logistics clusters. The implicit goal of setting up European expert groups is to support the internationalisation and integration of the participating clusters by providing possibilities for its members to establish contacts with actors from other logistics clusters in order to discuss and exchange knowledge about current issues in the field.

Potential Activities

- Screening of stakeholders, identification of prevalent issues not yet sufficiently discussed on a European level, and consequent initiation of respective expert groups. A specific issue which has already been identified by the clusters as most relevant for a European-wide dialogue are aspects of city/urban logistics. The efforts made by some partners in this regard may serve as a foundation for the current project.

- Knowledge transfer between different expert groups for further synergies and ultimate dissemination to relevant external actors.

Actors

- Consortium partners
- Experts and representatives from companies, regional institutions, and the research community from the clusters as well as from other regions

Funding

- EU funding, e.g. through Horizon 2020
- Consortium partners
- Participating organisations and institutions sending experts

Impact

The project will foster trans-national cooperation between research-driven clusters as well as mutual learning between regional actors (as also formulated in the mission statement of SoCool@EU). The contacts established in expert group meetings inherit great potential benefits for the participants and their respective clusters. The expansion of personal networks will improve the integration of the European transport and logistics community and clusters and support the identification of appropriate partners for future projects in research or business cooperation. Implicitly, the internationalisation and industry integration of the logistics clusters will be stimulated, thus contributing to solutions for future sustainable and competitive transport and logistics in Europe.

Risks

An important step concerns the identification of relevant experts which are interested in the topic and can deliver valuable input for discussions and conversations. Not all companies or institutions will be able or willing to dispatch their experts for the time of the group meetings. Especially when it comes to the incurred costs (e.g. travel), the risk remains that only experts from big companies and institutions (with potentially wider funding opportunities and greater staff flexibility) will form part of the expert group meetings, which would lead to an under-representation of small and medium-sized companies. In the meetings, participants are likely to fear knowledge drain and hesitate to share best practices, knowledge, and experiences. In order to avoid this conflict, the groups require a long-term perspective to remove pressure for results at the beginning and subsequently create a trustful and respectful atmosphere for optimised mutual learning and networking.

3.5 Empowering Industrial Internationalisation through Inter-Cluster Cooperation

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban and logistics

Participating consortium partners				
ALIA	Dinalog	HOLM	ULUND	MTSO (mentored)

Motivation

In order to maintain or improve their competitiveness, firms in recent decades have seen themselves increasingly forced to adapt their economic strategy to confront continuously changing technological and economic framework conditions. The clustering of different competences along a value chain in a region is oftentimes an important element of competitive advantage for firms. Still, the successful participation in international value chains has also become a requirement for economic success in many industries. Further, companies more than ever have to act successfully on foreign markets to persist in global competition.

The required efforts towards internationalisation and international cooperation are often difficult to achieve for individual small and medium-sized enterprises (SMEs), e.g. due to limited resources. A recent survey² of DG Enterprise and Industry of the European Commission underlines that only 13% of European SMEs are active beyond the EU and stresses the need for more effective cooperation between the parties involved in industrial support to help EU enterprises do business outside Europe more successfully.

In this respect, clusters can support companies, and in particular SMEs, to find partners for international business. DG Enterprise and Industry of the European Commission underlines the importance of clusters in supporting firms and in particular SMEs to cooperate with strategic partners and become more internationally oriented both within and outside Europe³. Several

² Zombori (2012). "Input paper to workshop on international cluster cooperation for SMEs: Towards a European approach". Brussels, 12.12.2012.

³ European Commission (2011). "Public Consultation: Small Business, Big World – A new partnership to help SMEs seize global opportunities".

http://ec.europa.eu/enterprise/newsroom/cf/itemlongdetail.cfm?item_id=5119&lang=en&tpa=0&displayType=consultation&ref=newsbytheme%2Ecfm%3Fflang%3Den%26displayType%3Dconsultation%26fosubtype%3D%26tpa%3D0%26period%3D2011%26month%3D%26page%3D4

studies confirm that international cooperation between companies may be facilitated in a cluster context^{4 5}.

Clusters thus can act as "springboards" for companies to help them access international value chains and develop long-term strategic partnerships that can raise their capabilities for innovation and overall competitiveness.

Objective

The general objective is the provision of business support services for international networking and cooperation through the SoCool@EU clusters which will allow their industrial members (especially SMEs) to grow and innovate through collaboration and strategic business cooperation. The aim is to identify and arrange inter-cluster cooperation activities, offering matchmaking opportunities for European cluster organisations and their industrial members with international partners within and outside Europe. Strategic cluster partnerships will be the tool in implementation.

Potential Activities

- Identification of competencies in clusters and potentials for leverage. Gaps and needs of regional industries in regard to cooperation partners should be investigated, and existing key players should be empowered.
- An internationalisation strategy for business support services will be developed, implemented, and followed up to, comprising specific activities and services for European cluster organisations and their industrial members with partners inside and outside Europe. Planned activities include the support for legislative measures to remove trade barriers, organisation of networking events such as partnering or "matchmaking" missions, organisation of educational events for SMEs on benefits of clusters, and dialogues on relevant issues such as internationalisation strategies of firms.
- The project will further implement activities to establish European-wide strategic collaborations, including a database of specific related European networks and clusters as well as the establishment of collaborations with several complementary European initiatives such as the Enterprise Europe Network (EEN) and the European Cluster Cooperation Platform (ECCP). Further, the SoCool@EU clusters and possibly further cluster collaborators will initiate a process to set up a European Strategic Cluster Partnership (ESCP) aimed at encouraging the participating clusters to move from networking to

⁴ Meier zu Köcker, Buhl (2007). "Internationalisation of Networks – Barriers and Enablers". On behalf of the Federal Ministry of Economics and Technology (BMWi). www.kompetenznetze.de.

⁵ Meier zu Köcker, Müller, Zombori (2010). "European Clusters Go International - Networks and clusters as instruments for the initiation of international business cooperation". Institute for Innovation and Technology.

developing and implementing joint strategies in new areas and thus reinforce cluster internationalisation.

Actors

- Consortium partners and other European and third country clusters in the area of transport and logistics
- Related European networks such as ECCP and EEN
- Industry partners within and outside clusters
- Collaboration with regional authorities may be necessary to apply for certain funding sources

Funding

- The future programme of the EU for the Competitiveness of enterprises and SMEs (COSME 2014-2020)
- European tenders from DG Enterprise and Industry
- Funding from the regional public authorities
- Private investments

Impact

The efforts made towards internationalisation will support the ability of SoCool@EU cluster members to penetrate foreign markets, engage in cross-border collaborations, and establish joint transnational R&D activities. The involved regions will benefit as a consequence in terms of improved economic competitiveness and innovation ability.

Risks

Collaborating clusters may not be interested in proceeding with the administrative procedures necessary to establish a European Strategic Cluster Partnership (ESCP), or they do not fulfill the requirements for establishing an ESCP. Further, certain clusters may want to protect their current advantages and/or dominant positions and decline efforts towards international integration and exchange.

3.6 Green Supply Chain

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban and logistics

Participating consortium partners				
Dinalog	HOLM	ALIA	ULUND	MTSO (mentored)

Motivation

Freight transport is a main driver of the fast-moving and interconnected economy and society of the 21st century. Yet, the growth in transport activities is an increasing burden for the environment. The global challenge consists in achieving a reduction of the environmental impact of logistics activities while at the same time realising a benefit for the firms. The industry in itself will hardly invest in green conduct without related economic benefits. Moreover, the fact that the transport sector is acting on an international level implies special requirements towards concerted action. The optimisation of supply chains implies coordination beyond borders and can only be realised through a strong international network.

Objective

The main objective is to optimise international supply chains in terms of CO² emissions while considering the economic realities of industry actors. The objective implies the strengthening of regional logistics clusters and stimulation of collaboration of clusters in different countries/regions to form part of green corridors.

Potential Activities

- Identification of compatible business models in the context of green logistics and collaborative piloting in European clusters to stimulate commitment from the industry side.
- Investigation of possibilities and best practices for smart regulation to set appropriate incentives for the industry.
- Support for the continued setup of a demand-driven European incentive programme for sustainable and competitive freight transport with a network oriented approach and

European-wide impact. There is already an ongoing Lean & Green programme in Europe (NL, BE, ES, DE, IT) which could provide a starting platform for further work. Efforts to promote horizontal collaboration (e.g. CO3) are closely related to this programme.

- Explicit efforts to raise awareness of all companies and authorities involved in a chain for their individual responsibility to reduce CO² emissions, thereby articulating shared values and specific targets, and initiating a joint approach to the achievement of these targets.

Actors

- Consortium partners
- Logistics industry
- Public authorities

Funding

- Horizon 2020

Impact

If successful, the project will contribute to a win-win situation for the logistics industry and society. Firms may be able to improve efficiency in conduct and reduce costs (e.g. through efficient fleet management), while the European society might benefit from reduced negative externalities of the industry, and most notably, emissions.

Risks

Although necessary, the involvement of the industry will pose a significant challenge, especially on initiatives which probably raise requirements towards operations and complicate business conduct. Further, in order to achieve sustained impact for a large number of partners and the society as a whole, finding a proper platform to continue and perpetuate initiatives/projects and related activities will be necessary.

3.7 The Impact of E-Commerce Service Models on Supply Chain Cost and Emission Efficiencies

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban and logistics

Participating consortium partners				
ALIA	Dinalog	HOLM	ULUND	MTSO (mentored)

Motivation

The growth of e-commerce is a global phenomenon. E-commerce sales in Europe reached 300 billion Euros in 2012 with a predicted 20% annual growth rate⁶. While the growth has been spectacular, the impacts of the e-commerce model on the supply chain are only beginning to be analysed. The transition from a supply chain organised for scheduled delivery service to retail stores to one that must also handle on-demand delivery to individuals can result both in cost inefficiencies and increases in transportation-related greenhouse gas emissions. The differences become apparent when comparing the supply chains and their characteristics:

- A retail outlet supply chain (simplified): Manufacturer → Distribution Centre → Retail outlet. Shipments are scheduled and in volume. Therefore, no consolidation is required and shipments are transported directly to the customer. High capacity utilisation as well as the direct routing without transshipment operations result in low emissions per transported item.
- An e-commerce supply chain (simplified): Manufacturer → Outbound consolidation centre → Distribution centre(s) → Individual customer. The shipment is often a single item, collected by a delivery service, cross-docked at a consolidation centre, transhipped through one or more distribution centres, and then shipped to the final customer. The consolidation in hubs results in indirect delivery paths and surplus travelled distances. Emissions and costs per transported item are higher in this model compared to scheduled direct delivery.

Assuming that the customer does not travel to the store when using the e-commerce business model, it could be argued that there is a reduction in emissions generated from customer travel. However, in most cases, the customer still travels to the store/mall to either physically inspect the product before buying it on the internet or to purchase other goods so that in consequence there is oftentimes no reduced customer travel. E-commerce further oftentimes provides generous return policies. Some estimates in the USA have put e-commerce returns as high as 50% versus retail

⁶ Devenuto (2012). Speech on E-commerce Conference 2012.

store returns of 10-15%. As a result, e-commerce requires a more sophisticated reverse loop supply chain which apparently results in higher emissions.

Objective

E-commerce significantly impacts the supply chain and logistics network designed for efficient deliveries to retail outlets in terms of cost and emission. Since e-commerce is here to stay, it is imperative that supply chains now and in the future quickly adapt and become as efficient as possible in enabling the changing business model. Most manufacturers will continue to support both the retail store model and the e-commerce model in the next decades. Efficient solutions thus have to incorporate both models. The current project will attempt

- a. to evaluate the impact of the changed business model in terms of transportation cost and emissions for a representative supply chain including the reverse loop.
- b. to investigate and suggest alternative network-, inventory-, transportation-, warehousing-, and collaboration strategies to increase efficiency in the e-commerce supply chain.

Potential Activities

In regard to objective (a):

- Collection of trip data for e-commerce model shipments and similar data for retail store model shipments. Data should include reverse loop shipments if possible.
- Definition of required assumptions and detailed analysis of collected data.
- Benchmark/review of findings against other significant e-commerce supply chain analyses (if possible).
- Conclusion and report on whether e-commerce business models have significantly different performance in terms of logistics costs and greenhouse gas emissions vs. conventional retail store models.

In regard to objective (b)

- Intensive search for innovative supply chain practices in e-commerce, addressing costs and emissions (e.g. store-and-forward concepts and innovative packaging).
- Building of teams of researchers and e-commerce supply chain experts and subsequent expert-driven identification and analysis of alternative approaches.
- Development and execution of pilot/prototype studies of the best alternatives identified under various scenarios (extremely positive theoretical results can be monetised at this stage).
- Communication of results from pilot studies and attempt to build real world operations based on successful pilots.

Actors

- Consortium members
- Industry
- Research institutions
- National and regional authorities

Funding

- Horizon 2020
- National funding

Impact

Through the single delivery model and the frequent return of goods, the e-commerce business model is bound to lead to increased levels of logistics activities. As a consequence, modern transportation solutions for e-commerce will have significant (alleviating) effect for traffic volumes and congestion caused by transportation and delivery activities, especially in densely populated urban areas. At the same time, related efficiency gains may enable reductions in terms of costs and emissions produced in the e-commerce supply chain.

Risks

As the current project seeks to critically evaluate the environmental impact of a new business model connected to e-commerce, it might irritate major e-commerce players and stakeholders pushing for e-commerce.

3.8 Innovative Models in the Rail Freight Transportation System

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban and logistics

Participating consortium partners				
ALIA	Dinalog	HOLM	ULUND	MTSO (mentored)

Motivation

Increasing the share of rail freight in total transport volumes is one of the key objectives for transport policy in order to reach the European goal of reducing CO₂ emissions by 60% for 2050 compared to 1990 levels⁷. In that, the EC White Paper⁸ calls for a modal shift in which 30% of potential road freight transport over 300 kilometres should move to rail and waterborne transport by 2030 (50% by 2050).

Although rail freight has been seen as a future opportunity to reduce both costs and negative environmental impacts of logistics, the share of rail freight transport decreased in the EU from 18.8 in 2001 to 17.1 % in 2011⁹. Supposedly, one of the main reasons behind this trend is the difficulty to have a truly interoperable and seamless European rail freight network without which rail often performs worse to road in terms of reliability, cost, and lead times. While the interoperability between national rail systems in European countries is still insufficient, there is also a continuing lack of dynamism, reliability, flexibility, and customer orientation on the part of railway undertakings.

Objective

The objective of this project is to analyse current opportunities to move freight from road to rail whilst sustaining competitiveness and to implement specific projects making use of current and new best practices. Some of them have already been identified and will be subject to thorough

⁷ COM (2011) 112 final. "A Roadmap for moving to a competitive low carbon economy in 2050". European Commission, Brussels, 8.3.2011.

⁸ COM (2011) 144 final. WHITE PAPER "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system". European Commission, Brussels, 28.3.2011.

⁹ Eurostat: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=tran_hv_frmod&lang=en

investigation, including: Ferroutage¹⁰, re-using idle capacities, horizontal collaboration, and bundling of cargo for long-distance transport.

Potential Activities

- Initiatives to identify and leverage the potentials of improved and integrated infrastructures in rail transport for the attractiveness of the transport mode, including identification of bottlenecks, hub infrastructure development, international cooperation on further development of technologies (e.g. tracks) and framework conditions as well as network coordination.
- Initiatives to conduct neutral cost-benefit and total cost of ownership analyses for predefined routes to better understand the modal choice and gain insights into the efforts needed to make rail transport more attractive.
- Information exchange and identification of cases for a best practice transfer based on previous findings, e.g. exploration, definition, and development of Ferroutage.
- Implementation of horizontal collaboration practices developed in projects such as CO3¹¹ between shippers in order to define routes within Europe in which combined volumes of companies could justify a joint request/initiative for specific rail freight (multi-client) service.

Actors

- Consortium partners
- Rail freight operators, logistics service provider, and shippers
- Rail freight technology providers
- European Commission, National authorities, Regional authorities

Funding

- Companies
- European funding (Connecting Europe facility TEN-T and "Marco Polo")
- National funding

Impact

¹⁰ Ferroutage refers to loading whole lorries onto a train and thus reducing significantly the transshipment costs of transports comprising a modal shift, with the benefits from both transport modes. The combination offers green and cheap transport over railway, combined with the speediness and accuracy from road transport.

¹¹ Collaboration concepts for Co-modality (<http://www.co3-project.eu/>).

The beneficiaries of this project are companies and society in general. European companies, especially shippers and logistics service providers, could benefit as a consequence of reduced transport costs and increased operations efficiency. Society may benefit due to a reduction in traffic congestion and less environmental impact of logistics operations (as rail produces fewer emissions per transported ton than road transport).

Risks

Road and rail transport companies often perceive each other as direct competitors and therefore might be unwilling to participate in combined efforts. In cases where partners consent to joint activity, it might still prove to be difficult to establish collaboration mechanisms between participants and implement known business models such as horizontal collaboration. Cases exist where several companies tried to establish "unit trains" and failed due to a lack of coordination and interoperability between European railways.

3.9 Increasing Efficiency of Inbound Cargo into Hubs through Collaboration and ICT Solutions

Field of joint action

Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban and logistics
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Participating consortium partners

ALIA	Dinalog	HOLM	ULUND	MTSO (mentored)
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Motivation

Large logistics hub infrastructures such as ports, airports, and multimodal terminals often represent bottlenecks in regional, national, and international transport systems. They act as an interface for handover or exchange of cargo between multiple actors and modes of transportation. It is here that different process chains with different steering actors become dependent on each other, be it through inputs from otherwise unrelated freight forwarders or due to service partners in integrated supply chains. The accumulated quality of coordination of common activities between these stakeholders is a critical determinant for the efficient operation of hub infrastructures and consequently also all actors drawing on hub services.

The absence of coordinated conduct may lead to inefficient volatility in utilisation. Volume peaks on the incoming cargo side pose a growing challenge in face of widely increasing transport volumes related to distributed production structures and supply chains as well as to consumer trends towards e-commerce. Already today, many hub infrastructures are working at upper capacity limits during normal hours. They are increasingly unable to accommodate to larger peaks of incoming cargo in demand for handling, leading to more and more signs of exhaustion such as congestion and hold-ups at hub entry points. Negative economic consequences for stakeholders directly take shape in idle times and increased operating costs. Negative externalities of transportation such as noise, traffic congestion, and increased fuel usage / CO₂ output grow correspondingly. Few necessary infrastructure expansions to account for the increase in cargo volumes are realised due to space limitations, public resistance, and government budget cuts.

Thus, in order to come up to the challenge of constantly growing volumes, the coordinated and efficient utilisation of existing hub infrastructures is of central future importance. Two main building blocks in this regard are (1) hub management/on-site logistics and (2) supply chain management.

Objective

The objective is to find coordinated and harmonized solutions to incoming hub operations to ensure the sustained functioning and optimisation of the system in face of increasingly challenging conditions. The task extends to matters of integration, information exchange, governance, and control in supply chains. This implies the willingness of stakeholders to get involved and a common approach to information technology infrastructure and solutions. Regionally, the idea of a "cargo community" or network among cargo firms in large regional hubs requires establishment in order to support transparency, widespread informal coordination as well as the advancement of regional knowledge networks. In order to arrive at best practice solutions, a European-wide dialogue and knowledge exchange enables new possibilities to mutually learn from each other and promote common approaches to European hub integration.

Potential Activities

- Activities are most relevant in the fields of
 - Standardisation of data
 - Ownership of data
 - Hub strategy
 - Tracking and tracing and RFID
- Viable initial actions include the screening of existing structural, management-related and technical solutions as well as the work done in the matter on an international/European level (e.g. in prior or ongoing EU projects such as EURIDICE, AMITRAN and ICT-EMISSIONS) and in regard to standards (e.g. Cargo2000, xml-standards and app development). A group of experts could act as a focal body evaluating the state of the art. The wider business community should be involved directly to maximize voice from practice.
- In a next step and based on a comparative analysis of the existing solutions in different hubs, optimisation potentials in terms of business models, governance structure, technical feasibility, and acceptance in the business community need to be identified. It is here that the European-wide perspective as well as the involvement of markedly different hubs (across transport carriers) bears large potentials for mutual learning.
- Finally, identified best practices and concepts may be integrated into a business case and European-wide pilot projects for implementation, thereby leveraging the heterogeneity of the regional settings. Besides new initiatives, ongoing regional projects could be raised to a European level and thus foster further knowledge and practice dissemination and exchange. A manifest project concerns the advancement of harmonized Information and Communication Technologies (ICT) concepts to hub operations which integrate all relevant stakeholders to enable the coordinated steering of inbound cargo flows.

Actors

- Consortium partners
- Hub infrastructure providers
- Industry users of hub infrastructures, including feeders, freight forwarders, 3PL as well as the manufacturing and retailing industry
- Enablers from the ICT sector
- Research institutions
- Economic initiatives and business development agencies
- Regional authorities

Funding

- Funding through actively involved business partners, e.g. infrastructure providers and the regional cargo communities.
- National public funding
- Public EU funding, e.g. through the European Regional Development Fund (ERDF)

Impact

The benefits from action in intelligent hubs have far reach. The involved actors from the business world are in an improved position to plan their activities, and as a result, may face less idle periods and cost while simultaneously reducing transportation and commissioning times. In cases of contradicting interests, mutual understanding might be established, leading to an alleviation of the conflicting business objectives. The hub operator may be able to further optimise the use of its infrastructures in the wake of reduced frictions formerly caused by extensive and un-coordinated inputs at entry points, and thus ultimately raise throughput and handled cargo volumes of involved companies. The residing municipalities and population may profit from a reduction of negative externalities related to transport activities such as traffic congestion, noise and pollution. As a further result, the activities of the hub and its adjacent companies may meet higher levels of public acceptance.

Risks

Multiple actors are involved in processes linked to logistics hubs, each with own interests and problems to solve. Often the issues resemble and an exchange as well as concerted action of the different stakeholders involved is a viable option to arrive at common solutions. Still, in some cases interests of actors are conflicting, and the striving towards optimisation of individual interests of one stakeholder may lead to detrimental effects for other actors and a decreased overall performance of the process chain. For example, a transshipment company at a hub site might prefer to always

have a few incoming transports in queue so to ensure own maximum capacity utilisation instead of coordinated incoming cargo raising the risk of belated transports leading to own idle time. Closely related are legal and privacy issues arising in the context of transactions across firm boundaries.

These areas of conflict require careful mediation between the involved stakeholders. For example, in order to alleviate the exemplary issue, appealing answers might include putting the infrastructure operator in a central coordinating role. Yet, also this solution should be discussed critically in view of issues arising with monopolizing structures. In regard to interregional best practice exchange, the transferability of solutions between hub settings with different transport modes has yet to be investigated, as for example a maritime seaport apparently faces conditions different from an airport hub.

3.10 Logistics Education, Training, and Valorisation

Field of joint action					
Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban logistics

Participating consortium partners				
Dinalog	HOLM	ALIA	ULUND	MTSO (mentored)

Motivation

Research institutions inherit large potential to contribute to industry development and business conduct with their work. Still, findings are seldom brought successfully to the market. Oftentimes, industry is not aware of research results with potential for application in practice. On the other side, research institutions often lack understanding for the needs of industry. In consequence, their work is often inapplicable for companies.

Apart from this untapped potential in results exploitation and considering the ever more complex operations in transport and supply chains, there is an increasing need in Europe for regular knowledge upgrades of the workforce active in logistics companies as well as increased interaction between education and practice to ensure alignment of curricula with business requirements. Various programmes for training in logistics and supply chain management are already in place. However, the development and implementation of important issues is insufficient, including logistics and supply chain strategy and finance, business development, service logistics, reverse logistics, as well as the role of technology (e.g. ICT).

Objective

A major objective consists in the development of a valorisation framework to bridge the gap between research and innovation, and thus improve the transfer and application of new technologies and scientific results in innovative products and services. Further, it is critical to promote prevalent issues in logistics (e.g. the above mentioned) in current and future training programmes.

Potential Activities

- Development of a model for standardised evaluation of research results towards valorisation possibilities. The goal of the framework is to stimulate researchers to act upon promoting their results to industry for implementation in innovative products and services.
- Identification of best practice education programmes, further development and implementation of prevalent issues in logistics and supply chain management in education programmes, as well as promotion of education offers to industry.

Actors

- Consortium partners and other logistics clusters
- Industry
- Universities

Funding

- National funding programmes
- Horizon 2020

Impact

Both the logistics industry as well as research institutions would profit from a more professionalised transfer of research results into practice - the industry from improved conduct and resulting performance, and research institutions from additional funding sources.

A European-wide approach to enhance logistics education could result in closer alignment of training and study modules to the needs of the industry and diffusion of best practice programmes. Ultimately, a well-trained workforce directly influences innovative capabilities of firms.

Risks

Although the benefits of knowledge exchange between research and industry are clearly identifiable, it seems especially difficult to get industry partners involved. Generally, there is still a large-scale effort needed to raise the necessary awareness for the issue on both sides in order to find common topics of interest and foster practice-driven research also in the academic world. Even in cases where the alignment of interest has been successful, it might prove difficult to find a general best practice approach for exploiting research results.

The same is true when it comes to logistics education. Possibilities have yet to be identified for the development of new modules for education and training programmes that are suitable for all

logistics clusters. Further, investing in education is often still not on the strategic and operational agenda of the logistics industry, although the shortage of qualified professionals becomes a considerable problem in the sector.

3.11 Coordinated European Development of Pilot Solutions for Urban Logistics

Field of joint action

Advanced supply chains and ICT	Cluster development and internationalisation	Green logistics	Intelligent hubs	Knowledge transfer and valorisation	Urban logistics
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Participating consortium partners

ALIA	Dialog	HOLM	ULUND	MTSO (mentored)
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Motivation

Historically, economic activity has oftentimes concentrated in urban areas. Although the rise of the information age has made spatial distances less relevant in many respects, the geographical dimension is still of high importance for many economic activities involving transportation. Many countries currently observe an ongoing migration trend from rural to urban areas, leading to higher population densities and growing economic activity in those locations.

In direct consequence, the local urban transport infrastructure has to accommodate ever larger numbers of commuters and commercial traffic volumes. In addition to the increase in the absolute number of consumers, transformations in the retail landscape (more chain retailers and shopping centres, less independent local stores) as well as new business models and technological innovation related to transportation and e-commerce (e.g. mail order outlets) reshape or increase the demand for urban logistics solutions. Metropolitan areas are endowed with often global transportation hubs enjoying constant growth due to globalisation trends. This puts additional strain on the local infrastructure due to their incoming, outgoing, and transit passenger and cargo flows. These trends towards ever larger and volatile traffic volumes lead to situations in which the capacity of the local transport infrastructure is exceeded, especially during peak hours. Negative effects of transport activities on the quality of life in urban areas such as congestion, traffic safety, air pollution and noise are increasing public resistance to additional invasion. Changed priorities in regard to infrastructure development and environmental protection often further tighten the requirements raised towards transportation activities.

In order to sustain an efficient functioning of the economic system and preserve quality of life in metropolitan areas, new solutions for the movement of cargo and passengers in the urban context have to be found.

Objective

The pervasive challenge relates to the continuous efficient transport of goods and passengers in urban areas in face of increasing volumes while at the same time sustaining the quality of life in these conurbations by minimizing the invasiveness of logistics activities.

More specifically, the information base on passenger and goods flows in their specific urban context has to be improved in order to gain a holistic understanding for the prevalent issues of all modes of transportation and their related infrastructures. Further, the objective extends to the investigation of collaborative, technological, and regulatory possibilities to arrive at solutions for the design, equipment and implementation of orchestrated urban transport in concepts of "smart cities" or cities as "smart hubs".

These approaches will have to be large-scale and consider issues, actors, technologies and business models of an entire urban transport system to ensure success. They should build on best practices as identified not only on a local, but on a European level.

Potential Activities

- Real-time diagnosis of the issues in urban logistics in European metropolitan areas in order to provide a sound foundation for further action. Databases with real-time data on traffic generators and flows in urban areas are a fundamental requirement.
- Development of simulation models to enable analysis of traffic scenarios, stress tests of network capacities, and carbon footprint calculations.
- Identification of optimisation potentials and comparative analysis of the cities to identify similarities in issues and best practices, enlarge the individual perspective of each partner, and discuss the inter-regional transferability of solutions.
- Business impact assessment of transforming urban areas into smart cities (e.g. in regard to e-commerce), and investigation of possible new business models and opportunities.
- Development of specific common or individual actions and pilot projects to be implemented towards optimised urban logistics.

Actors

- Consortium partners
- Industry partners such as couriers, city stores, real estate providers, freight forwarders, 3PL, and companies with urban distribution
- Research institutions
- Business development agencies
- Local authorities and traffic security institutions

Funding

- Funding through actively involved project partners, e.g. authorities, infrastructure providers, the manufacturing-, transporting-, retailing- and wholesaling industry
- EU, national and regional funding

Impact

The population of cities is the primary beneficiary in terms of more efficient transport activities and less related negative externalities such as congestion, air pollution, and nuisance. The local retailing and wholesaling industry as well as private customers / recipients of goods involving logistics services may take advantage of more customized delivery solutions. Ample chances exist for the transport and distribution industry to increase efficiency and devise innovative business models for urban regions in order to gain competitive advantage.

Risks

Although the negative effects of overstrained inner city transport infrastructures are oftentimes already most apparent, the awareness for the urgency of improving goods and passenger flows in metropolitan areas is still missing. As for the identification or development of best practices, it is yet questionable whether a collaborative approach and knowledge exchange between several urban centres will yield synergetic benefits. Major obstacles include the geographic, demographic, infrastructural, and political framework conditions which oftentimes differ markedly between metropolitan areas.

In regard to implementation, advances in urban logistics concepts can only be realised in a holistic approach and requiring the involvement of a very large and diversified set of stakeholders with different interests, including local authorities and governmental agencies, local industry and the general public. Motivating and integrating these actors in accordance with oftentimes conflicting objectives is a major challenge. Except for cases of compulsory regulative measures, failing to mediate and coordinate interests in the introduction of innovative concepts in urban logistics may lead to low acceptance and consequent adaption. Finally, new solutions might require substantial initial investment in infrastructures, which in times of government budget reductions might pose a serious impediment.

4 Conclusion and Outlook

The eleven presented project impulses and their related activities will be further developed and finally implemented in Work Package 4. It is planned that every project of the Business Plan will have one consortium partner as driver for implementation and at least two partners from the SoCool@EU consortium participating in total. Projects will involve partners from industry, research, and government where applicable. The planned minimum work agenda for each project includes

- further development and joint specification of a clear business case/model for each project taking into account the status of research, the role of clusters and their actors, and innovation/market potential.
- a specific mapping of possible funding sources, e.g. Horizon 2020.
- a compilation of existing projects and contact persons in all SoCool@EU clusters.
- interviews with two companies and one research institution and public authority each.
- a European workshop at the driving cluster where relevant stakeholders from all over Europe will give input to the project.
- an implementation plan, including project outline/idea, concrete partners, and funding proposals.

Work Package 4 will start on 1 July 2013 and end on 31 December 2014 with the establishment of a platform concept for Europe-wide cluster cooperation and the implementation of the projects whose results are expected to have relevance and influence long after the SoCool@EU project has ended.

Year Project month	2013						2014											
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Mapping possible sources of funding																		
List of existing projects and contact persons																		
Interviews with experts																		
European workshop per selected project																		
Final implementation plan per project																		

Figure 3 Planned work agenda for project development in Work Package 4

Source: Own illustration, 2013.

Participation in a spin-off project of SoCool@EU has a number of potential benefits. A participating actor will be able to enlarge and strengthen his European network of contacts. Further, especially actors from industry will have direct contact and access to knowledge from leading universities and R&D institutions. Participants will also have the opportunity to make use of funding opportunities for collaborative research projects. In terms of corporate image, the participation in a European research project may be used as a branding for innovation.

The Business Plan invites actors in the regional clusters to participate in the projects and further develop the proposals towards realisation. Implicitly, the descriptions set out in the present document are subject to the development of the interests of the participating actors. Additional input will lead to specifically detailed project outlines as part of Work Package 4.

Similarly, additional projects might turn out to be of relevance for the project clusters in the course of time. The initial eleven project impulses are thus a motivation to derive further project ideas which will complement those already planned for implementation on the platform. As additional input/projects may derive from actors of both the consortium clusters and other regions in Europe, the SoCool@EU project will hold the promise of its vision: to be an open European platform of excellence enabling research-driven clusters in logistics throughout Europe to collaborate and mutually learn from each other.

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