Project ENABLE
Stimulate Sustainable Freight Transport Systems with Latin American countries

Deliverable D3.1
Roadmaps enabling the European know-how transfer to Brazil and Argentina

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CONTROL SHEET

Abstract
The deliverable D3.1 is the final technical deliverable of the project ENABLE that aims at presenting a series of roadmaps that will facilitate the future implementation and deployment of selected European best practices, research results and innovations in the two targeted Latin American countries of Argentina and Brazil. An additional aim is to present an overall framework of cooperation between the EU – LA regions for a sound and successful knowledge transfer.

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EXECUTIVE SUMMARY

One of the main EU’s objectives in the coming years is to establish a strong network of cooperation with the Latin American (LA) countries, thus achieving a favourable path for a win-win, strategic partnership among the European and the LA region. The ENABLE project addresses this aim by promoting European innovations and best practices that will facilitate the sustainability in the field of freight transport to the LA target countries. The expected benefits are considered bilateral. In particular, for LA the benefits mainly include technology transfer, improved productivity and diversification of its market, while for EU the benefits mainly include chances for further strengthening its market position and pursuing a dynamic investment policy.

Within the ENABLE technical activity of identifying and analysing the transport system and its use in the trade between Brazil and Argentina and the European Union, particular emphasis was placed on the identification of the barriers, obstacles and opportunities to the inter- and multimodal freight transport and logistics sustainability in the two aforementioned LA countries. In turn, this activity led to a targeted identification of those European outstanding business cases and research innovations that best addresses the LA regional freight transport needs and requirements. Important guidance during the whole procedure has been offered through conferences and forums events that were held in Brazil and Argentina under the umbrella of the project.

The next step was to offer those tools that would actually enable the transfer of the European know-how to the LA region. The current deliverable meets this goal by presenting a set of roadmaps and a hierarchical Framework for guiding the future implementation of the European best practices to the targeted LA countries. The set of roadmaps entails 32 roadmaps, one for each of the 33 identified best practices (two very similar best practices were jointly addressed in one roadmap), while the Framework provides a wider foundation that will facilitate the EU-LA cooperation, including the transfer of the ENABLE roadmaps.

The general approach for identifying the best practices and transforming each one of them to a roadmap has been the following:

- Benchmarking of the European intermodal best practices
- Search for sustainable concepts, industrial innovations, and intermodal solutions
- Classification and clustering of the best practices
- Review of innovations and emerging ideas
- Analysis of the organization of innovation process and business models of services
- Examination of transferability to other situations or framework conditions.

Thereafter, each roadmap has been developed with the use of a common template that included:

- The best practice's description (Fact Box)
- The identification of the stakeholders that could be involved in the transfer of the European best practice to the LA targeted areas (their roles were also identified)
- Preconditions that should exist in order to achieve a successful transfer
Deliverable D3.1: Roadmaps enabling the European know-how transfer to Brazil and Argentina

- Operational and organizational actions and measures to be applied
- Strategies and policies to be implemented

Two European business cases, reported in corresponding roadmaps, were selected for investigating their transferability in the two Latin American countries: Short Sea XML (SSXML) for Brazil and Polzug for Argentina. The validation process assessed the specifications of the roadmaps, while it identified the immediate steps that could be taken for the business cases’ transferability and investigated the interest of the local LA stakeholders for that matter. To meet the validation purposes, a robust methodology has also been developed and adopted, which included the criteria applied for selecting the appropriate stakeholders to be interviewed, the realization of technical visits for the LA partners at the premises of the European organizations that maintain the business cases, the steps to be followed during the interviews’ procedure, and more.

For Argentina, representatives of “to be” stakeholders stressed the need for government involvement, very much in line with a similar appreciation outlined by April 2010 forum participants, a broader and more diversified constituency. However, the need for policy may well be beyond the activities and field of knowledge of those interviewed, and this idea of government involvement needs further precision, and Polzug’s experience is particularly relevant. As reported in the current document, Hamburg’s city government emerges as the champion for both Polzug’s creation and long term management. Also, it is pointed out that working toward assuming such an institutional profile is an opportunity for the Port Authorities of the considered Argentinean ports, at least with regards to initial steps related to funding and bringing potential stakeholder’s to a negotiating table.

The respective port authorities are linked to provincial governments and not to city governments or the federal government. Transport professionals would usually equal government involvement with the federal level. It is true that tax revenue collection is eminently related to the federal government, but it shouldn’t be missed that provincial governments have been gaining technical capability and a larger say when deciding where the federal government puts investments in heavy infrastructure.

In contrast to a common scenario in other Latin American countries, the validation presented here has been instrumental in pointing out that in certain subsectors, Argentina’s logistics system has qualified operators, but up to date infrastructure may be the one element missing.

For the Brazilian reality, although the SSXML system presents itself extremely beneficial (generating great interest by the operators), the path for actually implementing the system is still long. This happens due to the fact that nowadays Brazil faces a great amount of bureaucratic, tax and regulatory barriers that hinder the promotion of sustainable freight transport solution in short sea shipping.

The difficulties of modal integration due to geographical and infrastructural issues, as well as the competition among road and rail transport, on one hand, and inland and coastal navigation, on the other hand, intensify the transferability weaknesses. Also, various other difficulties ranging from the communication between parties who have common interests to differences in the operating procedures and routines of the various actors that cannot be harmonized between each other, raise even more obstacles to the transfer of SSXML.
Concluding, the ENABLE validation procedure offered, through the interviews with the stakeholders, valuable suggestions regarding the transferability of each one of the business cases to the LA regions, as well as an important experience to the ENABLE partners themselves. This way, it enabled not only the improvement of the Framework and all roadmaps and the production of their final editions, but, also, the active involvement of the local LA freight transport community and their familiarization with the proposed European business cases.
ACRONYMS AND TERMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>3PL</td>
<td>3rd Party Logistics</td>
</tr>
<tr>
<td>ALL</td>
<td>América Latina Logística</td>
</tr>
<tr>
<td>B2A</td>
<td>Business to Administrators</td>
</tr>
<tr>
<td>B2B</td>
<td>Business to Business</td>
</tr>
<tr>
<td>BA</td>
<td>Buenos Aires</td>
</tr>
<tr>
<td>BB</td>
<td>Bahía Blanca port in Argentina</td>
</tr>
<tr>
<td>BESTLOG</td>
<td>“European Platform for Supply Chain Management Best Practice” – A European platform for good logistics practices</td>
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<tr>
<td>BLT</td>
<td>Build-Lease-Transfer</td>
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<tr>
<td>BOO</td>
<td>Build-Own-Operate</td>
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<tr>
<td>BOOST</td>
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<td>BOT</td>
<td>Build-Operate-Transfer</td>
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<tr>
<td>CA</td>
<td>Coordination Action</td>
</tr>
<tr>
<td>CEECs</td>
<td>Central and Eastern European Countries</td>
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<tr>
<td>CEN</td>
<td>European Committee for Standardization</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CGPBB</td>
<td>Consorcio de Gestión del Puerto de Bahía Blanca</td>
</tr>
<tr>
<td>CIS</td>
<td>Commonwealth of Independent States</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon monoxide</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon dioxide</td>
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<tr>
<td>CORDIS</td>
<td>Community Research and Development Information Service</td>
</tr>
<tr>
<td>DB</td>
<td>Deutsche Bahn</td>
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<tr>
<td>EC</td>
<td>European Commission</td>
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<tr>
<td>EDIFACT</td>
<td>Electronic Data Interchange for Administration, Commerce and Transport</td>
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<tr>
<td>EGNOS</td>
<td>European Geostationary Navigation Overlay Service Transport</td>
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<tr>
<td>EIA</td>
<td>European Intermodal Association</td>
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<tr>
<td>ENAPRO</td>
<td>Ente de Administrador del Puerto de Rosario</td>
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<tr>
<td>ESN</td>
<td>European Short-sea Network</td>
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<td>EU</td>
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<tr>
<td>FG</td>
<td>Federal Government</td>
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<tr>
<td>GNSS</td>
<td>Global Navigation Satellite System</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>HHLA</td>
<td>Port authority of Hamburg</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<tr>
<td>ISL</td>
<td>Institute for Shipping Economics and Logistics</td>
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<td>International Organization for Standardization</td>
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Deliverable D3.1:
Roadmaps enabling the European know–how transfer to Brazil and Argentina

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<td>Information Society Technologies</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transport System</td>
</tr>
<tr>
<td>KPIs</td>
<td>Key Performance Indicators</td>
</tr>
<tr>
<td>LA</td>
<td>Latin America</td>
</tr>
<tr>
<td>LDCs</td>
<td>Local Distribution Centres</td>
</tr>
<tr>
<td>LSPs</td>
<td>Logistics Service Providers</td>
</tr>
<tr>
<td>OBU</td>
<td>On Board Unit</td>
</tr>
<tr>
<td>O-D matrix</td>
<td>Origin – Destination Matrix</td>
</tr>
<tr>
<td>OEMs</td>
<td>Original Equipment Manufacturers</td>
</tr>
<tr>
<td>PCS</td>
<td>Port Community System</td>
</tr>
<tr>
<td>PPPs</td>
<td>Public Private Partnerships</td>
</tr>
<tr>
<td>PKP</td>
<td>the Poland state railways</td>
</tr>
<tr>
<td>PROMIT</td>
<td>“Promoting Innovative Intermodal Freight Transport” – A Coordination Action funded by the European Commission</td>
</tr>
<tr>
<td>PSTN</td>
<td>Public Switched Telephone Network</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research &amp; Development</td>
</tr>
<tr>
<td>RFID</td>
<td>Radio Frequency Identification</td>
</tr>
<tr>
<td>ROS</td>
<td>Rosario port in Argentina</td>
</tr>
<tr>
<td>SLA</td>
<td>Service Level Agreement</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SSS</td>
<td>Short Sea Shipping</td>
</tr>
<tr>
<td>TEU</td>
<td>Twenty-foot Equivalent Unit</td>
</tr>
<tr>
<td>T&amp;T</td>
<td>Tracking &amp; Tracing</td>
</tr>
<tr>
<td>UN/CEFACT</td>
<td>United Nations Centre for Trade Facilitation and Electronic Business</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Taxes</td>
</tr>
<tr>
<td>VIACOMBI</td>
<td>A EU funded project that presented user friendly intermodal services for door-to-door shipment.</td>
</tr>
<tr>
<td>WP</td>
<td>Work Package</td>
</tr>
<tr>
<td>XML</td>
<td>Extensible Markup Language</td>
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ANNEXES

A. Roadmaps for the transfer of EU know–how to the Latin American countries
B. Validation questionnaire
1. INTRODUCTION

1.1. Objectives

The ENABLE deliverable D3.1 aims at presenting a series of roadmaps that will facilitate the future implementation and deployment of selected European best practices, research results and innovations in the Latin American countries: Argentina and Brazil. An additional aim is to present an overall framework of cooperation between the EU – LA regions for a sound and successful knowledge transfer. Both aims serve the ultimate goal of the project, which is to transfer European best practices to Latin America and establish a fruitful and long-lasting dialogue between European and Latin American stakeholders.

The information provided in the current report falls under the main goal of the ENABLE project: to stimulate the external relations of the EU with the Latin American countries (especially Argentina and Brazil) and explore the cooperation opportunities among them in the field of intermodal freight transport and logistics.

The project partners have identified two knowledge transfer mechanisms that meet the above objectives:

- **A hierarchical Framework for the know-how transfer and cooperation between EU and LA countries**: The Framework defines the overall organizational structure, the thematic areas for cooperation between the two regions, the research priorities and the communication channels to be used.

- **Roadmaps for the transfer of European best practices to Latin America**: The European best practices have been distinguished in industrial business cases and research innovations. 33 such best practices have been defined and described in previous deliverables of the project. For each best practice a roadmap has been formulated including actions and guidelines on how this practice can be transferred to Latin America.

The above are described in the present report. D3.1 constitutes the final project technical report that summarises and presents the majority of the project experience and knowledge gains. It brings together many of the previous technical efforts and their results, in order to produce the necessary tools (Framework and roadmaps) that will facilitate the knowledge transfer procedure. The knowledge transfer mechanisms are presented as final project products, entailing a solid methodology for their creation built upon previous project activities and a robust validation procedure (conducted in two pilot sites, Argentina and Brazil).

1.2. The ENABLE project

The ENABLE project has been launched with the aim to contribute to the external relations of EU with the Latin American (LA) countries, specifically Argentina and Brazil, by addressing the local LA freight transport and logistics barriers and needs through the development of mechanisms for the transfer of the European know-how in the field of intermodal and co-modal freight transport.
ENABLE addresses the general policy of the EC to strengthen its external relations with other areas. The transferring of the European competence to the LA regions is expected to yield mutual benefits for both sides concerning trade relations, building of business liaisons, promotion of common research activities, and more.

ENABLE has built a comprehensive awareness of the most recent European advances and innovations (best practices) of surface transport research upon the deep understanding of the existing situation in Argentina and Brazil (sound review and analysis of the local and regional freight transport needs, weaknesses, barriers and priorities). Within this framework of analysis, the EU-LA transport corridors were also examined.

ENABLE identified research and business priorities in the field of the LA freight transport and logistics, and proceeded in developing knowledge transfer mechanisms for the targeted countries of Argentina and Brazil. These mechanisms include:

- a hierarchical framework of general guidelines and levels of actions, which aims at establishing an effective communication and cooperation platform for know-how transfer between EU and LA and,
- a series of roadmaps that present specific actions and measures for the actual transfer of each identified European best practice.

Furthermore, ENABLE placed great emphasis on networking actions that could form the solid basis for possible future EU-LA liaisons and could continue similar research cooperation activities. To meet this purpose, a Forum of local LA stakeholders has been established, bringing together all types of stakeholders of the local and regional freight transport community. The organization of four events in LA (two conferences and two workshops) facilitated the understanding of the local situation, the outreach of the ENABLE project aims and methodology, and the formulation of concrete action lines for future business and industrial cooperation.

### 1.3. Structure and content of the report

The report is organized in five (5) chapters. Further to the current introductory chapter, the following ones are provided:

Chapter 2 describes the methodology that enabled the development of the roadmaps for the European know-how transfer to Brazil and Argentina. The description is made both in a more general level and in a more specific one, considering for the latter one the phases of the roadmaps development and validation. The chapter also includes the correlated matrix of LA needs/barriers – European best practices and explains the way this matrix was developed from previous ENABLE Work Packages (WPs).

Chapter 3 presents a hierarchical Framework for the know-how transfer and cooperation between EU and LA countries. The objectives and scope of the Framework are provided and its levels and individual components are described, along with the results of the validation activities (opinions of the stakeholders interviewed) with regards to the Framework.

Chapter 4 deals with the roadmaps and the validation results of the case studies. The opinions and suggestions expressed by the stakeholders during the interviews are
described, concerning, on the one hand, the potential for the transferability of each one of the two validation cases in Argentina and Brazil respectively, and, on the other hand, the organization and level of detail of the roadmaps (addressing all roadmaps). The general remarks of the stakeholders and the overall experience gained by the partners during the validation procedure are also described. An overview of each best practice examined within the roadmap is included.

Finally, chapter 5 concludes the report by providing specific statements and recommendations expressed by the stakeholders that participated in the two project conferences, mainly concerning the transferability of the cases and the future cooperation opportunities between EU-LA. In addition, final concluding remarks concerning the roadmaps activity (production and validation) and recommendations about the future prospects of the possible adoption of the European business cases or research innovations by the LA target countries in the future are provided.
2. METHODOLOGY

2.1. Overall approach

The main drivers (criteria) that accompanied the ENABLE technical work from its very beginning throughout its entire course were the needs, priorities and thresholds identified in the field of intermodal freight transport and logistics in Latin America (LA). The ENABLE research team conducted a robust survey in the LA area, especially in Argentina and Brazil, and managed to report the local freight transport needs, requirements and barriers in a level of both the independent local freight trade of the two countries and the bilateral trade between them. The survey also provided a significant insight to the current level of EU-LA freight transport business and technological cooperation, via the analysis of the transport EU-LA corridors and connections. This exercise went much beyond the typical data collection and analysis, which can be found in the international literature and various reports, in order to uncover specific problems and hindrances that prevent the organization and development of a well structured and effective intermodal freight transport and logistics system. The close communication with the local stakeholders facilitated very much this procedure.

Having the aforementioned valuable input, the project team developed a solid methodology in order to identify the European know-how that could best address the identified LA needs and barriers. Research was conducted among a vast library of European business cases and freight innovations, which concluded in those best practices that were considered most suitable for addressing the LA freight transport business or research requirements. In total, 33 best practices were identified (from which the 17 are related to business cases and the rest 16 to research innovations and emerging ideas) and described using a specific and common template. The main aim was to transform these best practices into roadmaps, which will guide their future implementation to the targeted LA regions.

Making an important step forward in meeting the project's key goal, a hierarchical Framework was produced aiming at guiding the 33 roadmaps transfer. The goal of this Framework is to provide the wider foundation which will facilitate the EU-LA cooperation, including the transfer of the ENABLE roadmaps. More detailed information regarding the Framework and the roadmaps is provided in chapters 3 and 4 respectively.

In order to further specify the actions and measures that are proposed for the know-how transfer within each roadmap, two (2) selected roadmaps were validated, one in Argentina and one in Brazil. The validation procedures included the recognition of the specifications of the roadmaps for modifications, the examination of immediate steps that could be taken for the best practices' transferability and the investigation of local

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1 The findings of the survey were reported in ENABLE’s deliverable D1.1: “Current Status of Freight Transport in Brazil and Argentina, and EU-LA Transport and Business Relations”, September, 2010.
LA stakeholders’ interest in bringing the European best practice to the LA reality (the validation results are presented in chapter 4).

The above approach is depicted in the following Figure 1.

**Figure 1:** Overall methodology of roadmaps production
2.2. Mapping EU know-how against target countries needs and priorities

The analysis of the EU-LA transport relations and the existing situation in the target countries of Argentina and Brazil (WP1) enabled the development of a thorough list of key barriers and obstacles of the countries’ intermodal transport systems that should be addressed in the near future. The list was fed by relevant information and recommendations made from key stakeholders of the LA freight transport that participated in the various project activities (forums, Conference, etc.). The primary list of barriers was filtered through suggestions of the involved stakeholders regarding areas of research and business priorities, where the EU-LA cooperation could foster.

Given this approach, some intermodal transport fields (i.e. air and bulk transport, infrastructure topics that do not regard terminals for mode change and some institutional and regulatory issues) were considered to be out of the stakeholders requirements and, consequently, out of the project’s focus and scope.

Following the state-of-the-art review in European technological developments (WP2), a matrix was created that correlated all selected European best practices with the identified Brazilian and Argentinean key barriers, threshold and needs in the freight transport networks. The table is provided below (barriers out of the project focus were extracted). More information is provided in the project deliverable D2.2.

Table 1: Holistic approach to addressing the key barriers and thresholds of Argentina and Brazil

<table>
<thead>
<tr>
<th>TRANSPORTATION SYSTEM</th>
<th>TYPE OF BARRIER</th>
<th>BRAZIL</th>
<th>BEST PRACTICES &amp; RESEARCH INNOVATIONS (ADDRESSING BRAZIL)</th>
<th>ARGENTINA</th>
<th>BEST PRACTICES &amp; RESEARCH INNOVATIONS (ADDRESSING ARGENTINA)</th>
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<td></td>
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<tr>
<td>Road transport</td>
<td>Operational</td>
<td>Lack of supervision of the limit loads carried by vehicles, which hinder the road structure and reduce the competiveness of companies within the limits.</td>
<td>Need for enforcement of load restrictions on roads. Lack of compliance affects the economics of maintenance and reduces the competiveness of truck operators complying.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|                       | Institutional and Regulatory | Excessive bureaucracy in international transport. | -SMART CM  
- FREIGHTWISE  
- CHINOS  
- e-Freight | Excessive bureaucracy in international transport. Not infrequently, border control of driver’s migratory papers may delay cargo already cleared. | -SMART CM  
- FREIGHTWISE  
- CHINOS  
- e-Freight |
| Rail transport        | Infrastructural | Transposition of rail freight through the São Paulo city could be facilitated by the "ring rail" in São Paulo state. | - Valenciaport PCS  
- RHINE CONTAINER  
- BOXXPRESS | Inherited infrastructure built 80-100 years ago. Coverage is good (density of demand in the south of the | - HUPAC  
- POLZUG |
| Need of warehousing areas and parking coordinated with port operation. | - CHINOS  
- VIT  
- COSMA | country isn’t likely to justify additions. Bringing new branches into service should be carefully assessed to avoid compromising current density of use. |
| Interface with urban areas, where problems, such as intersections with city streets and occupied the tracks of the field, persist and thereby reduce the efficiency of the system. | - BE LOGIC | Rail access to terminals in greater Rosario needs urgent expansion and adaptation. This issue is key for greater use of the entire railroad network. Railway access to Buenos Aires is clogged by the operation of metropolitan passenger services. |
| Bi-oceanic rail corridor needs to be promoted. | - HUPAC  
- POLZUG  
- DB-Schenker  
- KUEHNE&NAGEL  
- SPC | Rail access to the new container port in La Plata, equally inherited, should receive attention. |
| Guidelines for railway expansion in the Midwest. | - HUB Zahony  
- ILK Combiterminal  
- POLZUG | Rail links from Argentina to northern Chile, Eastern Bolivia and Paraguay, in fair and good condition, but underutilized. Rail connection to Brazil dependent on transfer at rail yard at Uruguayana given the different gauges. International rail operations are not usual for rail operators and employees. Inefficiencies in border controls may favor fear to reach this latent cargo market. |
| Rail access to the port of Sepetiba. | - Valenciaport PCS  
- BOXXPRESS | One issue that should receive more attention is the possibility to develop a management system to allow for shared infrastructure use of different cargo operators. |
| Rail network which has different sizes of gauges of the neighboring countries and some national meshes as well. | - HUB Zahony | Operational  
- e-Freight  
- FREIGHTWISE  
- KOMODA  
- BE LOGIC  
- VIT | Intensify use rail to stimulate the rail and road integration. |

**July 2010**
Low use of rail for freight between Brazil and Argentina.

- BILK
- Combiterminal
- HUB Zahony
- VOLVO
- IPC/SPC

One port operator has shown interest in expanding to rail operations. Large mining companies could as well consider becoming operators if legal framework is available.

Access by road and rail networks to ports and inland terminals.

- Valenciaport PCS
- POLZUG
- BOXXPRESS

Reliability and visibility of waterways would require tracking systems for cargo status and position. This is a relevant problem in River Plate’s (Paraná, Paraguay+Upper Paraguay) basin given the extended transit times currently treaded by cargo. Potential bulk cargo from Bolivia, Paraguay and Brazil subject to even higher transit times.

Shipping is not competitive enough with the road system.

- D2D
- SMART CM
- e-Freight
- FREIGHTWISE
- BE LOGIC
- CHINOS

Problems in land access are critical to port operations.

- D2D
- SMART CM
- EURIDICE
- KOMODA

Problems in access routes, such as maintenance and deepening of channels and berths.

- BOXPRESS
- Valenciaport PCS

Problems in access routes, such as maintenance and deepening of channels and berths.

Problems in access routes, such as maintenance and deepening of channels and berths.

- BOXPRESS
- Valenciaport PCS

Problems in access routes.

Studies for economic and environmental feasibility of new port areas.

Lack of storage containers.

- SMART CM
- CHINOS
- VIT
- COSMA

Problems in access routes.

- D2D
- FREIGHTWISE
- KOMODA

Much of the operation in stuffing and stripping of containers is in port, which hinders the operation modes.

- D2D
- SMART CM
- EURIDICE
- KOMODA

Weak coordination procedures for receiving and delivery of container terminals in exports.

- D2D
- FREIGHTWISE
- KOMODA
| Deliverable D3.1: Roadmaps enabling the European know–how transfer to Brazil and Argentina |

<table>
<thead>
<tr>
<th>Institutional and Regulatory</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitated by the unitization of cargo.</td>
<td>Potential for technology applied to customs controls and procedures.</td>
<td></td>
</tr>
<tr>
<td>Little use of inland ports due to difficulties in connection with other modes of transport.</td>
<td>- BE LOGIC - BestLog - CHINOS - COSMA</td>
<td></td>
</tr>
<tr>
<td>Encourage the waterway transport through the Paraguay River to Argentina.</td>
<td>Road congestion around main ports (greater Rosario and Buenos Aires).</td>
<td></td>
</tr>
<tr>
<td>Potential for technology applied to customs controls and procedures.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of clear definition of the model of private participation in port terminals in both the public ports and outside the port area.</td>
<td>- GERMAN TERMINAL POLICY</td>
<td></td>
</tr>
<tr>
<td>Strategic deployment of new ports; no guideline that limits competition and complementarity between existing ports and new ports.</td>
<td>- SKEMA - STORA-ENSO</td>
<td></td>
</tr>
<tr>
<td>Issue of port security concerned to operators of port terminals, especially in relation to additional costs and their impact on competitiveness.</td>
<td>- SMART CM - e-Freight - GIFTS - Parcelcall - M-Trade - EURIDICE - CHINOS - COSMA</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Warehousing and border crossing</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Problems of communication and information flow at ports.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of points of primary and secondary storage nodes.</td>
<td>Size’s restriction of the parking lot of the Cristo Redentor border.</td>
<td></td>
</tr>
<tr>
<td>Lack of adequate operational safety.</td>
<td>Incipient congestion at border posts.</td>
<td></td>
</tr>
<tr>
<td>- D2D - M-Trade - EURIDICE - SMART CM - e-Freight - KOMODA - BE LOGIC - BestLog - CHINOS - COSMA</td>
<td>- INTERFACE</td>
<td></td>
</tr>
<tr>
<td>- D2D - SMART CM - e-Freight - EURIDICE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 2.3. Roadmaps development

#### 2.3.1. Insight to business cases

The project ENABLE roadmaps are based on the ENABLE deliverables D1.1 ("Current status of freight transport in Brazil and Argentina, and EU-LA transport and business relations"), D2.1 ("Best Practices Handbook"), and D2.2 ("Freight Transport Innovations List").

Deliverable 2.1 presents a selection of European industrial innovations and best practices developed in different projects and business cases. The main sources have been the outcomes from the EU project PROMIT, especially the best practices,
benchmarks and presentations in PROMIT workshops and conferences, the European Intermodal Association (EIA) award winning cases, EU projects Viacombi, BestLog, SKEMA, INTERFACE, and other available sources like European Short-sea Network (ESN) and Port of Helsinki.

Best practice is a technique, method, process, activity, incentive or reward that is believed to be more effective at delivering a particular outcome than any other technique, method, process, etc., when applied to a particular condition or circumstance. The idea is that with proper processes, checks and testing, a desired outcome can be delivered with fewer problems and unforeseen complications. Best practices can also be defined as the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proven themselves over time for large numbers of people.

The main objective of the collection and analysis of the European best practices within ENABLE was to organize the information from different sources, to build a sound picture of the main developments in European intermodal transport and to rewrite and adjust it for the situation of the LA target countries. The chosen best practices address and provide solutions to logistics challenges identified in Latin America.

The general approach for developing the best practices has been:

- Benchmarking the European intermodal best practices
- Looking for sustainable concepts, industrial innovations, and intermodal solutions
- Classification and clustering of the best practices
- Review of innovations and ideas
- Analyzing the organization of innovation process and business models of services
- Transferability to other situations or framework conditions.

The current intermodal status in LA has guided the selection of best practices that are further divided into five categories according to the type of the case (see Table 2 below). Brief description of the main sources utilized is provided after the table.

<table>
<thead>
<tr>
<th>Best Practice category</th>
<th>Best Practice</th>
<th>Main Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Cases</td>
<td>Volvo</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>StoraEnso</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>Coca Cola</td>
<td>PROMIT</td>
</tr>
<tr>
<td>Logistics Service Cases</td>
<td>DB-Schenker</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>Kuehne&amp;Nagel</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>Cargo Domino</td>
<td>PROMIT</td>
</tr>
<tr>
<td>Operator Cases</td>
<td>Hupac</td>
<td>PROMIT</td>
</tr>
</tbody>
</table>

Table 2: ENABLE Best Practices – Business cases

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### Best Practice category

<table>
<thead>
<tr>
<th>Best Practice category</th>
<th>Best Practice</th>
<th>Main Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rhinecontainer</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>BoxXpress Germany</td>
<td>VIACOMBI</td>
</tr>
<tr>
<td></td>
<td>Polzug</td>
<td>VIACOMBI</td>
</tr>
<tr>
<td></td>
<td>Construrail</td>
<td>VIACOMBI</td>
</tr>
<tr>
<td></td>
<td>Corman</td>
<td>VIACOMBI</td>
</tr>
<tr>
<td></td>
<td>HUB Zahony</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>BILK Combiterminal</td>
<td>PROMIT</td>
</tr>
<tr>
<td>Information Technology Cases</td>
<td>Port Infolink (Port Base)</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>Short Sea XML</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>Valenciaport IT Platform</td>
<td>BESTLOG</td>
</tr>
<tr>
<td>Policy Strategies</td>
<td>German terminal policy</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>Swiss case</td>
<td>PROMIT</td>
</tr>
<tr>
<td></td>
<td>EU Maritime Knowledge Platform</td>
<td>SKEMA</td>
</tr>
<tr>
<td></td>
<td>IPC/SPC Intermodal/Short Sea Shipping Promotion Centre</td>
<td>European Shortsea Network</td>
</tr>
<tr>
<td></td>
<td>Railway border interoperability (INTERFACE)</td>
<td>INTERFACE</td>
</tr>
<tr>
<td></td>
<td>Case Port of Helsinki / Vuosaari Harbour, Finland</td>
<td>Port of Helsinki</td>
</tr>
</tbody>
</table>

Most input has been gained from the project PROMIT, as the information has the best coverage of different intermodal aspects and also the best quality of the material. **PROMIT** was a European Coordination Action (CA) for intermodal freight transport initiating, facilitating and supporting the coordination and cooperation of national and European initiatives, projects, promotion centres, technology providers, research institutes and user groups related to this most complex transport form. **PROMIT**'s strategic objective was to contribute to a faster improvement and implementation of intermodal transport technologies and procedures and to help in the promotion of intermodal logistics and modal shift by creating awareness on innovations, best practices and intermodal transport opportunities for potential users as well as for politicians and for the research community. **PROMIT** Coordination Action lasted for three years, during which, three Intermodal Innovation Day Conferences and nine cluster workshops and seminars were organized in addition to the dissemination via brochures, newsletters and an Internet homepage. Main outputs produced within **ENABLE** included deliverables D3.1 (“Best Practice year 1”), D3.2 (“Best Practice year 1 and 2”), D3.3 (“Consolidated Best Practice Handbook”), D4.1 (“European benchmarks in intermodal transport”), D5.2, and D5.3 (“PROMIT Consolidated recommendations on strategies and further activities”), which are available at [http://www.promit-project.net/](http://www.promit-project.net/)
**VIACOMBI** was an EU funded project that presented user friendly intermodal services for door-to-door shipments, providing a tool to assess environmental performances of the different transport solutions and a selection of Best Practices easy to transfer. In addition, the project developed intermodal transport training modules. Through the collection of the best practices and the categorization of the cases between those concerning the services of transport (collected from the operator’s point of view), and those concerning the transport chain (collected from the shipper’s or forwarders’ – the decision makers – point of view), the project introduced 33 Best Practices. Nine of these were collected from transport operators’ point of view and 24 from shippers/manufacturers/forwarders point of view. The most important output of the Viacombi project employed in ENABLE were the EIA’s “Intermodal Freight Transport & Logistics Best Practices” (available at [http://www.eia-ngo.com/viacombi.html](http://www.eia-ngo.com/viacombi.html)), Viacombi “Best Practice Guide” and “Best Practices descriptions” (available at [http://www.viacombi.eu/en/](http://www.viacombi.eu/en/)).

Project **BESTLOG**, the European Platform for Supply Chain Management Best Practice, is the European Platform for Good Logistics Practice. Since the official end of the BESTLOG project in May 2010, BESTLOG is run by the European Logistics Association through **ELAbestlog**. More information is available at the website [http://www.bestlog.org/](http://www.bestlog.org/).

Chosen cases allow together to build a picture over the main development lines of intermodal corridors in LA. All the parties presented above (companies, operators, LSPs, IT providers and policy makers) are essential stakeholders for building up a well-functioning logistics network.

### 2.3.2. Insight to research innovations

The ENABLE deliverable D2.2 “Freight Transport Innovations List” (available at [http://www.enable-project.net/Outcomes/](http://www.enable-project.net/Outcomes/)) documents the description of 16 European best practices, which are clustered into seven thematic areas (presented in the following table along with sources of their information collection).

**Table 3: ENABLE Best Practices – Research innovations**

<table>
<thead>
<tr>
<th>Thematic area</th>
<th>Source case (EU project acronym)</th>
<th>Main source</th>
</tr>
</thead>
</table>
| Long door-to-door transport chains | D2D                               | • Official project website  
• Relative official web-links containing information about research projects in the field of transport (“Transport Knowledge Centre” and “IST World”) |
| SMART-CM                           |                                   | • Official project website                                                                                                                  |
| e-Freight                          |                                   | • Official project website                                                                                                                  |
| Intelligent technologies           | EURIDICE                          | • Official project website                                                                                                                  |
| GIFTS                              |                                   | • Official project website  
• PROMIT project                                                                                                                             |
The European Commission has supported a vast number of research activities through its 4th, 5th, 6th and 7th Framework Programmes. A significant effort has been required to identify those completed and ongoing research activities that could best address the problems of freight transport in Argentina and Brazil. Once the identification has been made and each research project concisely presented (according to the main information sources presented in Table 3), the project partners initiated the process of the roadmaps’ development.

The research activity that concluded in the development of a roadmap for each one of the identified European freight transport innovation included:

- **The collection of background information:** For this purpose, the official websites of the research projects were, mostly, exploited. Available project deliverables, newsletters, brochures, publications in various scientific events, presentations of the project’s results, of exploitation opportunities, etc. were thoroughly reviewed and examined on the basis of identifying and addressing all possible transferability issues. In case an official project website was not available, the background information was searched in official EU web-pages (i.e. "Community Research and Development Information Service", [http://cordis.europa.eu/](http://cordis.europa.eu/)) or other relative official web-links containing information about research projects in
the field of transport (i.e. Transport Knowledge Center, http://www.transport-research.info/web/, IST World, http://www.ist-world.org/default.aspx, etc.). Information within the ENABLE deliverable D2.2. (“Freight transport innovations list”) was also fully exploited (including information provided by the PROMIT project, as this described in the previous section).

- The organization of the collected information according to the roadmap outline (described in following section 2.3.3): Research data were critically examined regarding their accuracy, the degree of their update and, of course, their relevance to the topic in question: concrete measures and actions in order to transfer the European knowledge to the Latin American areas of interest.

2.3.3. Template for description
The template used for the description of the roadmaps is provided below:

<table>
<thead>
<tr>
<th>Acronyms and Terms used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Fact Box for the best practice’s description</strong></td>
</tr>
<tr>
<td>The section provides a brief description of the examined best practice. Input information was provided primarily from ENABLE deliverables D2.1 and D2.2. Nonetheless, information was updated according to the aforementioned research activity of the roadmaps development. The analysis in this chapter is provided in terms of:</td>
</tr>
<tr>
<td>• Project’s brief description</td>
</tr>
<tr>
<td>• Aims</td>
</tr>
<tr>
<td>• Main results and achievements</td>
</tr>
<tr>
<td>• Major innovations</td>
</tr>
<tr>
<td>• Benefits and key success factors</td>
</tr>
<tr>
<td><strong>2. Stakeholders to be involved</strong></td>
</tr>
<tr>
<td>In this section, the stakeholders involved in the transfer of the European best practice to the LA targeted areas are identified and their roles are described. A clustering has been applied regarding the level and role of participation of each stakeholder (mandatory, secondary, potentially additional), while distinction was made between the stakeholders who will transfer the know-how (European) and those who will be summoned to adopt it (LA).</td>
</tr>
<tr>
<td><strong>3. Preconditions</strong></td>
</tr>
<tr>
<td>The chapter provides a description of the issues that should be applied as a precondition for the successful transfer of the European best practices to the LA regions. Preconditions rest, for example, not only in examining the feasibility (financial and technical) of implementing a project in the LA region, but also in ensuring the stakeholders commitment and strong participation.</td>
</tr>
</tbody>
</table>
4. **Operational and Organizational Actions and Measures to be Applied**

4.1. *Operational actions and measures*

The section provides a closer look to specific actions and measures, in an operational level, that could clearly guide the involved stakeholders and authorities to a successful transfer and adaptation of the European know-how to the targeted areas. Each best practice has been approached in terms of its operational systems and technical components and the way these could be successfully implemented in a LA freight transport network.

4.2. *Organizational actions and measures*

Steps and recommendations for building a strong business/project organizational scheme are provided within this section. The applied European situation is described, examined and used as a reference point (in many cases as a strong key success factor) for the LA stakeholders who wish to form liaisons with the purpose of implementing the best practice. Financial and investment issues are also approached.

5. **Strategies and Policies to be implemented**

Strategies and policies are examined in two (2) levels:

5.1. *Local and national level*

5.2. *Regional and international level*

The chapter refers to policy measures that should be taken in order to promote and support the proposed European case to a local LA or/and a pan – Latin American level. Identifying strategies and policies was a rather difficult task, since it involved actions in a high level of project planning and in most cases required information that remained confidential. In order to efficiently tackle this difficulty, the following table (Table 4) has been created, which identifies and describes general strategies and policies that could be applied in the field of freight transport, in order to promote sustainability, environmental friendly freight transport solutions and a more balanced freight transport matrix. The proposed actions include the following fields:

i. Taxation  
ii. Legislation  
iii. Investments  
iv. Funding and PPPs  
v. Environment  
vi. Security and Safety  
vii. Infrastructure  
viii. Employment and working conditions  
ix. Land use  
x. Liaisons building

Table 4 provided a guideline for building specific strategies and policies for each best practice. The general strategies and policies were the basis for forming specific strategic actions and measures, according to each best practice's requirements and special characteristics. Of course, further actions to the ones presented in the table were also identified and examined.
### Table 4: General strategies and policies

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taxation</strong></td>
<td>Taxation policies refer to the governmental approach on the imposition of direct or indirect taxes. In the transport sector, taxes are imposed to consumers for the consumption or purchase of transport services and commodities. Taxes like these include tariffs, tolls, duties (usually applied as ad valorem tax) environmental taxes (i.e. carbon tax), value added taxes (VAT's) and more. Transport generates a significant amount of revenues for public budgets. Taxation in transport usually relates to the right of access or use of specific infrastructure, and can be an important mean of influencing the travel demand, thus enabling the achievement of transport policies, such as environmental sustainability or economic efficiency. Taxation policies that support trade efficiency have been applied from the Brazilian government (see deliverable D1.1). These policies included tax and tariff exemptions for equipment and material imported for the production of goods for export, excise and sales tax exemptions on exported goods, excise tax rebates on materials used in manufacturing export products, etc. Nonetheless, existing barriers, in both Brazil and Argentina, require further harmonization and reformulation of taxation and charging policy. This is necessary for the support of the national competitiveness in the international transport market, especially in the case of intermodal transport, where competition between the private players proves quite fierce.</td>
</tr>
<tr>
<td><strong>Legislation</strong></td>
<td>Legislation and agreements concerning the institutional framework of transport are the results of policies and strategies at various levels: LA, national, sub-national, local, etc. General strategic measures for the achievement of a stable and fare regulatory environment for traders and investors involve the establishment of a common legal framework for intermodal transport procedures, which will also incorporate other related issues, such as environmental and social regulations. The framework must guarantee the liberalization of the market access and, at the same time, ensure fair competition and diminish possible situations of privilege. The issue of healthy competitiveness becomes of great importance especially after privatization of a transport system, where the public monopole passes to the private sector, without, though, a respective passage of the gains to the system's final users. At the same time, the regulatory framework must ensure that competition does not sacrifice safety and security requirements, working standards and the rights of customers. It is, also, of great importance that any legal, institutional or</td>
</tr>
</tbody>
</table>
3. Investments

Investments in transport infrastructure (road, rail, ports, airports), in installed equipment, as well as in research innovation in the field of transport, are necessary for the expansion and maintenance of the transport networks. Investments in transport infrastructure are mainly financed with public funds (fixed costs plus maintenance), but also by the private sector, depending on the type of investment.

The steps towards the implementation of a sound investment plan include, among others, the identification and examination of all the factors that influence the setting of transport strategic investment priorities, such as the cost-effectiveness of the investment, the availability of other sources or funding, etc. Also, the identification of all the associated risks is of high importance.

The need for enlargement of investments in the LA transport infrastructure arose as a major challenge for the LA countries in order to promote a balanced transport matrix and avoid congestions to existing infrastructures. A key strategic measure towards this goal would be the creation of European opportunities for investments in the LA areas. Indubitably, a cost-effectiveness study must stand at the core of any investment programme, especially when resources are limited (the current economic crisis has put public investments under pressure).

Other identified issues concerning investments in Brazil and Argentina indicatively involve dredging issues, as well as non institutionalized model for public investments in ports due to legislation that generates market dissatisfaction. Clear definition of how the dredging contracts should be treated, along with a robust legal reformation/adaptation to meet the above needs, could be promoted.

4. Funding and PPPs

Public-private partnerships (PPPs) help create an optimal combination of public and private funding along with private expertise. In the last years, PPPs were strongly introduced in the area of transport so as to increase the involvement of the private sector in the provision of public services. For the transport infrastructure PPPs generally refer to concession of Build-Operate-Transfer (BOT) contracts. There is a very wide range of funding techniques, and each basic technique has normally several variants, e.g. BOT has the following variants:

- Build-Own-Operate-Transfer (BOOT),
- Build-Own-Operate (BOO),
- Build-Own-Operate-Subsidise-Transfer (BOOST) and
- Build-Lease-Transfer (BLT).

Funding techniques range between public funding and wholly private funding techniques. Funding techniques can be categorized as:

- Special funds financed with the revenue from specific taxes.

A regulatory issue that adds uncertainty to the investments policies is dealt to a high level of strategic measures.
- Semi-public companies or state-controlled public bodies using private capital.
- Entirely built and financed by private sector but operated by a public body.
- Public and private capital is to set up entities that are legally independent of the state authorities having an own corporate status.
- Built and operated by a private company, but the owner is public and funding is private.

A well structured PPP scheme ensures a balance of risks and responsibilities between the public and private sector. The partial or full transfer of the risks associated with public services to the private sector should be done depending on the ability of the private sector to deal with those risks. PPPs should arise as a possible method of financing investments only when there is a significant scope for involving the private sector. In that case, the suitability of a project for applying a PPP scheme must be thoroughly examined in advance.

Various problems regarding PPPs schemes may need to be regulatory tackled. In Brazil, for example, the current institutional framework keeps the private sector in an uncertain area for investments. A solid regulatory framework could be developed, which would stabilize the presence of the private sector in the field of transport. Innovative regulatory/contractual frameworks and financial structures/procedures should also be promoted in order to ensure value for money for society (contradiction between public socio-economic and private financial objectives is an inherent issue of PPPs).

Furthermore, as PPPs are mainly sourced by banks, it must be examined whether the fallout from the banking crisis might reduce or not the ability of the willingness of banks to lend money for such projects.

### 5. Environment

Though the transport sector has major benefits for the economy, its adverse impact on the environment is today an indisputable fact. Within the EU, transport is one of the greatest emitters of greenhouse gases, especially carbon dioxide (CO2), while its impacts on land use, natural habitats and human environment arise major debates about how transport policies could become more environmentally sustainable. Some general aspects regarding the shift of the transport strategies and policies to more environmental friendly directions involve:

- The promotion of environmental friendly technology (cleaner fuels, cleaner vehicles, etc). In that case, the necessary framework conditions to introduce the promising new technologies to the market should be developed by the policy makers. Special attention should be paid in order for this framework not to give advantages to any specific technology. This can be achieved through the development of open standards,
<table>
<thead>
<tr>
<th>Deliverable D3.1: Roadmaps enabling the European know-how transfer to Brazil and Argentina</th>
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<td>6. Security &amp; Safety</td>
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<td>7. Infrastructure</td>
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<td>Deliverable D3.1: Roadmaps enabling the European know–how transfer to Brazil and Argentina</td>
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<tr>
<td><strong>8. Employment and working conditions</strong></td>
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<tr>
<td>Major transport investments and reformations influence the employment situation. Technological developments, like Intelligent Transport Systems (ITS), are likely to have negative and positive employment effects. They will require more highly skilled workers, but will have negative employment effects as rationalisation technologies. They will also require discussions on new forms of work organisation. Employee's reluctance to concessions and major PPPs are a common situation in many countries. Labour unions trying to secure labour rights and usually take an offensive policy to such big projects prohibiting major investments.</td>
</tr>
<tr>
<td><strong>9. Land use</strong></td>
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</table>
| It is recognized nowadays that proper transport planning demands effective land planning and management, rather than a strictly sectorial approach. Sectorial transport policies need to be coherent both with the respective land use policies. Furthermore, the various inter-sectorial transport policies should be integrated in a solid framework of a common transport policy. This integration of policies is necessary in order to reduce the need for travel, while maintaining the access to transport services and to improve accessibility with a wider range of transport modes.

Different policy “packages”, incorporating various interrelated policy measures, can be applied according to the areas’ specific urban characteristics. These packages could include, for example, measures for intensifying the density of housing and other activities near urban rail, light rail, subway, etc., or measures for car restrictions within the urban area. In any case, coordination between authorities, as well as commitment of private actors and citizens are key element for the policy implementation. |
| **10. Liaisons building** |
| All the aforementioned aspects of strategies and policies imply the need, intensively or not, for strong cooperation strategies at various levels of actions and between various involved actors. Robust liaison strategies prove essential from the beginning of a given cooperation and sometimes are a prerequisite in order for the initial actions to launch into reality. 

Cooperation strategies do not apply solely for bringing the interested parties together and securing their commitment. They also relish an important role for bringing together policies and integrating them into a common framework (rather than merely coordinating them). Especially when transport is concerned, during the last two decades there has been a significant trend towards new forms of integration of policies (transport, environment, land use, etc.) (Geerlings H., 2003). This need has arisen from the sustainable approach in policy making, which no longer accepts |
segmented policy actions, but comprehensive, integrated policy plans in all related aspects of transport. In this context, strong liaison actions that will ensure consensus building are a key determinant for the success of a given policy or project.

6. Expected Benefits

The expected benefits were examined and presented in relevance to the barriers and needs of the Argentinean and Brazilian freight transport sector, as these identified through the previous project’s technical work.

7. Indicative Timeplan

An indicative timeplan was provided for each best practice, relating to short-, medium- and long-term actions. This approach was followed in the majority of the roadmaps, since no other relevant information was available.

Reference List

2.3.4. Special considerations

The special cases of Kuehne & Nagel and Deutsche Bahn Schenker

K&N and DB Schenker are two of the world’s leading companies in transport and logistics, both served by an extended network of worldwide offices and distribution facilities. K&N has already established its offices in 17 countries of South and Central America (Argentina and Brazil included), while DB Schenker’s locations are spread in 8 countries of South America (Argentina and Brazil also included).

The cases of K&N and DB Schenker provide an excellent example of dynamic business models with global vision. Their strong presence in the area of Latin America indicated the need for a new approach regarding the ENABLE roadmaps’ development. Accepting as a fact that the transfer of the European know-how has been already accomplished in most of the LA countries, the produced roadmaps of these two cases focused merely on their key success factors. For this purpose, a new roadmap template has been created with the following thematic areas:

1. Fact Box for the best practice’s Description
2. Stakeholders involved
3. Existing network and services
4. Factors contributing to transferability
5. Strategies and policies implemented
The special case of e-Freight

The e-Freight Integrated Project (European e-Freight capabilities for Co-modal transport) started on the 1st of January 2010, with a duration of four years, addressing the development, validation and demonstration of innovative e-Freight capabilities, in order to support transport users, transport service providers, transport infrastructure providers and transport regulators.

The project now runs its 2nd year of implementation and remains in a rather initial stage of deliverables’ production (public releases are currently not available). Approaching the project from the roadmaps-for-transfer point of view has not been possible, since the project results are not available. However, the ENABLE European partners decided to include this project in the EU innovations that will be transferred to LA due to its pioneering idea and its strong technological innovative character.

A description of the project was provided in ENABLE’s deliverable D2.2, according to the information currently available. Nonetheless, it hasn’t been possible to produce a roadmap for the project case, as the development of the roadmap demands a minimum set of project information, which hasn’t been released yet. The issue of the project’s transferability to the LA countries could be dealt with after the project’s closure, when its reports will be finalized and the relevant information published.

The special case of BoxXpress

The case presents similar characteristics with the pilot case of Polzug, regarding the field and area of application, the technological elements, the institutional and regulatory restrictions, etc. A combination of the two roadmaps in a common roadmap was, therefore, possible.

2.4. Roadmaps validation

2.4.1. Aim and content of the validation

The roadmaps developed within the project's technical activities provide concrete actions and measures that need to be taken in a multitude of levels (technical, operational and strategic) in order for an LA target area to adopt the recommended European best practices. The term "area" can possibly refer to intermodal freight interfaces, corridors or even networks, but also to specific organizations, bodies or businesses acting in the field of intermodal freight transport and logistics. The primary target group, however, is industry.

The activity of developing a concrete roadmap for each best practice was done, primarily, in a rather abstract level in terms of identifying the exact collaborative schemes and applying the adequate technological and institutional elements necessary for the best practice’s implementation. Generally, it was recognized that most of the best practices present a variety of possible services, which is automatically translated to a variety of involved stakeholders and technical solutions. Even in those cases (usually business-related), where the proposed technical solutions and components were more
"granted", a closer approach of the involved stakeholders remained unreached; the realization of most of these cases in an LA region demands a strong commitment of the freight transport business industry and an active participation of key players, who will be summoned to take over, among other things, leadership and coordination of all necessary actions. The identification and commitment of these players (key or not) demand a detailed action plan that will include actions of strategic importance and, also, a great knowledge of the market needs and norms, which is, of course, a time and cost demanding activity.

In order to lead the generic approach of the roadmaps to more specific actions, a validation procedure was proposed within the activities of the ENABLE project. The validation took place in two case studies, one in Argentina and one in Brazil. Two roadmaps were selected for further elaboration: the roadmap of the Polzug business case has been selected for validation in the Argentinean pilot site, while the roadmap of the Short Sea XML business case respectively for the Brazilian pilot site (more details are provided in chapter 4). These two cases were selected by the two LA partners participating in the project, i.e., UBA and RFF respectively, from the total list of the 17 business cases. The research innovations were left out of the selection process, since the focus was entirely placed on transferring European business and industrial applications to LA. The key criteria used for this selection were the local needs and priorities of each country (these are thoroughly described in 4.2.1.1 and 4.2.2.1). The two case studies examined the specifications of the roadmaps for potential modifications and the immediate steps needed for the implementation of the appropriate European best practices, as these expressed by local stakeholders.

The validation procedure was conducted through interviews with stakeholders that had already been identified within the draft roadmaps. The interviewees were asked to state their opinion regarding both the methodological approach followed within each roadmap, as well as the actual content of the roadmap, in terms of applicability, feasibility and effectiveness of the proposed actions and measures. Suggestions for improvements were also made, which, along with the reported opinions, led to a re-framing of the roadmaps’ methodology and a correlation of the proposed actions and measures with the real business environment. The same procedure has been applied for the validation of the hierarchical Framework for knowledge transfer.

The proposed improvements were not only applied in the two pilot roadmaps that represented the case studies in Argentina and Brazil respectively, but they were also used for consolidating the rest of the roadmaps. Suggestions regarding the roadmaps methodological framework were fully incorporated to all roadmaps, thus providing a solid methodology for knowledge transfer. Nonetheless, the consolidation of the suggestions relating to the content of the pilot roadmaps to all the roadmaps developed within ENABLE has not been an easy task, given the differences between the roadmaps, which are, of course, a result of the different best practices examined within each one of them. In order to facilitate the wide usage of the interviews results, the validation procedure was not oriented only to specific characteristics (technical, organizational, regulatory, etc.) of the pilot best practices, but it also addressed common action frameworks that can be applied to all roadmaps.

The stakeholders that participated in the validation process (interviews) were already informed about ENABLE and its activities in previous events that took place in both Argentina and Brazil. Therefore, the validation directly enabled a second degree of communication with stakeholders of the local intermodal freight transport and ensured
their more active involvement. This was very important, not only for the dissemination of the project itself, but also for the actual launching of the LA-EU cooperation, since, as already mentioned, the transferability of most of the European best practices strongly depends on the commitment of the target stakeholders, even from the very beginning of the transfer procedures. Of course, the actual implementation of a best practice in a given LA area falls far beyond the actions of the ENABLE project. Nonetheless, the same does not apply for the establishment of EU-LA cooperation paths (even in a premature level), which, in future, could be translated to strong liaisons and business synergies.

Generally, it could be said that the validation was extremely crucial, in order to match the methodology and contents of both the roadmaps and the framework to the real business requirements and conditions.

### 2.4.2. Overall procedure

The following steps have been considered for the validation of the roadmaps and the Framework for the European knowledge transfer to the LA target areas (Figure 2).

1. Full comprehension of the “validation subjects” (i.e. best practices that are examined within the selected roadmaps and Framework for knowledge transfer) - Technical visits.
2. Selection of stakeholders to be interviewed.
3. Interviews conducted in three (3) phases:
   a. Introductive interview for the briefing of the interviewees over ENABLE roadmaps/framework and their scope.
   b. Execution of the interviews.
   c. Possible clarifications.
4. Analysis of the case studies results.
2.4.2.1. Full comprehension of the “validation subjects”

The ENABLE validation procedure could only take place if the “subjects” that were going to be validated were fully explained and comprehended in terms of their functionalities, objectives, components, outcomes, etc. This was achieved with the strong internal cooperation between the project partners, with regard to the outcomes of the WP2 “State-of-the-art review in European technological developments” and the technical actions within the WP3 “Development of research roadmaps”. The outcomes of WP2 (the best practices are examined in detail within the WP2's deliverables D2.1 “Best
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Practices Handbook” and D2.2 “Freight Transport Innovations List”) provided, among others, valuable input for the validation procedure.

Besides securing the flawless information and knowledge exchange among the project’s partners, thus succeeding the necessary interrelations of the project’s WPs, technical visits to the European premises of the organizations that have applied the selected best practices also took place. These technical visits were made by the Latin American project partners, enabling a direct view of the best practices and their components (technological, administrative, regulatory, etc.) and provided a valuable contact with the European stakeholders that have already implemented the best practice. More information over these visits is provided in sections 4.2.1.3 and 4.2.2.3.

2.4.2.2. Selection of stakeholders to be interviewed

After the roadmaps for validation were selected, the involved stakeholders were specifically identified. These included the Latin American stakeholders that were actually involved in the validation procedure. The identity of the latter ones, of course, depended on the specific best practice that was validated. The criteria for selecting the interviewees lied on the need for succeeding a wide coverage concerning the suggestions made for the various components of the roadmap (operational, organizational and strategic). Stakeholders from different fields of responsibilities and various levels of chain command were selected, in order to meet the aforementioned need.

The Argentinean pilot site

Institutions or industry companies that could fill in the role described as “Stakeholder” were selected right after the business case of Polzug was selected as the pilot case in Argentina. A preliminary consideration of the practice immediately resulted in going after a rail operator first, as the component that, in Argentina, should champion the transferability, at least in the operations side. This operator manages a network with access to two of the port terminals considered in D3.1. When asked, they suggested further industry representatives to be sought after in the Bahía Blanca area. Thus, the institutions selected belong to a same potential service and, therefore, all individuals interviewed provided their opinions on the base of the same potential service.

<table>
<thead>
<tr>
<th>Profile of stakeholder representative</th>
<th>Institution</th>
<th>Issues or areas of emphasis during interview and questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Commercial manager</td>
<td>Railway operator</td>
<td>Explain project. Decide which of the two ports being served by their network should be taken in reference</td>
</tr>
<tr>
<td>2 Operations manager - Senior</td>
<td>Railway operator</td>
<td>Investment policy on infrastructure</td>
</tr>
<tr>
<td>3 Operations manager</td>
<td>Railway operator</td>
<td>Current limitations in running a regular container service</td>
</tr>
</tbody>
</table>
### The Brazilian pilot site

The roadmaps were presented to nine (9) associations of traders and companies in Brazil, seven (7) of which filled in partly or completely the questionnaire. These were:

1. Brazilian Union of Shipping Firms – Syndarma;
2. National Shipping Center – Centronave;
3. Lachmann Group;
4. Brazilian Association of Trading Companies;
5. Brazilian Association of Port Terminals;
6. Petrobras Distribution; and

Besides the aforementioned associations, the Special Secretariat of Ports/ Republic Presidency and the Brazilian Association of Container Terminals for Public Use also analyzed the roadmaps, although at a more general level.

### 2.4.2.3. Interviews

The procedure of the interviews was the core activity of the roadmaps’ validation. Seven (7) interviews were held in the Brazilian site and seven (7) interviews respectively in the Argentinean site, with the use of the questionnaire provided in Annex B of the current document. The process of the interviews included three specific phases:

1. **Presentation to the interviewees.** The ENABLE project, the selected roadmap and the Hierarchical Framework were presented in a comprehensive way to the interviewed stakeholders. The presentation provided the interviewee with all the information he/she needed in order to fully comprehend the subject of the interview and his/her role within the whole procedure.
2. **Execution of the interviews.** This phase regarded the filling in of the questionnaire.
3. **Possible clarifications – phase of roadmaps’ and Framework’s completion.**

### The Argentinean experience

Introducing the roadmaps took more than one phone call and personal conversation with the relevant stakeholders. Moreover, introducing ENABLE itself as a research project was difficult. This is partly due to the fact that Argentinean academia is yet to set...
foot on operations research or logistics topics for that matter. Furthermore, the idea of identifying best practices relevant to the country’s context also demanded more than the expected clarifications. It was explained to the stakeholders several times that a number of best practices could indeed be related to existing cargo segments and geographical markets in Argentina. At this point, a pre-selection of transferrable practices came in handy. The notion of best practice had to be explained in terms of Argentinean examples. At the same time, this removed the interviewees’ impression that the base scenario may not be yet mature, even for the transfer of low-complexity institutional and operational schemes.

The roadmap was provided via e-mail right after a phone conversation with the stakeholder, and in advance to a personal interview. Either as a consequence of insufficient proficiency in English or lack of time, when the time came for a personal interview, the “to be” stakeholder representatives declared only to have taken a broad look at the roadmap. In one case a first-interview, which had been postponed by the individual contacted, was consumed in further explanation of the project and the role requested from the stakeholder. The term “stakeholder” itself did not get one collaborating industry player enthusiastic, one with adequate knowledge of English to know the term, and find it inappropriate. For the others, the lack of an equivalent word in Spanish was solved branding their role as industry players providing their point of view. This was highly instrumental in transmitting to the interviewees that the validation was about their expertise being sought after. Bottom line: after a first distant reaction to the term stakeholder, it was decided that industry contacts would not be labelled.

In another case, a high ranking individual accepted the request for an interview. On top of being a high level position, the appointment was set on a very short notice. This one shot opportunity was not to be wasted and the most was to be made out of the little time granted. Given previous results, it was decided that the roadmap would not be used as a communication tool, or the questionnaire for that matter. The interview was productive and the topics mentioned came from the individual’s own expertise and extensive knowledge on both operations and the market. It would have been inappropriate to guide a long time expert on how to consider introducing a change. Once he felt comfortable with the nature of the project and the type of information being demanded, the interviewee was asked whether an institutional look at the roadmap and questionnaire would be possible. However this meant a person who was not interviewed filled in the questionnaire, lacking some context data and precise understanding of the validation concept.

This brings about the importance of knowing the right questions to ask, avoiding any delicate issues regarding the interviewee. Indeed, large investments and management issues are of an intrinsic policy and political nature. It took more than one question for interviewees to understand the academic nature of the project and to relax to the extent the validation allowed for. Some reluctance came also from validation results becoming part of a public dissemination event where statements made, institutional or not, would be a central focus of attention.

Once the minimum necessary level of trust was obtained, it became necessary to explain what the validation was aimed at. No matter how clear the explanation, all individuals would ask whether it was meant as a market study, subsequently insisting on, whether it would become part of a market study afterwards. In all cases, this point was reached after more or less thirty minutes of dialog. This persistent pattern did not favour the
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The structure of the roadmap had to be explained. Then, while going through the questionnaire, all interviewees had a hard time connecting the proposed transfer of Polzug with the structure of the roadmap. It was necessary to move on to local expressions of those elements and topics listed in the roadmap. This was done mostly by the cooperating individual, but it increased the effort and the time to finish.

One of the interviewees expressed discomfort on the nature of the questionnaire, pointing out that rather than industry players considering an already built roadmap, their raw point of view should be requested. In particular, this same individual disliked the yes/no/anything-else closed answers possible. The interviewer confirmed with this explicit remark what was felt in the air in previous interviews: collaborators noticed they were being asked their opinion to a precisely limited extent and structure. Out of courtesy, they refrained from expressing their opinion on using a questionnaire, but would be much less participating in the dialogue when the interview would progress into the roadmap and the questionnaire. The need for the interviewer to clarify questions from one another several times was a signal that the level of attention had dropped significantly. It should be noted that all interviewees were highly skilled, world-class professionals. The interviewer also considers that the need for clarification cannot be attributed to question’s content being of an above average level of complexity.

One guest suggested the questionnaire is circular, requiring opinion on the questionnaire itself. Another noted that the questionnaire seemed rather oriented at the way the best practice had been assessed in the roadmap according to a certain structure, leaving on a second level the best practice itself or its transfer.

The Brazilian experience

In order to ensure the active participation of the selected stakeholders in the validation procedure, the Latin American ENABLE project partners from Brazil activated those proper contacts that ensured that the stakeholders clearly understood primarily the objectives of the project itself and, secondly, the concept of the roadmaps and the Framework, and the purpose of their validation.

The presentation of the roadmaps to the interviewees and further application of the validation questionnaire was an activity of the ENABLE project that required more time than expected. This happened due to two reasons: firstly, because the 32 roadmaps that were developed within the project activities were based on European realities of operation quite different from those found in the Brazilian market. Secondly, after choosing, approaching and ensuring the participation of stakeholders from the freight transport sector in the roadmap validation procedure, three (3) out of the 32 roadmaps were selected for further investigation in regards to their transferability in Brazil (see also section 4.2.2.1) However, when analyzing them further, institutional difficulties for their implementation were found, which led in, finally choosing that roadmap in which the content was more related to the operators.

The application of the validation questionnaire was a time-consuming procedure, due to the questionnaire’s length, and due to the fact that it required a careful analysis of the roadmap and the Framework presented. The interviewees found the questionnaire long and not very efficient in identifying the needs of intermediate steps necessary for the validation. Thus, since the respondents were, mostly, top executives involved in the transport operation, the time required for each questionnaire exceeded the time of one
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or even two visit schedules. Overall, the questionnaire was considered rather academic, i.e., not very thorough in the practical issues and very detailed in the evaluation of the structure and composition of the text. So, the process of applying the questionnaire turned out to be a time consuming activity. For this reason, the detailed presentation of the roadmap and a directed conversation, from the detailed analysis of two or three types of operators, were more effective in order to gather the views of the other operators about the several issues addressed in the questionnaire.

2.4.2.4. Analysis of the case studies results

The input from the interviews was thoroughly analysed in order for the roadmap and the Framework validation procedure to be corrected and completed. The analysis focused on the corrections and suggestions made by the interviewees on both the Framework and the roadmap. Furthermore, it mapped the stakeholders’ opinion regarding the possibility of the actual implementation of the roadmaps in a LA region, as well as their interest to adopt such solutions. The aim was to directly fill the technical gaps of the roadmap and the Framework, and to specify the immediate and even more specific steps needed for the implementation of the European best practices.
3. **A HIERARCHICAL FRAMEWORK FOR THE KNOW-HOW TRANSFER AND COOPERATION BETWEEN EU AND LA COUNTRIES**

3.1. **Aim and scope of the Framework**

The core objective of the ENABLE project is to define a series of roadmaps for the transfer of European business cases and research innovations to the Latin American countries. This objective is served in the context of a general Framework of cooperation between the two areas, i.e. Europe and LA. This Framework defines the overall organizational structure, the thematic areas for cooperation, the research priorities and the communication channels to be used.

In this context, the Framework constitutes a knowledge transfer “mechanism”, presenting general guidelines and levels of actions, which should be initiated by the key players of both sides, who wish to establish an effective communication and cooperation platform for know-how transfer, close trade relations and common research initiatives.

As it can be seen in the following table, the role and content of the Framework is totally different in relation to the roadmaps:

| Table 6: Aim and content of the ENABLE hierarchical Framework in comparison to the roadmaps |
|-----------------------------------------------|---------------------------------------------------------------|
| **Framework** | **Roadmaps** |
| Aim and role | To describe the overall skeleton and cooperation scheme that should be adopted by the key stakeholders of both sides for future collaboration and know-how transfer. | To define and clearly describe the specific implementation plan for the transfer of the European best practices to LA. |
| Content | Includes general priority areas and actions that allow the effective cooperation and knowledge transfer. | Includes concrete measures and actions (at operational and policy level) directly linked with the European best practices. |

In addition to the above, the roadmaps can be considered as complementary to the Framework, in the sense that the roadmaps provide “examples” for the implementation of one or more of the priority thematic areas defined in the Framework.
3.2. General description of the Framework components

3.2.1. Outline of the Framework

Any know-how transfer and cooperation framework comes to address a specific situation and serve specific needs of the countries and regions that will apply this framework. Moreover, it assumes that an analysis of the existing situation has been done, as this should be the starting point for the definition and application of the framework. In the case of ENABLE, this has been done and documented in the deliverable D1.1, and therefore all subsequent actions (as part of the framework) are based on this analysis.

The ENABLE Framework for know-how transfer and cooperation between EU and LA countries is composed of four major components, meaning building blocks of actions. These are:

i) the identification of authorities and stakeholders to be involved in the cooperation mechanism

ii) the identification of the priority thematic areas for cooperation and knowledge transfer

iii) the establishment of appropriate channels of interaction, and

iv) the designation and motivation of the champions

The above components are in sequential order; each one of them serves a specific objective and consists of a series of actions. Figure 3 illustrates the general Framework, as well as the link between the components of the Framework and the roadmaps.

The figure depicts a hierarchical structure composed by four levels of components, aiming at the smooth transferability of the European knowledge to the LA countries. The Framework consists of general components that need to be initiated for the realization of the above goal. Each component provides the possibility for further and more specific actions. These can be carried out through the procedure of the roadmap development.

Each component is described separately in the following section. The respective insight that can be gained through the roadmaps development is also described for each level.
### 3.2.2. **Description of the Framework components**

#### 3.2.2.1. **Involving authorities and stakeholders at the appropriate level**

**Actions**

An effective knowledge transfer mechanism requires the involvement (to a lesser or greater degree) of the authorities and appropriate stakeholders at various levels and from different transport sectors. The cooperation of regions and countries is primarily a decision that should be taken at policy level and engage authorities directly or indirectly involved in the transportation of goods both inside the target area and in intercontinental trade. In the case of freight transport and logistics, such authorities or stakeholders are:

- Central or regional government agencies
- Academics or research organizations
- Port managers or Terminal concessionaires
- Customs
- Transport or Logistic service operators

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**Figure 3:** The levels of action for know-how transfer and cooperation
Transport associations
Commercial Associations (e.g. Chambers of Commerce)

The knowledge transfer itself is an action that requires the participation of the private sector. Both big players and SMEs should be convinced for the necessity of this initiative and allocate efforts to adopt the proposed solutions (best practices). Therefore, the above authorities should work together with the private sector in order to ensure successful knowledge and technology transfer, and most importantly adoption by all parties involved in intermodal freight transport.

Based on the European experience on these matters, all these Latin American stakeholders could define, develop and apply master plans, standards, procedures, Information Technology (IT) systems, partnerships and other “products” that will contribute to the formulation of a better intermodal freight transport system. Furthermore, these stakeholders could work together with their European counterparts on critical nodal points (e.g. customs) and aspects (e.g. standards) of transport corridors connecting Europe with Latin America in order to improve trade and transport between the two areas.

**Insight**

In each best practice roadmap, all key players that could possibly be involved in the implementation of this practice have been identified and actions for their stimulation towards specific areas of cooperation have been proposed. The validation of selected roadmaps provided the possibility of an active involvement of both local and intercontinental stakeholders, both from private and public sector.

### 3.2.2.2. Identifying priority thematic areas for cooperation

**Actions**

The identification of a number of thematic areas as more suitable candidates for a more intense cooperation between the European and Latin American freight and logistics industry was based on the analysis of the existing situation in the target areas of Argentina and Brazil (resulting in key barriers and needs in various fields of intermodal freight transport), and the conclusions and recommendations drawn from the projects events that took place in LA (after fruitful discussions with and interviews of local authorities, institutions and individual experts). The areas of interest were thoroughly presented in deliverables D2.1 and D2.2, both in a matrix and through a bulleted approach. The focus remained on addressing the identified and specific freight transport problems, needs and barriers in Brazil and Argentina (and to great extent to other LA countries too) remained throughout the entire technical effort of the deliverables.

Specific and concrete application areas, in which EU-LA business, industrial and research cooperation can be promoted, are the following:

- Port development and management. The area includes:
  - Port Community Systems (PCSs)
  - Systems for connecting port operations and shipping operations to logistics networks by utilizing advanced information technology (IT)
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- Encouragement and promotion of PPPs in port operation and infrastructure development
- “Paperless port” concept and e-freight applications
- Stimulation of intra- and inter-port competition
- Tracking technologies and know-how for containers and other load units management
- Shipbuilding
- Modernization of labour regulation

- Short sea Shipping and Coastal Shipping. The area presents great potentials in serving intra-regional transport flows and balancing the O-D matrix, hence easing up the burden on land networks.
- Railway development and management. The issues concerning the improvement of railway services deal with: investments in coordination of the various railway lines and companies, traffic harmonization and settling some economic and financial issues particularly regarding the types of concessions given to private operators.
- Regulatory issues. The area includes the application of new regulation for intermodal transport operation in Brazil, possibly in other LA countries too, that will recognise the importance of the intermodal transport based on railways.
- New logistics concepts and services as well as new business models more suitable for intermodal logistics networks. Design of logistics chain utilizing intermodal transport corridors arises as a key tool for the management of the supply chain.
- Planning for the development of new transport infrastructures and, above all, new transport international links and connections of a radial form (i.e. concentrating flows to hubs) between LA countries and their markets in the rest of the world.
- Dangerous goods handling systems and tools. The area includes systems for the monitoring and routing of dangerous goods.
- Real time information systems for managing and controlling the total door-to-door intermodal transport chains.
- Securing “green” lanes including systems for rebalancing of the O-D matrix.

Insight
The European business cases and research innovations (encoded as best practices) fall in many of the above application areas, but not all. The transferability of each best practice to the target LA countries has been examined in previous technical efforts primarily at an abstract level (deliverables D2.1 and D2.2). This aspect is thoroughly analyzed through the development of the roadmaps.

Each produced roadmap corresponds to a particular European best practice or innovation (or combination of more) and serves specific needs, barriers or priorities of the freight transport in the target countries.
3.2.2.3. Setting appropriate channels of interaction

Actions

This action is made in order to establish the necessary channels and means of interaction between the involved stakeholders, authorities and organizations both in EU and LA countries, as identified in the first component. The main goal for the involved entities (governmental or not) is to exchange information and data on best practices, policies, technologies for applications and other aspects of know-how, expertise and experience.

The following three “channels of interaction” have been identified:

i. A “formal” framework of communication and interaction (i.e. through governmental or other involved Stakeholder Organizations’ Agreements) that:
   - Creates common objectives and structures for the cooperation and know-how transfer.
   - Takes into consideration the role of the market in fostering innovations.
   - Provides incentives and innovative funding schemes for cooperation between the two sides.
   - Enhances mobility of scientists, experts and other relevant human capital across borders.
   - Promotes the interaction of appropriately trained administrators and managers for the exchange of experiences and know-how.
   - Facilitates communication across cultures by allowing for cross-cultural competency and sensitivity.
   - Assists professional certification processes where appropriate.

ii. Appropriate collaboration mechanisms and bodies, which:
   - Define common goals and processes for collaboration in the specific chosen thematic areas.
   - Strengthen the capacity of existing (interaction) networks.
   - Create mechanisms that would cultivate new productive collaboration.
   - Exchange information on current success stories as guiding examples.
   - Create joint cooperation promotion bodies, such as for example the recent EU-US Energy Council (created to promote cooperation between the EU and the US in the field of energy).

iii. Improved cooperation and data sharing in the academic and research communities, which:
   - Promote improved access to soft research infrastructures (libraries, data and knowledge bases).
   - Promote establishment of common standards for technical documentation. Here, the involvement of business entities is necessary.
✓ Try to address the main barriers to research and scientific cooperation between the two sides, such as for example:
  
  o High Information Costs
  o Transactional Hurdles
  o Differences in Intellectual Property Regimes
  o Cultural Differences
  o Belief for capacity to “Go it alone”
  o Institutional Inertia.

Insight

Collaborative schemes and interaction channels have been formulated for the purpose of the roadmaps development according to the type of European best practice addressed in each roadmap. Primarily, this has been done in a rather abstract level, resulting from the identification of possible key players in the know-how transfer procedure. In the stage of the roadmaps validation through the case studies, more specific collaboration schemes and solid communication paths have been formulated.

3.2.2.4. Finding the “champions”

Actions

The term “champion” refers to those involved stakeholders and/or authorities that should take the lead to materialize the business cooperation and knowledge transfer between Europe and LA. This action is very important and critical for the success of the overall Framework. The champions will hold the responsibility to:

- Motivate and coordinate the rest of the stakeholders.
- Define the agenda for knowledge transfer.
- Communicate with their counterparts on the other side of the Atlantic.
- Promote the wide implementation of the appropriate solutions in Latin America.

In the present Framework, it is recommended that champions are found for each area of innovations transfer identified in section 3.2.2.2. The rest of the stakeholders should be defined for each area and clear roles should be attributed to all of them. Action plans, organization aspects and other issues should also be defined.

Insight

The roadmaps define those stakeholders who will seize the initiative for each action to be made within the European knowledge transfer to the LA countries and who will define the communication framework of cooperation between the involved stakeholders. In the stage of the validation case studies, the champions have been specifically identified and clear roles attributed to all involved stakeholders.
3.3. Analysis of the Framework validation results

The results from the Framework validation procedure, although not concrete or easily measurable, were positive. The validation framework was understood by the interviewed stakeholders in Brazil and the studies reported here were considered a valuable experience for Latin America.

Nevertheless, it became clear that there are still many steps to be won in the multimodal transport operation in Latin America, especially in Brazil, so that the European experience can be more deeply used.

The multimodal transport in Brazil faces really intense bureaucratic, tax and regulatory barriers, which make it difficult for any specific action of improvement to generate benefits to the system. There are cultural differences, as well as a clear existence of competition among road and rail transport and inland and coastal navigation, which is a fact not so intensely observed in the European transport. The difficulties of modal integration occur due to geographical and infrastructure issues. Some regions of the Amazon, for instance, only have fluvial navigation for supply, and this navigation is impacted by the variation of the levels of the rivers during floods and drought.

Given the above, it is necessary to further support the European studies with the Latin America’s participation so that the difficulties and differences are better understood and thus the cooperation and exchange of experience can be more effective and provide more benefits.

The LA stakeholders believe that there should be a framework or platform that defines the principles for the cooperation of the two regions. Therefore, they find the proposed Framework quite useful. The thematic areas for cooperation are of primary importance and they should be examined in more detail with the active participation of the industry. They also find the purpose “champion” as very practical and valuable for the initiation of any implementation plan.
4. **ROADMAPS FOR THE TRANSFER OF EU KNOW-HOW TO THE LATIN AMERICAN COUNTRIES**

4.1. **Overview of the ENABLE roadmaps**

In ENABLE, the roadmap has been defined as a sequence of strategies, measures or policies (in general encoded as actions) that can be applied by the target regions with the aim to facilitate the creation of a sustainable intermodal freight transport system. The roadmap can also be considered as an operational plan that will guide and aid the process of the know-how transfer.

The formulation of a series of roadmaps that will facilitate the future implementation and deployment of the European best practices, research results and innovations in Argentina and Brazil was one of the major aims of ENABLE project. The roadmaps are expressed with concrete actions, strategies and policy measures that are necessary for the transfer of each European best practice to the freight transport systems of the LA countries, according to the identified barriers and thresholds as well as the identified needs for improving the intermodal freight transport of the target countries.

The following table provides a brief overview of the business cases (17 in total) and research innovations (16 in total) that were examined for the purposes of the roadmaps development. Each roadmap is presented in Annex A of the current document, while the cases of Polzug and Short Sea XML (pilot cases) are further analysed in the following subchapter (4.2.), along with the results from the roadmap validation procedure.
**Table 7: Overview of the ENABLE best practices**

<table>
<thead>
<tr>
<th>Volvo</th>
<th>Aims</th>
<th>Main results and achievements</th>
<th>Major innovations</th>
<th>Benefits and key success factors</th>
</tr>
</thead>
</table>
| VOLVO company has implemented two concepts, the "8" Train and "Eurobridge" to facilitate the long distance train transport between suppliers (Sweden) and the market (Central Europe) | To create a cost effective, reliable and environmentally sustainable transport solution. Also, to increase capacity and develop a system that would give the option for further future expansions. | The solutions offered by VOLVO enable efficient rail operations through five countries, utilizing five independent rail operators. The solution was achieved by having two parallel operations, as "Eurobridge" was acting as a back-up for the "8" Train when required. | Harmonization of rail operations in five countries was achieved. In addition, a common quality handbook for complete operation for all operators, organizational set-up, and use of Key Performance Indicators (KPIs) have resulted in very reliable services. | Main benefits:  
- Better efficiency, measured in reduced lead times  
- Reliability with precision better than 95% with very little warehousing  
- Reduced round trip time  
- Compared to road transport, the solution is less environmentally harmful  
- The solution is flexible and able to handle fluctuations by carrying different number of wagons  
- The solution has potential for expansion  
Key success factors:  
- Strategic decisions and persistence from VOLVO Logistics  
- Willingness to adapt in all participating rail operators  
- Organization of the operation with clear door-to-door responsibilities |
### Stora Enso

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<tr>
<th>Brief description</th>
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</thead>
</table>
| An integrated paper, packaging, and forest products company, which concentrates mainly on B2B customers. The company has introduced the “Baseport” concept and the North European Transport Supply System (NETSS) to optimize its distribution structure based on a multi modal supply chain. | To become independent of the conventional road transport and search for a new cost efficient and environmentally sustainable system. Also, to ensure high service (frequency, visibility), high quality (reliability above speed) and high flexibility (capacity). | The Baseport concept:  
- established Local Distribution Centres (LDCs) close to customers,  
- chose waterborne and rail transport,  
- introduced the Stora Enso Cargo Unit (SECU – a weather protected cassette ISO certified),  
- started to use an info logistics system and  
- developed loading systems. | The innovations include both concept and technology:  
• Density of cargo by using SECU and special rail wagons  
• Cargo handling concept and technology in port operations (250-400 TEUs per hour)  
• Vessels designed to support efficient cargo handling  
• Emission reducing vessel technology | Main benefits:  
- Reduction in costs  
- Lower emission levels  
- Better reliability and frequency  
- Higher capacity  
- Greater flexibility in handled cargo types  
- Better supply chain visibility  

Market success factors:  
- Stora Enso Cargo Unit (SECU)  
- Multi modal supply system  
- Unit level identification  
- Visibility  
- Frequency  
- Reliability  
- Local Distribution Centres  
- Strategic decisions and willingness to innovate  
- Development of an integrated standardized solution |
### Coca Cola Drinker AS (CCD)

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<tr>
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</thead>
</table>
| An enterprise established in Norway, responsible for sales, production and distribution of the Coca-Cola products in Norway. | To use intermodal services in order to get an optimal trade-off between transport price and services offered, taking into account location decision of the production plant and warehouses in Norway, as well as the durability of the products. | CCD uses: 1. Intermodal road-sea-road services (ship on the main transport) 2. Intermodal road-rail-sea-road services (train on the main transport) 3. Only truck transport for door-to-door services  

CCD cooperates with a shipping agency for sea transport and with a forwarder for options 2 and 3 (above). | CCD applies a flexible transportation concept, using slower and cheaper modes (road-sea-road and road-rail-sea-road transport), whenever possible. Cooperation with the shipping companies creates a win-win situation for both parties. | Main benefits:  
- Reduction of transport prices (though keeping the same quality service)  
- Promotion of environmental friendly solutions  
- Opportunity to share synergies with other breweries in terms of distribution network  
- Cooperation between the logistics agency  
- Modal shift from road to railway/sea transport.  
- Distribution to town centre with low population density  

Key success factors:  
- Cooperation among different players of the intermodal chain  
- Comprehensive and updated IT systems for management and information exchange  
- Overcoming of technical and operational barriers. |
## Hupac

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</table>
| An independent intermodal transport operator, owned by logistics, transport and rail companies. It operates 108 trains per day with direct connections form terminal to terminal on fixed timetable basis. It uses IT systems for simple handling and efficient tracking & tracing. It has established its Shuttle Net, a European non-stop train network that carries all common loading units with intermodal equipment. | To combine the advantages of road transport and rail transport (by shifting long distance traffic from road to rail). Also, to contribute to sustainable and more environmental friendly logistics that will improve quality of services, and ensure better safety and security of the cargo. | *Hupac* is the leading intermodal transport operator through the Swiss Alps and one of the market leaders in Europe. It has managed to reduce CO2 emissions (by 55%) and energy consumption (by 29%). *Hupac* has also contributed to technological development by achievements like mega wagon, two pocket wagons and flat wagon for 60-foot containers. | *Hupac’s* business model structure is directed to cooperation with the forwarders and operators. Having forwarding sector as their partners and clients instead of competitors is one of the cornerstones for their success. | Key success factors:  
- Strong operators playing together (instead of competing)  
- Strong transport volume base (major areas in Europe connected)  
- Efficient solutions  
- One operator coordinating the chain between terminals (one leader of chain)  
- Environmental friendly brand  
- IT- solutions supporting coordination and scheduling (this enables value added services) |
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<tr>
<th>Rhinecontainer</th>
<th>Aims</th>
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</thead>
</table>
| **Brief description** | To create a co-operation between deep sea and inland terminal operators in order to cope with congestion in ports (i.e. to form strategic partnership with terminal operators in order to guarantee service availability and quality). | *Rhinecontainer* was able to meet its aims by adapting the business model and forming strategic/operational partnerships, as well as developing new services. *Rhinecontainer* benefits the ports suffering from under capacity and unreliable trans-shipment. | Quick, reliable and frequent intermodal transport to and from inland terminals via Rhine/Main in collaboration with many actors. Main innovations included Service Level Agreements (SLA), and formation/implementation of key performance indicators (KPIs). | Main benefits:  
- Improved port-to-door services  
- Diminishing problems resulting from congestion at seaport terminals  
- Reliable frequency of schedules services  
- Decrease of transit times – improved efficiency  
- Improved quality (implementation of KPIs)  
- Increased market share of the sector in total transport  
- Increased popularity of barge transport  

One major key success factor was the willingness of large actors to co-operate in internal (partners) and external (competitors) context. |
### BoxXpress

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</table>
| A private rail operator specialized on the transport of overseas containers between the German seaport and inland destinations. BoxXpress is operating as a network of block trains. | - To establish an efficient network of intermodal corridors connecting the German Ports to the southern parts of the country  
- To establish competitive alternatives to truck transport  
- To achieve a significant modal shift from truck to railway transport, thus reducing the environmental impact  
- To reduce pressure at port container terminals and, thus, increasing their capacity and efficiency | The main achievement of the case is the strong consolidation of set of intermodal corridors with frequent, reliable, competitive and secure railway services connecting German seaports with main inland industrial and consumption areas. Currently, BoxXpress provides services with more than ten inland terminals using direct block-trains of around 92 TEUs capacity and optimizing transport efficiency. Around 385.000 TEUs are transported every year, which signifies an important reduction of road freight transport. | The strategic alliance of shipping companies, container terminals and railway companies responds to a business model with lot of possibilities for success. All the directly involved companies in the project are well-known big operators which are always up-to-date in transport and handling equipment, as well as IT systems, management and commercial models. BoxXpress services provide data processing support using internet portal to ensure exchanges of information on the status of shipments, location and movements. | Main benefits:  
- Consolidation of intermodal corridors with frequent services connecting seaports with their hinterland  
- Environmental advantages  
- Cost advantages  
- Less congestion and increased efficiencies at involved seaports terminals  
- Less road traffic congestion  
- Modal shift from road to railway transport  
Key success factors:  
- Business model with strong participating operators  
- Strong client base  
- Efficient solutions and competitive services  
- One operator coordinating the whole chain  
- Environmental benefits  
- IT solutions.  
- Direct operation of block-trains (maximum transport efficiency)  
- Good inland intermodal terminals  
- Network located close to production and consumption areas (short pre/post haulage distances) |
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</table>
| A transport operator providing integrated logistics solutions including transportation, storage and distribution. It provides solutions for multimodal transportation of construction material and other supplies. The case developed a transport service of maritime containers between the dry port of Madrid (Spain) and Parma (Italy) via Valencia and Genoa. | To decrease logistics costs, thus improving efficiency. Also, to reduce environmental impact. | The intermodal transport service between Madrid and Parma produced both economical and environmental benefits. | The concept employs all land transportation modes by combining road transport feeding services with more economical rail-road transport. This combination allows operating from inland terminals and helps avoiding congestions at seaports. | Main benefits are related to environmental and economical aspects (reduction of CO2 emissions, avoidance of heavy vehicles and reduction of fuel consumption). Other benefits include:  
- Reliability and punctuality  
- Competitive pricing and higher volume and frequency  
- Door-to-door transport is possible (clear responsibilities are allocated)  
Key success factors are related to the availability of services and infrastructure, but also to the existence of large enough cargo volumes in order for the case to be economically viable. |
**Corman**

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</table>
| A dairy products manufacturer, shipping its products from the ports of Antwerp and Rotterdam towards different European countries and other intercontinental destinations. **CORMAN** introduced a new alternative for its transportation involving barge transport via the Albert Canal. | - To redesign the transport system between production location and seaports by using a more environmental friendly solution, reinforcing this way the 'green' image of the company and its environmental and social concern  
- To maintain or reduce transport costs  
- To improve reliability  
- To avoid congestion problems and waiting times at port terminals | - High reliability achieved (not a single closing of oceangoing carrier has been missed since barge intermodal transport is being used to connect the production plant with the port)  
- Barge transport solution is competitive in cost  
- Significant reduction in harmful gas emissions (around 68% drop) has been achieved  
- Significant modal shift from road to barge in the connection of the production plan with the seaport has been achieved | The management model and culture of the company, strongly committed to environmental and social aspects and willing to reinforce the “green” and sustainable image. | Main benefits:  
- More environmental friendly transport chain  
- Avoiding congestion problems in ports, thus reducing waiting hours in terminals  
- Increased punctuality  
- Less congestion and increased efficiencies at involved seaports  
- Less road traffic congestion  
- Modal shift from road to barge  
- Reduced harmful gas emissions  
- Increased intermodal services available for seaport-hinterland connections  
Key success factors  
- Punctual arrivals  
- Increase of barge service frequency  
- Constant transport volumes  
- Strong commitment of an important shipper like CORMAN  
- Modern facilities and equipment |
### Hub Zahony

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</table>
| A public intermodal area in Hungary with the largest rail transhipment facility in Central-Eastern Europe, which is located in junction point of different rail gauges. It offers an industrial park with infrastructure, wide and standard rail connection. | To establish one of the biggest intermodal areas in Europe linking road and railway interchange along Pan-European transport Corridor. More specifically:  
- To develop an industrial and logistics area to accommodate manufacturing and distribution  
- To develop infrastructure in order to boost the economy and logistics potential | HUB Zahony offers a wide range of services including rail transport, rail-rail and rail-road transhipment, storage, customs warehouse, packaging, rail gauge changes and other value added services. The Zahony Area Logistics Cluster currently operates with 20 regional logistics, transport and development organizations. | The main challenge is different rail gauges (European standard gauge and wide-gauge railway systems of the CIS states), which requires re-loading capacity at the junction of the wide (Trans-Siberian) and European standard rail tracks. Zahony is the largest rail transhipment facility in Central-Eastern Europe with public intermodal logistical centre.  
**HUB Zahony** offers logistics services and business infrastructure. The services include rail transport, rail-rail and rail-road transhipment, storage, customs warehouse, packaging and other value added services. Sophisticated information and communication infrastructure is used. | Main benefits:  
- Increased intermodal services (rail-rail, rail-road)  
- Environmental advantage  
- Cost advantage (reduced transport costs from the truck alternative)  
- Reduced problems due to the different rail gauges  
- Less road traffic congestion  
- Modal shift from road to railway transport  

Key success factors:  
- Strategic geographical position  
- Vicinity and easy accessibility to suppliers and sales market  
- Complete range of competitive services  
- Business model with the involvement of logistics operator, railway undertaken, and the public administrators.  
- Modern facilities and equipment  
- Strong ICT support  
- Marketing and commercial approach  
- Communication campaigns and training |

*July 2010*
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</table>
| A railway intermodal terminal for combined transport in Hungary. It handles around 70 block trains per week, fulfilling non-accompanied cargo needs by using modern equipment. | To provide the adequate capacity and competitive services to foster railway combined transport development in order to improve the efficiency of logistics chains, port-hinterland connections and to contribute to a more sustainable transport model by shifting freight transport from road to railway. | *BILK* provides services to more than 8 different railway operators, domestic and international forwarders, as well as shipping or inland navigation companies. *BILK* attends 65-70 block trains per week and around 140.000 TEUs are handled per year. Services offered include, among other:  
- Loading of containers, swap-bodies and semitrailers  
- Depot for empty containers  
- Handling of reefer containers  
- Handling of hazardous containers  
- Block trains services with Hamburg,  
- Road haulage for containers  
- Customs clearance  
- Container inspection, repairing and cleaning  
- Secured truck parking  
- Informatics services | - Modern infrastructure and equipment  
- Wide range of services offered due to subsidiary companies: *BILK*-Trans Ltd (inland road haulage services); boxXagency Ltd (terminal agent of Eurogate intermodal) and Vamkapu Plc (customs clearance). | Main benefits:  
- Increased intermodal services with frequent connections with first class European ports  
- Better and more efficient operations at terminals  
- Competitive intermodal transport costs  
- Modal shift from road to railway transport  
- Less road traffic congestion  
- Less congestion and increased efficiencies at some ports  

Key success factors:  
- Good terminal location  
- Modern facilities and equipment  
- Complete range of competitive services including customs clearance and road haulage transport  
- Terminal neutral and open approach to private railway operators  
- Competitive services  
- Open ICT solutions which facilitate information exchange with customers and involved stakeholders  
- Involvement and participation of key stakeholders |
### Deutsche Bahn Schenker (DBS)

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</table>
| One of the biggest actors in logistics services with almost a monopolistic position in European rail services. One of the world’s leaders in providing integrated logistics services, land operation, air- and sea freight, logistics solutions and supply chain management. | Since its foundation, DBS aimed at becoming a leading provider of integrated logistics services, land operation, air- and sea freight logistics solutions and supply chain management and, thereafter, at, consistently, extending its competitive advantage within the market. | The main achievement of DB is its strong consolidation as one of the leading transport companies (No. 1 in rail freight, in combined transport and in land transportation in Europe, No. 2 worldwide in air freight, No. 3 worldwide in ocean freight, No. 6 in global contract logistics). DBS operates 5,000 freight trains daily. DB Intermodal offers a pan-European network of over 2,100 trains per week with an annual transportation capacity of three million load units. DB Intermodal operates with 3,700 locomotives, 132,700 freight cars and about 3,300 terminals in Germany alone. As a result of their rail activities, around a capacity of 100,000 truckloads are moved by rail every day. | DBS has established a 3PL/4 PL Business Model to offer full scale door-to-door services and, thereafter, had the capability to serve this service by its own. | The main benefits from DB Schenker project are:  
- Network covering the Global market  
- Strong client base  
- Efficient solutions  
- Coordinating the chain from door to door  
About the key success factors, the following can be pointed out:  
- High economical resources  
- Strong operators playing together  
- Strong clients base  
- Good strategic alliances  
- Competitive services |
### Kuehne & Nagel (K&N)

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</table>
| K&N is a 130 years old company, acting as a freight carrier that delivers integrated solutions across the supply chain, serving its customers through a Global Logistics Network. | K&N is an example of a large forwarding company offering comprehensive logistics solutions to the clients. One of the options in their services is to use intermodal transport for some destinations, provided that the service level corresponds to the needs of their clients. K&N can be considered a user, but also a leader of the corridor. This is because it offers the transport from door to door. | K&N offers European road and rail transportation, including dedicated and individual delivery services. Transport operations are based on partnership with carriers. The service offering is supported by web-based Tracking & Tracing. K&N has a strong influence in corridors because, through their logistical system, the shipments are transported all around the world. The company offers pre- and post-carriage to intermodal transport logistics options, including cargo handling, warehousing, distribution and customs clearance. It also designs and integrates the necessary logistics services, including packaging, cargo insurance, customs clearance - even complex projects, such as dismantling and reconstructing entire plants. | Main innovation is the business model of the corridor. K&N acts as a forwarding company in two main levels: First, as an integrator of the chain, where the train operators coordinate the transport from terminal to terminal. The second role is to take care of the client service in both ends of the corridor. | • Network covering the Global market  
• Strong client base  
• Efficient solutions  
• Coordinating the chain from door to door  
• Environmental friendly brand  
• IT solutions supporting coordination and scheduling |
### Cargo Domino

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</table>
| An intermodal transport concept in combined door-to-door service, offered by a Swiss railway operator. **Cargo Domino** is a self-contained transport system for medium distance inland transport that provides equipments, arranges pre-carriage, organizes transhipment, transports rail freight and delivers goods to the consignee in Switzerland without any transhipment and by-passing traffic hot-spots. | To reach a modal shift from road to rail  
To promote the co-operation between road and rail transport  
To advance the best possible customer's benefit | Ability to offer competitive and environmental friendly option for pure road transport with door-to-door service and delivered by the morning method. The Cargo Domino is a good example of a successful intermodal solution for short distances, from 80 to 300 km. The Cargo Domino-concept is responsible for:  
- Organizing the pre- and end-haulage  
- Organizing equipment  
- Transhipment of swap bodies  
- Main-haulage by rail  
- Distribution | Technique for transshipping the swap bodies without external help or significant investments for new equipment | - Customer benefits: fast, reliable and possibility to plan, door-to-door service  
- Only one contact point for the customer  
- Ability to utilize night transport, which allows goods to be delivered in early morning. This is a significant advantage especially in Alps area.  
- Low infrastructure requirements in terms of needed cranes and reach stackers, which lower the cost of transportation. The driver can operate the transhipment by himself.  
- **Cargo Domino** utilizes the dense network of existing stations  
- Environmental friendly transport mode, which customers may also benefit in their marketing |
**Portbase**

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</table>
| *Portbase* is a Port Community System (PCS) created by the merge of the PCSs of Rotterdam (*Port Infolink*) and Amsterdam (*PortNET*). | - To develop a common platform that would promote one-stop-shop services for the efficient exchange of information within the ports of Rotterdam and Amsterdam and between each port and the respective authorities.  
- To make the logistical chains of both ports as efficient and attractive as possible.  
- To represent an intermediate step towards the creation of a national Port Community System within the foreseeable future. | *Portbase* offers 37 different services for the efficient exchange of information between the public and private sector and between companies mutually. The services cover all port sectors: containers, general cargo, dry bulk and wet bulk. Via a service selector on the www.Portbase.com website, users can easily select services tailored to their needs. | The Port Community System covers the whole spectrum of transport modes that meet at the port enabling modal integration from ship line to hinterland by short sea, barge, rail and road. The solution enables all the links within the port of Rotterdam’s logistics chain to efficiently exchange information with one another. | Main benefits:  
- Better and more efficient operational performance that lowers costs.  
- Faster administrative and logistical processes.  
- Greater client satisfaction.  
- Clear insight into operational, invoicing and declaration processes.  
- Optimal re-use of information within the Port Community System.  
- Easy compliance with new Customs obligations.  
- Less paperwork for cargo declaration exports/imports  
- Quicker processing of trains at rail terminals.  
- User-friendliness  
key success factors:  
- Transferability and interoperability  
- Independency of geographical area and conditions  
- Development and testing by companies representing a large part of Europe  
- Promotion of the cooperation among the different players of the intermodal chain. |
# Short Sea XML

*Described in section 4.2.2.2*

## Valenciaport IT platform (valenciaportpcs.net)

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| A web service platform created to coordinate all the agents involved in maritime logistics processes. | To improve port community's productivity and efficiency through the development of a common IT platform to coordinate and manage information exchanges among all agents involved in maritime logistics processes. | The main result of the project is the successful implementation of an open IT platform giving support to operating transactions for sea, port and land operations. In addition to administrative services, valenciaportpcs.net also features more operational functions like integrated track and trace of shipments for users. | *valenciaportpcs.net* covers business and operating transactions for sea, port and land operations, which is considered an evolution of port information systems. The IT system integrates all the agents involved in the logistics operations that take place in the port and solves the coordination problems they have to load and unload shipments. | Main benefits:  
  - Improved customer services, improved port efficiency and flexibility.  
  - Improved productivity due to standardization of all the agents  
  - Improved processes and reduced paperwork.  
  - Reduced waiting times at terminals.  
  - Noise is reduced due to the use of a smaller number of trucks at the port and congestion.  

Key success factors:  
- Strong project leader  
- Public bodies compromise with the project  
- Port Community involvement |
### Research innovations

**D2D** – “Demonstration of an integrated management and communication system for door-to-door intermodal freight transport operations”

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| Research project, which developed a logistics management and communication system in order to efficiently organise and manage intermodal door-to-door transport chains. | To analyse five (5) multimodal transport chains, assess the activities required for efficient chain management and, then, assess existing technology and develop new systems that could support these activities. Thereafter, to develop a generic business model for transport chain management that incorporated the functionalities of such technology. | D2D Software Solution Prototype which combines:  
• A transport chain management system (TCMS)  
• A monitoring system (FTMS)  
• A communication platform. | • Introduction of new and efficient operations and knowledge about how to operate and improve the multimodal transport.  
• Introduction of new IT elements.  
• Production of an open system, available to all actors in the transport chain. | • Main benefits: time and cost reduction, improved delivery accuracy, improved cargo delivery quality, improved monitoring throughout the whole transport chain, enhanced communication and information exchange/flow and enhanced flexibility of the cargo units.  
• Key success factors: TCMS and FTMS ready for commercial exploitation, without demanding exhausting adaptations and modifications of the relevant information systems already in use. |
**SMART CM** - “Smart Container Chain Management”

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<td>Research project (currently running), dealing with the development of a platform that will enhance the complete container door-to-door transport chain.</td>
<td>To stimulate interoperable B2B co-operation in door-to-door container transport security; To develop compliant application of B2B and B2A container security data solutions with international Customs operations; To develop a neutral approach and a service platform for secure and interoperable data communications; To define added value services and chain visibility, thus enabling techniques for fulfilling operational requirements of the actors; To develop prototypes of advanced applications in global container management, such as dynamic scheduling at container level; To analyze existing business models in global container chain management and operation and study e-managing business models;</td>
<td>Two world scale Demonstrators covering 4 supply corridors Development, demonstration and operation of the &quot;SMART-CM platform&quot;, which will support secured and non biased critical information exchange</td>
<td>SMART-CM will provide a simple, transparent, neutral, easy to handle solution for the interaction between public administrations (primarily customs) and the market players involved in the container transport chain management and administration business.</td>
<td>Main benefits: improved visibility across the container transport chain, reduced operational and investments’ costs, reduced times of processes, container waiting and lead time, quick response to customers’ demands, environmental benefits, better capacity utilization. Key success factors: the interface with the external platforms and technologies that are already established in the market, the standardization of the technological solutions, the achievement of a minimum level of agreement at an EU and Non-EU customs authorities for the efficient implementation of the pilots</td>
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**EURIDICE** - “European Inter-Disciplinary research on Intelligent Cargo for Efficient, safe and environment friendly logistics”

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| Research project, (currently running) that builds an information services platform centred around the individual cargo item and on its interaction with the surrounding environment and the user | To realize the Intelligent Cargo (IC) concept, thus:  
• To support the interaction of individual cargo items with the surrounding environment  
• To improve logistic performances  
• To develop collaborative business models  
• To promote and develop an intelligent cargo infrastructure  
• To realize more secure and environment friendly transport chains | A common ICT platform for logistic providers within the EU, which addresses commonly existing problems of logistic providers from different scope of application and for interoperability of ICT infrastructures between them. EURIDICE enables the set up of a web-based network for communication between the Intelligent Cargo and the operating agents, by providing a number of services | Enhanced and widespread capability to monitor, trace and safely handle moving goods at the required level of detail, from full shipments to individual packages or items. Increased efficiency of transportation networks, by improving synchronization between logistic users, operators and control authorities. Improved sustainability of logistic systems, by reducing their impact on local communities in terms of traffic congestion and pollution. | Key success factors:  
• Use of standardized technologies, which can be integrated in existing ones.  
• Development of a network of interested institutions and commercial companies in a generic platform. Key stakeholders could be brought together in order to establish a core group of an Intelligent Cargo movement.  
• Harmonization of underlying frameworks for the development of logistic software and services. EURIDICE could help to develop a “common language” in a regional level between logistic software and service providers for implementing services on a common acceptable base. |
### GIFTS - "Global Intermodal Freight Transport System"

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| An open access Internet portal/e-marketplace providing high-technology services to the transport and logistics industry in EU, in particular addressing the needs of operators, service providers and end users working in small and medium-sized enterprises (SMEs) | To design and develop, for pilot use, a fully-integrated operational platform, the GIFTS Integrated operational Platform – GIP, for the use of systems that manage door-to-door freight transport both in an inter-modal and an uni-modal way | A platform of services (administrative services, freight transport and operational monitoring and control function, e-commerce services) with a web-based architecture to operate as a single integrated service along and across the entire supply chain. The three components of the platform are: a navigation system (GPS, EGNOS), a communication system (GPS, PSTN, etc.) and an information system | An “all-embracing” platform approach and an integrated “total solution” for supply chain operators in intermodal and multimodal transport. GIP, can be repeatable by competitor service providers to form an interoperable, competitive, global system in a similar manner to the mobile telephony industry, thereby utilising resources more economically, and creating an industry standard that was inclusive of all technologies and services | Key success factors:  
- Use of XML native standard for exchanging messages that is highly interoperable.  
- A modular and distributed architecture through the Web services and CORBA technologies standards.  
- Advanced communication and navigation technologies.  
- Up-to-date mobile terminal devices.  
- Easy access via the web services |
**Parcelcall - “Global Intermodal Freight Transport System”**

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<td>R&amp;D project focusing on creating a scalable real-time, intelligent, end-to-end Tracking and Tracing (T&amp;T) system for transport and logistics applications, to operate across all border, carriers and transportation modes. Acquisition, storing and management of all tracking and tracing information is succeeded at the level of individual transport items (parcels).</td>
<td>• To tackle the issue of different proprietary T&amp;T systems all over the logistics market of freight transport by introducing an interoperable T&amp;T system, with open interfaces and standards&lt;br&gt;• To realize and end-to-end tracking and tracing solution in order to facilitate the operating procedures of carriers across the entire transport chain</td>
<td>- Mobile Logistic Servers (MLS) that keep track of the moving items&lt;br&gt;- Goods Tracking Servers (GTSs) acting between the Goods Information Server (GIS) and the MLS.&lt;br&gt;- GISs providing the portal to the information maintained by the GTSs.&lt;br&gt;Demonstrator for real-time end-to-end tracking and tracing system.</td>
<td>- Open and scalable system architecture that easily allows the addition of new server components over the existing ones.&lt;br&gt;- Tracking and tracing services can be adopted both by small trucking companies, as well as huge multinational integrators&lt;br&gt;- Use of the significantly lower cost public cellular communication networks as an information backbone.</td>
<td>Key success factors:&lt;br&gt;- Inexpensive&lt;br&gt;- Simple to implement and easy to maintain&lt;br&gt;- Easy accessible&lt;br&gt;- Scalable with respect to: the overall volume of data it stores and processed and the size for the individual user company’s IT infrastructure&lt;br&gt;- Reliable and secure</td>
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**M-TRADE** - "Multimodal transportation supported by EGNOS"

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| A European platform which promotes EGNOS and Galileo in the multimodal freight transport user community |  - To provide a positioning system, common for the various transports modes, that allows precise and reliable freight localization and tracking during the journey.  
  - To enable timely and complete information exchange among all involved actors and the seamless, safe and secure transfer of goods from one mode to another.  
  - To integrate reliable position information for the tracking of dangerous and/or abnormal goods in the supply chain management. |  - Dangerous and Perishable Goods Tracking and Tracing (T&T)  
  - Containers T&T (remote localization and visualization on digital maps)  
  - Execution of real-pilots (definition of Action Plan, specifications of the M-Trade solution, demonstration execution)  
  - Assessment of the demonstration results and definition of main recommendations and guidelines for a successful promotion | M-TRADE was the first step towards the operative use of GNSS (Global Navigation Satellite System) in multimodal freight applications and showed the way for future steps in the regulated applications domains | Key success factors:  
  - Straightforward and practical approach  
  - Team commitment and cooperation  
  - Direct involvement of final users  
  - Specify expertise on EGNOS system  
  - Close cooperation with actors involved |
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<th>Freightwise</th>
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| Project that supported the cooperation of transport management, traffic and infrastructure management and administration through the development of an architecture for intermodal transport and the integration of relevant IT systems in the business cases | • To support modal shift of cargo flows from road to intermodal transport (i.e. Short Sea Shipping, inland waterways, rail).  
• Therefore, to promote a Framework in order to support intermodal transport management tools based on previous European and national efforts. | - The FREIGHTWISE framework (FWF). It identifies roles along transport chains, processes performed and information exchanged between the transport operators. The FWF allows standardization across different transport modes.  
- The Virtual Transport Network. It facilitates overview, access and implementation of available services.  
- The Stakeholder Framework. It provides the business guidelines for the implementation of an Intermodal transport chain. Nine business cases were used to develop and test the Framework. | - Simplification of the number of roles, the number of messages required  
- Co-modality (one information package for all modes).  
- FWF entails an innovative approach for the communication and the business/transport transactions between freight transport actors. | The Freightwise Framework:  
- Has a co-modal focus  
- Contributes to interoperability between systems  
- Contributes to harmonization and standardization  
- Is simple to implement and use  
- Decreases risks linked to a performance of an ICT system  
- Decreases risks linked to future developments of an ICT system  
- Is available at low cost  
- Adapts well to existing processes  
- Is technology independent  
- Does not bring any legal challenges  
- Does not bring any security concerns  
- Is suitable for both large companies and SMEs |
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| Research project that provides a solid framework of actions and measures in various levels, in order to realize an e-logistics platform Europe-wide | To provide a detailed description of an integrated e-logistics system supporting co-modality Europe-wide by specifying business/logistics processes and sub-processes, possible use of existing and emerging technologies, standards and applications | - Analysis and benchmarking of the available e-logistics applications in all transport sectors in EU and globally.  
- State-of-the-art review of the current IT application for e-logistics and co-modal solutions.  
- Analysis of operational, economic and legal barriers and opportunities that hinder or facilitate, respectively, the integration of the e-logistics system Europe-wide.  
- A visionary scenario of an integrated e-logistics system in Europe.  
- A roadmap of innovations and changes, covering the main aspects of actions to be taken for a future realization of the ideas.  
- An electronic knowledge dissemination system that enabled the web-based access to methodological tools identified by or developed within the project. | KOMODA provides SMEs (which are not able to invest large amount in high technology devices needed for RFID) with optimization tools and software elements through a co-modal, e-logistics platform. | Main benefits:  
- Access to database of the transport operators active in Europe, representing all transport modes. Possibility to compare their services time wise and freight wise creates chances for the alternative (to road) modes of transport to be taken into account in carrier choice procedures.  
- Improvement of own logistics activities through access to decision support tools for optimizing: cargo flow processes, configuration of distribution network, routing, freight calculations, service providers choice, assets allocation, consolidation of volumes, etc.  
- Obtaining assistance in modelling own supply chain structure and electronic communication models with the use of expert tools.  
- Increase of logistics competence by access to e-learning courses, best practices and on-line consultancy. |
### BestLog "Best Practices in Logistics"

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| Research project that established a European exchange platform for the improvement of supply chain management practices across Europe | - To improve Supply Chain Practices  
- To improve Supply Chain Education  
- To reduce differences in logistics and supply chain practices across Europe  
- To set quality Standards for logistics and supply chain education and practice  
- To achieve a better match between EC policy and logistics and supply chain management decision-making | Knowledge base that consists of:  
- Case studies of good logistics practices cases  
- Education directory (with more than 400 courses listed)  
- Logistics awards directory (with a list of European logistics awards in several countries)  
- Logistics media directory (with a list of more than 170 journals, newspapers and online publications)  
- BestLog toolsets (including tools for best practices logistics decision making, network planning, redesigning of logistics systems, etc.)  
- Useful links (to projects and associations) | - Best practices approach which involves the alignment with the European transport policy  
- The development of a European platform for sharing logistics best practices  
- Online toolsets  
- Online directory of European logistics education opportunities  
- Logistics research database  
- Benchmarking on-line for European companies  
- European conference to share logistics best practices  
- Industry workshops | Main benefits:  
- Access to first hand information on logistics developments, best practices and EC transport strategies  
- Improvement of Supply Chain Management practices, setting of standards and dissemination of knowledge regarding education and job opportunities across Europe  
- Improvement of the performance of the logistics functions through the online toolsets and benchmarking of European companies  
Key success factors:  
- A structured methodology for cases collection and assessment  
- Strong involvement of stakeholders from industry and government  
- Continuous dissemination and promotion of activities |
**BE LOGIC “Benchmark Logistics for Co-Modality”**

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| Research project that defined benchmarking methodologies for logistics chains and analyzed a number of relevant cases | - To improve the efficiency within and across different modes of transport.  
- To support the development of a quality logistics system.  
- To develop a methodology to assess transport logistics performance in quantitative terms at different levels in Europe and globally.  
- To apply the benchmark methodology to assess logistics and intermodal policies of Member States and other countries.  
- To assess transport logistics choices and performance from shippers/LSP and transhipment points.  
- To examine existing quality standards (e.g. ISO, CEN) for transport logistics.  
- To consider the need for new quality standards for transport logistics. | Two (2) web-based tools:  
1. The Logistics Benchmarking Tool, enabling users to compare two alternative transport chains on six main criteria: time, cost, flexibility, reliability, quality and sustainability  
2. The European Intermodal Route Finder (EIRF), a terminal database, enabling users to construct their own intermodal routes (direct terminal-terminal relations and indirect terminal relations using one transhipment terminal) | The e-tools mainly aim at SMEs, but are also useful for larger companies. Cargo owners can use the e-tools to evaluate their modal-shift choices. | - Main benefits:  
- SMEs are able to get insight to the potential gains of reconsidering their logistics choices.  
- The project provided the ability to develop an adequate framework and methodology for market and benchmarking analysis. Also, the ability to develop user friendly tools for this benchmarking.  
Key success factors:  
- The structured methodology for the benchmarking and e-tool development.  
- Strong involvement of stakeholders from industry and government.  
- Continuous dissemination and promotion of activities |
### GOOD ROUTE

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| Research project that aimed to develop a cooperative system for dangerous goods vehicles routing, monitoring, re-routing (in case of need), enforcement and driver support, based upon dynamic, real time data, in order to minimise the Societal Risks related to their movements, whereas still generating the most efficient solution for all actors involved in their logistic chain. | - To critically analyse the dangerous goods accidents and relevant practices and to identify the needs of all parties involved in dangerous goods transportation  
- To integrate all functions on top of a vehicle prototype and test in three (3) Pilot sites, Europe-wide.  
- To involve all key actors in the dangerous goods transportation chain, as well as Original Equipment Manufacturers (OEMs) and sensor suppliers | - A Common Ontological Framework.  
- A Minimum Risk Guidance System (hybrid system).  
- An Enforcement System.  
- Control Centre and Logistic chain support modules.  
- An OBU.  
- A vehicle platform (encompassing OBU) which, among others, provides optimal user interfaces for driver/vehicle and control operator.  
- Web services that allow the full operation of GOOD ROUTE functionality.  
- A vehicle prototype applied in three (3) pilot case studies The core of the system is a real time Decision Support System (DSS) that optimizes the routing of Dangerous Goods vehicles | GOOD ROUTE calculates the minimum risk route, in comparison to the existing conventional fleet management systems, which are operating on the basis of the shortest and fastest route. It is the first time that a system, placed actually in the fleet management sector, takes into consideration the safety aspects of the drivers and the 3rd party population. | GOOD ROUTE was developed with the focus on replacing the existing arbitrary and unguided practices with an efficient and robust DSS.  
- Re-routing by identifying conditions such as weather conditions, traffic jams, accidents, etc. is possible.  
- Time delays (related to company's costs) are reduced  
- Detection of malfunctions and failures is possible, which makes the enforcement reaction more accurate and prompt.  
- The GOOD ROUTE Control Centre works as an info point for the whole logistics chain. All parties are enabled to monitor the transport operation.  
- The drives is assisted in his/her daily tasks through the navigation client, via which she/he is notified automatically for any changes in the route  
- GOOD ROUTE context may be easily extended in many aspects (i.e. include more functionalities to telemetric systems, include other transportation sectors, etc.) |
### CHINOS “Container Handling in Intermodal Nodes – Optimal and Secure”

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<td>Research project that promoted/proposed equipment, methods and systems for optimal accommodation, fast loading and unloading of intermodal transport units and optimal use of storage space both in vehicles/vessels and terminals&lt;br&gt; ‐ To develop methods focusing on the integration into business processes of intermodal terminals of: Container identification using RFID, Container security information (electronic seal), Optical damage documentation (high-resolution cameras)&lt;br&gt; ‐ To develop an integrated system for automatic container handling using RFID and optical damage identification and documentation.&lt;br&gt; ‐ To develop interfaces to existing legacy systems.&lt;br&gt; ‐ To install the CHINOS system at different intermodal terminals throughout Europe, operate it under real life conditions and validate the functionality, scalability, and portability to other scenarios.&lt;br&gt; ‐ To contribute to standardization processes</td>
<td>CHINOS encompassed the three &quot;container status monitoring parameters&quot; (identification, seal condition and damage documentation) into one single system and ensured that the overall system is compatible with the incoming container traceability standard proposals. The system is also fully electronic which allows for remote identification and monitoring. The data can be stored and retrieved, either in real time or as historical data. Furthermore, a Supply Chain Event management Methodology was developed for logistics purposes.</td>
<td>Processes can be optimised and accelerated by using automatic identification and condition checks with contact free reading possibilities (container RFID tags, electronic seals, optical checks) without requiring human intervention. This combination of commercial and security issues in one approach that makes CHINOS quite unique.</td>
<td>Main benefits:&lt;br&gt; ‐ Optimization of information flow&lt;br&gt; ‐ Optimization of interfaces between different transport modes&lt;br&gt; ‐ Automated processes that save time and manpower&lt;br&gt; ‐ Improved monitoring due to automated status messages&lt;br&gt; ‐ Problems recognized and reported as early as possible&lt;br&gt; Key success factors:&lt;br&gt; ‐ CHINOS software components are practically fully developed;&lt;br&gt; ‐ hardware components are available to enter commercial use;&lt;br&gt; ‐ full compatibility with existing systems;&lt;br&gt; ‐ platform independence;&lt;br&gt; ‐ well-established, future proof technology;&lt;br&gt; ‐ easy to maintain and further develop;&lt;br&gt; ‐ low cost, but reliable and fast solutions;&lt;br&gt; ‐ user-friendly</td>
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**VIT ("Vision for Innovative Transport") - Metrocargo**

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<td>VIT project was the research answer to address problematic mechanical and software-related issues within the business case of Metrocargo. Metrocargo, is a technical solution able to provide an efficient and rapid way for the loading/unloading of containers in trains. It’s also a logistic concept based on the speed and the safety of the activities for the goods and the operators.</td>
<td>VIT major aims concentrated on covering the gaps on the devices and the software applications of Metrocargo, namely the lack of: • precise and rapid detection of the corner fitting where the container was to be pinned • verification that the containers on an oncoming train were as foreseen in the load plan • making sure no person enters the automated loading area • prediction of the effect of errors and perturbations on the overall performance of the system</td>
<td>VIT project developed, installed and tested vision equipment and a performance predictive software onto an already existing full scale mechanical prototype. The results deriving from VIT’s application are: • A vision system for load/unload of containers in/from trains. • An innovative prototype of a low-cost 2D visual module to scan the train composition. • A video-surveillance system for human operator safety. • Software application for the analysis of risks connected to faulty information from the vision systems and the evaluation of loss of performance due to errors by the vision devices.</td>
<td>The major VIT’s innovative element lies on the mechanical design that it supports: Metrocargo. The Metrocargo electro-mechanic system enables the loading of units with the same concept used in passenger transport, setting-up a network of shuttle trains that run on a fixed time plan, loading the cargo units. The Metrocargo system is an innovative technical solution that allows the loading of cargo units on the train horizontally, while the train is standstill in a node of the logistic network, under the electric feeding line, without the modification of the wagons and the containers. This enables a “network” use of the railway</td>
<td>Main benefits: • Move high volumes of freight traffic from road to rail. • Form an integrated system using ships and trains for long range transport, and trucks for door delivery and pick up. • Reduce pollution due to reduced transport by truck on medium and long distance. • Reduce the overall logistic costs due to greater efficiency. • Effect fast connections between ports and dry-ports. • Provide flexibility and progressive development through modular construction. • Enable low investments. • Reduce the spaces required. Key success factors: • Modularity • Easy assembly • Flexibility • High reliability • Easy transferability of equipment • Only one operative line/track • Horizontal transhipment under power line • No railway manoeuvring</td>
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**Cosma** “Container Operations System for Management and Administration

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| Cosma is a software system, developed by the Institute of Shipping Economics and Logistics (ISL), to handle container operation for small and medium sized terminals | To support the users at fulfilling their daily container management tasks. | The Cosma system is built with a modular structure and integrates the following main modules:  
- Container Management (transport planning, booking gate-in/out, booking corrections)  
- Overview of operative processes (container movement, container data, stock inventory)  
- Warehouse management (general stock figure, configure storing position, graphical display)  
Upon request by one user, the software integrates into the system the use of a fully automated crane control and is in full operation presently | The Cosma system is able to handle Rail and Road transport modes, as well as vessel transport mode including inland navigation, deep sea and short sea shipping. | Main benefits:  
- Uniform proceeding used in each booking mode.  
- Ability to work with external data  
- Sophisticated storage strategy reduces unnecessary moves and costs.  
- Increase the complete yard utilization and handling speed  
Key success factors:  
- The modular concept and implementation, allowing straightforward adaptation of future requirements  
- Ability to offer off-the-shelf software and individual customization  
- Optimal design of the user interface  
- Infrastructure of the computer system |
**INTERFACE** “Improvement of intermodal terminal freight operations at border crossing terminals”

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| Research project that aimed at identifying and testing in real environment innovative solutions to improve borders' crossings terminals operations between EU and Central and Eastern European Countries (CEECs), and inside EU. | The main goal was to reduce customs waiting time, increase security, harmonise regulations and to develop additional functions to accommodate certain border crossing terminals services (such as re-groupment, customs clearance, etc.). | Within the project INTERFACE a literal review and a specific survey on 22 different types of border crossing terminal were conducted, together with their performance criteria/indicators analysis. The survey concluded in identifying 2 terminal families of terminal typology classification. This classification has been the comprehensive basis for the qualification of parameters influencing the terminal performances. The proposed solutions were tested in 3 demonstration sites, in real environment. | INTERFACE focused not only on isolated solutions but also on combined solutions stressing their potential at different levels (technical, economical, organisational, etc.) Innovative technologies favouring the reduction of the burden of border control inefficiencies for intermodal services and innovative logistic organisations ensuring the integration of the techniques in the integrated transport chain were assessed and tested. | Main benefits:  
- High quality in information interchanges between transport operators intermodal transport and provision of operational/commercial data to the operators.  
- Increase of the pre-advises reliability.  
- Decrease of stop-over times at borders.  
- Increase in the intermodal trains punctuality.  
- Increase of productivity with decrease of the stuff.  
- Elaboration of computerized transhipment plans with automatic checking and alerts related to the loading errors.  
- Integration of productive information on the wagon.  
- Decrease of the duration of the train composition.  
- Increase of the work time rate of the process.  
Key success factors: Transferable and interoperable technical solutions, which were tested in real environment by companies representing a large part of Europe. |
4.2. Case studies results

4.2.1. Argentina

4.2.1.1. Selection of the best practice to be validated in Argentina

The pre-selection of best practices

Given the diversity of best practices available, UBA’s team proceeded to pre-select a short list of those eminently addressing bottlenecks or growing sector of Argentina's cargo market. The practice with the highest chance to find willingly "to be" stakeholders and fellow industry collaborators would be the one selected.

Rhinecontainer was the earliest candidate. Paraná River basin and its increasing population, extending over a far larger geographical area than the Rhine's, was an obvious case for research. However, it was equally obvious to realize that it would not have a high chance of finding sector representatives with the required diligence to participate in a validation process. Indeed, barge traffic is a growing sector with large potential ahead of it. However, operators and all connected services are overwhelmingly concentrated in bulk transport, a market unlikely to reach a ceiling in the short run. As a consequence, presenting the idea of containers on barges would not be likely to make much progress.

Boxxpress also resulted attractive, as a best practice standing for new service linked to port activity. This case was also discarded, since it is about an operator running services on entirely foreign infrastructure. Argentina’s current legal framework for intercity rail operations does not in fact exclude such a service, but rather the full allocation of infrastructure to operating contracts makes the assessment of a third party service irrelevant at the moment.

Finally, Polzug would provide a third party operation on the basis of two contiguous sets of infrastructure, involving the operators owning this infrastructure.

Rationale: the areas for cooperation and the opportunities in Argentina's logistics sector

The survey of the transport and logistics sector produced in the first stage of ENABLE (D1.1) came up with a number of remarkable results that guided both the pre-selection and the final choice. Despite the extensive rail network in condition for use, the available modal split estimations confirm that the role of rail in Argentina's cargo market is negligible. Recent growth of cargo activity on rail turns unimpressive when this is considered and also when historical tonnage data strongly suggests that the system's capacity is significantly higher: back in the late 40’s a network only slightly larger would carry 35 million tons annually. Even this figure is only a rough indicator: such traffic was run by cargo trains using only part of the system’s capacity, since a significant chunk would go to passenger train operations.
Also, this growth has been entirely concentrated in agricultural bulk cargo, increasing an already high level of specialization of operators and the system. If traffic in the country’s port system is taken as an indicator, recent evolution of the intercity cargo market hasn’t only been related to bulk goods, but also to containerized cargo. Figure 5 shows the recent evolution of both Argentina’s containerized cargo market and container traffic by rail. Although some growth has been registered, this logistic segment has remained alien to changes in operations and efficiency gains related to the franchised rail system in place since the early ’90s.

Figure 4: Left: available railway infrastructure. Right: railway infrastructure in use

Figure 5: Evolution of Argentina’s containerized cargo market and of container traffic by rail
Another key element to choose the validation best practice was the recognition of a high level of adaptability and dynamism shown in recent years by port operators. This sector went through a thorough investment and reconversion process. Gains in scale and increased level of professionalization have allowed for and also demanded comprehensive use of ITs. This process’ scope has by no means been limited to the perimeter of shipping facilities. It has gone in parallel to dredging for deeper draft in the lower Paraná River. Port operators have thus shown a spontaneous disposition to the coordination of the system. The propagation of efficiency and technological improvements on to the terrestrial links of the logistics chain has been limited though.

In the greater Rosario area, for example, buffer parking lots for trucks have been built, as a complement to unloading facilities. However, trucks keep showing up without notification or scheduled entry for unloading, increasing congestion and even partially blocking roads. At the same time, container consolidation is concentrated in the Buenos Aires greater area, which suggests that the integration of the transportation process only begins just near port terminals, and not close to origin/destination location further afield.

Given the existing capacity in the intercity rail network and the innovative profile of the port sector, Polzug clearly emerged not only as a candidate, but rather as remarkably feasible 3PL model to be inserted in Argentina’s logistics system.

One of the features of the recent evolution of the port sector has been a slow but sustained tendency for greater container traffic growth in terminals outside Buenos Aires. Indeed, among the many past attempts to host regular shipping services in alternative ports, terminals in Zárate, Rosario and Bahía Blanca have become established ports of call for regular container services. TEU figures do remain several orders of magnitude below Buenos Aires’. However, none of these three terminals experienced significant traffic decrease in both 2008 and 2009, as it was the case for Buenos Aires’s Puerto Nuevo and Dock Sud terminals. This is a first sign that traffic going through these terminals is in large part due to shippers ceasing to use terminals in the BA area and shifting because of absence of congestion, either in road access of customs cargo clearance.

This feature in particular allows for a moderately optimistic extrapolation of TEU traffic growth in the new port nodes. Table 8 shows an intuitive growth forecast of the market of containerized cargo. 2008 figures are the latest complete data set available and are representative of 2011 market size. Noting that the process of cargo containerization in Argentina is over, considering the high diversity of goods now using containers, and that economic prospects for the next few years do not suggest a significant increase in goods imports, mid-term growth may remain slower than in previous years. Additionally, the emergence of a ship-to-ship or barge-to-ship-market is unlikely, given the many unfavourable regulations in place. Other underlying assumptions for such a scenario can be found in Lascano (2005). Thus, a conservative figure is included at the bottom of the right hand side column of Table 8. Also here, a hypothesis for 2020 market distribution among container terminals is included, with the only purpose of pointing out how a small change would turn into huge traffic increases, particularly in Rosario and Bahía Blanca.

Table 8: Current and ball park 2020 estimation of containerized cargo market for Argentina.

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TEUs</td>
<td>part.</td>
</tr>
<tr>
<td>Buenos Aires*</td>
<td>1,781,100</td>
<td>92%</td>
</tr>
<tr>
<td>Rosario</td>
<td>42,151</td>
<td>2%</td>
</tr>
<tr>
<td>Bahía Blanca</td>
<td>25,523</td>
<td>1%</td>
</tr>
<tr>
<td>Puerto Deseado</td>
<td>25,523</td>
<td>1%</td>
</tr>
<tr>
<td>Ushuaia</td>
<td>58,869</td>
<td>3%</td>
</tr>
<tr>
<td>San Antonio Este</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Puerto Madryn</td>
<td>24,011</td>
<td>1%</td>
</tr>
<tr>
<td>otros</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>1,931,654</td>
<td>2,300,000</td>
</tr>
</tbody>
</table>

*La Plata and Zárate terminals are included in Buenos Aires

The conservative estimate adopted in both market size and distribution, yields traffic increases for both Rosario and BB well beyond the 100% mark. If transportation costs to these two ports can be reduced using rail, then traffic will be either even more likely to increase, or at least correspond to a larger extent to cargo originating in Argentina’s west and northwest regions, which lie farthest from maritime ports.

New regular container services calling at smaller ports are aimed at capturing the cost of opportunity of trucks entering the Buenos Aires greater area. Launching a service from these ports to Cuyo or other far out regions would add further savings, and assemble land transportation to cost, modernization and efficiency levels of the port and maritime sectors. The transferability analysis for Polzug then inserts into on-going developments, increasing its consistency and chances for actual put into practice. The most gravitating element is linking the selection and the validation to the port sector innovative capacity and spontaneous readiness to coordinate the logistics chain.

4.2.1.2. Short description of the Argentinean case

The first contacts with the “to be” collaborators-stakeholders made the UBA team realize that it would be highly productive to get to know more of Polzug, and to do so according to the needs or uncertain areas related to establishing a similar service in Argentina. This thought was shared with ENABLE’s coordinators who agreed it would be a great and unforeseen input for the validation. After conducting the first, preliminary interviews with UBA’s partners in Argentina’s logistics sector, a team from UBA travelled to Polzug’s headquarters in Hamburg, Germany.

Mr Marcel Sames, general manager of Polzug, accepted to meet the UBA team and answer their questions. In a very open interview, Mr Sames thoroughly explained what services are provided by and what cargo market is served by Polzug. Also, details about Polzug’s institutional structure were mentioned, as well as a basic description of the kinds of infrastructures used by Polzug’s trains.

Polzug is a half-acronym, combining the first syllable of Poland and the German word for train, “zug”. This 3PL company was formed in the early ’90s, after the fall of socialist isolationism in Central and Eastern Europe. The company’s initial shareholder’s
composition was 40% to Hamburg’s autonomous City Government (through its fully owned port authority, HHLA), 40% to Poland’s state railways (PKP), and the remaining 20% to a consortium of Polish truck operators. Therefore, Polzug was created as an early transportation corridor to link Poland’s foreign trade cargo market to the port of Hamburg. Its current composition was established in 1998, with equal one-third stakes for HHLA, Germany’s state railway (Deutsche Bahn, DB) and PKP, becoming a fully railway-oriented company. The city’s champion role in establishing the service should not be overlooked, and is highly relevant for launching a similar service in Argentina.

The unequal weight of Polzug’s initial shareholders shows the importance the city had in gathering the other Hamburg is an autonomous city and is not comprehended in any of Germany’s states (Länder). This autonomy is the result of a very strong city identity and politics, inherited from its strong hanseatic tradition. Polzug then, may be defined as a tool of the city for hinterland management.

Polzug’s services move over 100,000 TEUs every year between Poland and North Sea ports, mostly Hamburg but also Bremerhaven and Rotterdam. Daily services in each way are run between Hamburg and Polzug’s own terminal in Poland, and three times a week from each of the other two ports. The figure exceeded the 130,000-TEU mark in 2008 and full recovery is expected along post crisis economic developments. The staff amounts to 130 people, mostly present in the Ukraine, Baltic States, Kazakhstan and other central Asian countries. This figure does not include personnel working in transport operations, provided by port terminal and railway operators. DB and PKP provide locomotives and personnel on their respective stretches, as well as wagons in equal quantities. Initially, PKP terminals would be used for transfer and warehousing activities in Poland. Now, Polzug has four own terminals, on land purchased by HHLA. Terminal and transfer centres are a key element. A few years ago, PKP proposed to the other two partners to develop a series of terminals under its responsibility, harnessing Union subsidies and support. Polzug would then have access to such terminals. However, years after none of these have come to be. Additionally, opting for Union financial aid would have meant that terminals remained open to any operator. As much as transfer and warehousing operations are secured on the port nodes served, Polzug considers highly important to control operation on the other end.

According to its general manager, Polzug’s distinctive service attributes are:

- Possibility to purchase block transport capacity
- Visibility of the provider. This is related to Hamburg’s high reliance in the many polish one driver-one truck-one company, highly atomized transport capacity.
- Guarantee of capacity. This is also in relation to the uncertainty intrinsic to capacity being in an atomized fashion.
- Stability of rates
- Container cleaning and repair services
- Management of customs procedures
- Multimodal coordination
- Gate-to-gate information on cargo

As it can be recognized, neither a lower transport cost nor an emissions reduction are among Polzug’s flagship attributes. This is partly due to the average customer profile:
large firms, with international assembly circuits that will look for guaranteed block capacity at a stable rate.

Another of Polzug’s most important assets is the knowledge of frontier market. Initially Poland would be this frontier. More recently, the focus of business is moving to countries further east, outside the EU. Polzug is already moving shipments to these markets, using rail for the thousand kilometres from Hamburg to Poland’s eastern border and changing to truck, or to the broad gauge rail network east of the border. Given the current and future importance of Far East Asia and the shorter transit times via the trans-Iberian (two weeks against five by sea), Polzug is already positioning itself in the new frontier market. The sign hanging at its headquarters entrance speaks for itself (Figure 6).

**Figure 6:** Banner hanging at the entrance of Polzug’s headquarters

### 4.2.1.3. Technical visit

The purpose of the technical visit to Polzug’s headquarters in Hamburg was to get a closer look at the practice selected for validation, but this was mainly oriented at providing a solid outlook to those industry representatives willing to collaborate with us. This was achieved and even exceeding those interviewed: the technical visit enabled the validation process to deal with the need to connect policy to transport practices. Forum members had already stressed the need to involve public bodies in promoting or supporting improvements in logistics. As already explained, Polzug’s case turned out to have an essential policy component, which made the practice particularly suitable for the Argentinean context, beyond the technical aspects that had initially led to the selection. This wouldn’t have been possible without the technical visit.

The technical visit was conducted during the last week of May 2011. By this time, some interviews had been covered, and some were pending. This circumstance, which was not chosen deliberately, turned out to be a good strategy, since it was possible to ask Polzug if they had faced problems similar to those reported as potential by the representatives of the industry collaborating with ENABLE, but also, after the technical visit, it was possible to assess a more realistic scenario in terms of policy, investment and day-day operations conditions.
Two ENABLE team members attended to an interview with Polzug’s general manager, Mr. Marcel Sames, who kindly answered many questions for over two and a half hours. Mr. Sames provided complete answers, always stressing those aspects related to different operators coming to agreements and working together on a daily basis. Polzug’s most recent history is marked by railway seeking to establish its own international operations. Mr. Sames had a clear view of Polzug’s competitive advantages.

4.2.1.4. Stakeholders’ suggestions on case transferability

The following information stems out primarily of the dialogue conducted with seven professionals representing the three “to be” stakeholder Institutions contacted during the validation, and that would kindly collaborate with ENABLE in providing information and their staff’s time for the interviews.

All interviewed stakeholders agreed that a containerized cargo market seeking to reach shipping services in less congested ports exists in western Argentina. Since the validation does not intend to be a market study and would not conduct a demand assessment, but needs to be transmitted to our stakeholders on an example-basis, this agreement on the relevance of the inferred market enables the validation to move forward and examine transferability issues closely.

Overall, stakeholders put government involvement at the top of the list, in relation to investments to be made. This is related to two issues: an amplification of recognition mechanisms for investments made by franchised operators (an adjustment of the current franchise scheme). The second issue is related to heavy investments eventually required on the analyzed itineraries (see the following sections), with a life cycle exceeding the duration of the operation contracts currently in place.

Two of the interviewed stakeholders pointed out that the port operator should be given clear individual entity, distinct from the port Authority’s.

The need for a customs involvement was discarded since the implementation context lies within a single country. The role of a logistics terminal in Mendoza was mentioned by all interviewees.

Environmental concern by part of cargo donors or at a social level was not seen as a necessary pre-condition. Moreover, except for the port operator, interviewees are not entirely familiar with the idea of CO₂ emissions as pollution (it was necessary to insist that the pre-requisite is referred more to the greenhouse effect than to local-effect emissions such as CO). As striking as it is, a 74% emissions reduction turned out to be irrelevant or not to move thoughts from those responding.

Stakeholders agreed that congestion in Buenos Aires port terminals is a pre-condition that justifies improving connectivity to other port nodes, in the way suggested. Willingness of rail companies is present, but very much subject to the two investments issues mentioned above.

As for the proposed operational actions, all stakeholders agreed that demand already exists and that a hinterland-demand analysis would help refine this perception. Analysis of the railway sector is redundant given current operators’ awareness of regulatory and operational conditions.
Private operators expect increased revenue as a benefit. Port authority pointed out the social benefit and the effect on their local community which sees container shipments as a sophistication of port activities and an improvement of city profile.

4.2.1.5.  Stakeholders’ opinion on roadmaps specification

Due to the limited time available, the specifications and structure of the roadmaps were addressed only to a certain extent during the validation process. The stakeholders did not pose any specific weaknesses and gaps in the roadmaps; except from few issues worth to be mentioned:

1. There should be a more detailed description on the role of the stakeholders in both the initiation and during the implementation of the business case. They acknowledged that the role of the champion is crucial for the success of the case.

2. Financial information would be useful to be included in the roadmap. This is directly related to the investments required for the deployment of the case in a given logistics chain by all parties involved. Moreover, it is important to know who bears the implementation costs and who the financial gains.

3. With regards to the proposed “champions” of the case's transferability, one stakeholder highlighted that, though railway operators indeed are the ideal stakeholders to lead the transfer process, their particular history in Argentina indicates that they do not express interest in investments and extensive innovation. This is a fact that makes them important partners, but weak in practice. Launching an idea as Polzug would be revolutionary for current operators (or for a new operator that would be allowed by the Federal Government to run trains).

4. Regarding the focus on sustainable intermodal freight transport solutions, which is defined as a strong precondition for the transferability of Polzug's best practice, an existing political void in Argentina was highlighted by most of the interviewees. This is due to the fact that there are no intentions to “intermodalize” the system, to the point that multimodal legislation has remained permanently delayed, and customs are not always for it. That is to say, the roadmap should include a strong previous political management, county by county, province by province, to obtain afterwards support from the Federal Government (FG) of Argentina.

Generally, it was stated that the preconditions proposed within the Polzug roadmap are correct, nonetheless, they require a long previous work in order to be established in Argentina (especially when environmental aspects are concerned).

5. Concerning the organizational aspects of Polzug's transferability in Argentina, the interviewed stakeholders stated that it would be relevant to establish alliances on the extremes of the rail segment, i.e. with trucking companies in Mendoza and with the port terminal in Bahía Blanca.

6. The proposed timeplan was found adequate by the interviewees. For the Argentinean reality, it was mentioned that the only information that should be added is the fact that there are intermediate timings that can include the capture of containerized flows currently going from Mendoza, San Juan and San Luis provinces to Buenos Aires, that could go to Bahía Blanca and be exported, only
requiring flat rail wagons, and something similar may happen in the Neuquén and Pino Hachado area (refers to cargo in southern Chile). That is to say, cargo flowing through other ports that do not have a 45’ draft.

4.2.2. **Brazil**

4.2.2.1. **Selection of the best practice to be validated in Brazil**

To choose the study case for validation by the stakeholders in Brazil, the roadmaps of ShortSea XML, Volvo and Valenciaport PCS were presented to main maritime navigation agents and operators, who are part of the Stakeholders Forum of the Enable project in Brazil.

The relative European business cases were considered very good proposals, but very difficult to be implemented given the current situation of the organization and operation of maritime transport in Brazil.

The shipping companies and their representatives, together with the Enable project team, have chosen to further evaluate the case of Short Sea XML. The main reason for this choice was the difficulty to further study the case of Valenciaport PCS without the direct participation of the Special Secretariat of Ports. Its representatives have established partnership with the ENABLE partner Valenciaport Foundation during the Enable conference in Brazil, with the aim to implement the “Port without Paper” system. Nonetheless, due to political difficulties among the several agencies involved, the system has not yet presented results that can be measured by the operators.

In the Volvo roadmap case, the analysis of the rail operation in serving large customers would be necessary, where the application of the proposal of integrated operation with short sea shipping could be studied. However, even in the Petrobrás system of fuel distribution, no cases were found, where the solutions could be implemented alternatively.

4.2.2.2. **Short description of the Brazilian case**

The business case of Short Sea XML has been selected as the pilot case in Brazil. A brief description of the case regarding its aims, results, innovations, benefits and key success factors is provided below.

**Brief introduction to the business case of Short Sea XML**

Short Sea XML (SSXML) is a new message procedure designed to streamline the administration processes within a short-sea-based logistics chain. The recommended messages – based on XML technology – comprise the core processes of scheduling, booking, operations and invoicing.

**Aims**

The aim of the project was to establish a network of shippers, carriers, ports, IT providers and other interested parties in order to create a series of standardised
messages based on XML technology, which is cheaper and more flexible than other more established platforms and is generally presented in most software applications.

**Main results and achievements**

The *Short Sea XML* project has delivered a suite of standardised messages covering the core business processes related to scheduling, booking, cargo documentation (manifest), status reporting and invoicing. The *Short Sea XML* message library has been designed specifically for users and providers of short sea transport. It is flexible and easy to use and provides the complete range of messages required for distributing ship schedules. The XML schemas are written to comply with UN/CEFACT’s global standards and have been developed using Core Component procedures.

**Major innovations**

*SSXML* can be used to exchange data between the parties in the transportation chain concerning the consignments, cargo items, packaging, equipment, services, transport leg, transport mean, dangerous goods, terms, custom information and status. Moreover, *SSXML* can be applied in different kind of transportation concepts like feeder, door-to-door and industry shipments, as well as bulk, unitized cargo, container loads and Ro-Ro transportation.

**Benefits and key success factors**

The key success factors of *Short Sea XML* are based on the respective factors of its technical solution and are presented below:

- Clear application / project definition
- Driven by the industry
- XML is supported by most modern technology platforms and is suitable for both small and large organisations
- *Short Sea XML* is not intended to replace the more heavy weight applications (such as EDIFACT) which are already in use by larger organisations
- All new standards will be approved by United Nations standards organisation (UN/CEFACT) and are designed to operate in tandem with existing technologies such as EDIFACT
- XML technology is cheaper and more flexible that other more established platforms
- *Short Sea XML* will be freely available and promoted widely by the Short Sea Promotions Centres and industry organisations across Europe. Once developed and implemented, a non-profit association will be established, funded by membership subscriptions and participant contributions, to maintain and disseminate the standard
- Unified message standards and messages that enable better cooperation and visibility along the supply chain between different partners inside the maritime sector
4.2.2.3. Technical visit

On June 07, 2011, in Oslo (Norway), a presentation of the Short Sea XML was made to RFF partners by the representatives of Norstella Foundation, a non-profitable organization created and maintained for managing the Short Sea XML standard. After the presentation of the project, several questions were made by the ENABLE participating partners, regarding:

- the importance of this technology and the benefits pointed regarding its implantation;
- the number of entities, governmental and private stakeholders involved in the process;
- the number of supervision and control entities involved;
- the relation of Norstella Foundation with the stakeholders of the project for the success in the implantation of this technology, as well as the participation of the government, in order not to impede this implantation;
- problems with taxation and legislation (due to Brazil’s bureaucracy) that could impede the development of the implantation activities, as well as the involvement of many authorities in supervision and control.

All these questions were answered by the representatives of Norstella, who said that the implantation of this technology in Brazil is perfectly feasible, even if this means having a significant amount of authorities involved (as in the same way as Brazil, Norway also has many supervision and control agencies).

Concerning the support given, the Norstella representatives informed that everyone involved in the process understood the crucial reason of the project, its importance and benefits. This has allowed the support of the government and private entities, even brought tax benefits, in order to increase productivity and make the market more attractive.

Regarding legislation, Norway has more than thirty laws dealing with the matter; however, with the support of the relevant parties it became easier to adapt this technology to the current legislation. Although bureaucracy becomes another negative factor, resulting to a significant amount of information, SSXML can be established efficiently and effectively in relation to the standardization of this information.

After the technical explanations about SSXML standard, i.e. the way Norstella operates, the company representatives supported that the use of SSXML in Brazil is perfectly reasonable, since Norway faces similar problems. Nonetheless, political will and understanding by all the involved parties about the benefits that can be perceived, is necessary.

4.2.2.4. Stakeholders’ suggestions on case transferability

The Short Sea XML system is an attractive case because it promises the simplification of administrative processes, reduction of bureaucracy and cost reductions, among others. Moreover, its implementation allows a better cooperation and visualization along the logistics chain, among different partners in the maritime sector.

Nevertheless, the proposal for the adoption of the case presented to the stakeholders through the roadmap involves implantation costs such as hardware acquisition,
personnel training, customization of the proposed systems to the current systems in use, costs resulting from possible delays in the operation of the new system and in the integration among all companies and agencies involved in the different steps of the new process.

Thereby, there is the need to define who will bear these costs: the government or the private sector. It is understood that the regulatory and policy agencies must analyze the proposed system, comparing it to the procedures in use, so that the integration mentioned in the roadmap can be considered feasible.

Independently of all the advantages offered, it must be considered that the proposed system is an offer of a new product, and that due to this it is associated to costs, terms and dependence of external development. Although the system is proposed to be made freely available, there will be the necessity to create (and maintain) a non-profitable organization to manage it in Brazil.

Therefore, in order for the new standard to be actually adopted, the involvement of several sponsors, both governmental and private, is necessary, which, though, can become a complication for its implementation, due to the need for commitment of all the parties involved, which is often quite difficult to obtain. It is underlined that a pre-condition for the SSXML implementation is the strong commitment of the government and the business sector, but there is not any kind of proposition in the roadmap on how to make the parties commit themselves. The benefits that can be expected from the adoption of the standard for all the parties involved, as these have been gained in Europe, is a strong motivation. Therefore, the levels of technological (including management) and financial sophistication are not defined in terms of order of magnitude. It would be interesting to know how much it actually costs or the order of magnitude of the costs of a similar implementation in Europe.

Beyond this financial consideration, there will possibly be the need for regulating the procedures in the country through any legal device and, in Latin America, through any international instrument for cooperation.

It is still necessary, along with the future system implemented in Brazil, to consider the “other end” of the project, when dealing with long-range navigation or even short sea shipping with Argentina, that is, the destination/origin of the freight when it is not a European country. How would the implementation of the system in these countries be?

One of the positive points highlighted is that it is mentioned that the Short Sea XML will be approved by the UN standardization organization. It would be interesting to explore this point further, detailing the ongoing phase of this process at the UN/CEFACT.

In the general evaluation of the study case presented, no aspect that could not be met in the XML system implementation was found. On the contrary, the language standardization was identified as positive, including the UN/CEFACT.

The main difficulty in transferring the proposed experience is related to the mapping of the processes that involve short sea shipping in Brazil. These processes still include a great quantity of bureaucratic activities and a significant amount of actors that are not always willing to simplify the processes. Traditional businesses are used to their own systems and they are often reluctant to change them. These difficulties are related to the deficiencies in the transport regulation as well as to the amount of taxes of the country, and also to the old operational issues of the ports.
Concluding, it is worth to notice that the initial basic conditions to get to the levels proposed by the ENABLE project for the transferability of Short Sea XML to Brazil are difficult to be met for the time being. Considering the slowness of the implementation of a similar proposal, the "Port without Paper", which is a project much simpler in relation to Short Sea XML, it is observed in the current conditions, in Brazil, that the real and full scale implementation of both the aforementioned projects would be quite difficult due to the difficulty of coordination among the parties involved and the costs involved.

4.2.2.5. Stakeholders’ opinion on roadmaps specification

The descriptive material (roadmap) was considered very comprehensive, relatively easy to use, but insufficient for some issues such as implementation planning, description of the previous phases necessary for the implementation, identification of the stakeholder who should manage the system (public or private sector), and description of the minimum status required for the existing procedures in each of the agencies involved in the implementation.

Furthermore, the presented roadmap was considered not to clearly define the aspects and responsibilities related to the implementation costs, development and acquisition of software, hardware, staff training, etc.

In relation to the description of the relevant facts for describing the project (Fact Box), a better description of the initial situation, which served as a motivating factor for the adoption of the best practice, would be required. This section basically presents technical information on the best practice, and because this best practice is an application of information technology, it uses a lot of technical language, a fact that, when presented to entrepreneurs of the transportation sector, makes this part of the text a bit difficult to follow.

The identification of the stakeholders is very comprehensive; however their roles are not clear in the implementation process. In the document, the role of each stakeholder in the transport chain and the benefits they can have with the implementation is reported, but the way they participate in the implementation process, with their activities and responsibilities, is not clear, which limits somewhat the clear understanding of the roadmap.

Concerning the selection of the stakeholders, this was considered complete. Nonetheless, their distribution in the categories mandatory, secondary and potentially additional in the Brazilian case is significantly different from the presented ones. For instance, the mandatory category should include all the actors involved such as navy/coast guard, port health organizations, and inspection authorities, besides the port authorities, terminal operators, ships operators and agents. As secondary would be the ICT developers, standardization organization, Shorty Sea promotion centres, shippers, road transport service providers. Eventually, as potentially additional stakeholders would be the banks and insurance companies.

According to the interviewees’ opinion, the first and most important issue that must be assured is the commitment of the interested stakeholders, thus ensuring the cooperation among them. At this point it should be added that, even if the cooperation of all parties is assured, the implementation in the business environment in Brazil still requires the simplification and reduction of the current procedures. The actions presented within the roadmap for the mapping of the current situation are very clear,
notwithstanding notions of necessary values and responsibilities about the costs are required. This lack of definition of costs and financial responsibilities is the main weakness found in the roadmap, according to the opinion of the respondents.

The technical information is clear enough for a proposed step as this one presented, and the steps for transferability of the best practices, even though described in a concise way, present the general idea that should be pursued for the perfect understanding of the implementation process.

In relation to the chapter about the proposed strategies and policies, the main subjects involved in the development of a project like this are covered, giving an overall and complete overview of the effort required for the success of the implementation. Nonetheless, the respondents considered it necessary to explore a little further the possible ways to involve and motivate the different actors involved in the process. The expected benefits are, apparently, a major motivation for implementing the best practice presented, but given the difficulties to overcome all barriers before effectively starting the new system’s implantation, these benefits become a long-term target.

The schedule presented assumes that the involved stakeholders are already motivated and willing to cooperate in the implementation process. Nevertheless, to get to this point, in terms of Brazil, the path is still very long. This is because nowadays there are difficulties in the operation that range from the communication between the parties who have common interests, to operating procedures and routines which vary according to the person who is developing them.

Thus, although the implementation of the roadmap Short Sea XML to the reality of the Brazilian short sea operation is seen feasible and extremely beneficial, generating great interest by the operators, it is estimated that the time required to effectively start its implementation may take some time, ranging from months to years, depending exclusively on the will of the governors of the country.

It is important to highlight that, in relation to the implantation costs, which are necessary for an implementation process of this magnitude, the existence of a funding line for assembling a core of management of the implementation can serve as initial stimulus. Thus, it is possible to form a group responsible for pursuing the feasibility of the roadmap implementation with greater intensity than in the case where the process needs the parties to define who will be responsible for the costs and the management.

As a general result, it was observed that, despite the care in the selection of the roadmap to be validated in Brazil (see relevant section 4.2.2.1), a great distance between the present reality of the operation in Brazil and the minimum level that is considered necessary to be established in the basis of the roadmap’s application was found.

4.3. Implementation recommendations and the way forward

4.3.1. The Argentinean case (Polzug)

For the pilot site in Argentina, a preliminary feasibility study of the transfer of a joint, port + railway operator + rail infrastructure, container transport operation, following the scheme of Polzug, has been conducted and presented in the following sections.
These sections include all other aspects (further to the ones suggested by the interviewed stakeholders) that are considered relevant by the UBA team and proposed to institutional representatives. Their reactions, most corresponding to that part of the interview previous to the questionnaire, have also been incorporated.

The following paragraphs explore the transferability of a joint operation modality to Argentina’s transport market, combining the efforts of rail and port operators, following Polzüg’s model. Although the validation primarily considered Bahía Blanca, the applicability of a joint operation also assessed Rosario’s container terminal and a new terminal serving Buenos Aires’s market, scheduled to start operating late 2011 in La Plata.

The reproductability of Polzüg’s model not just in one, but in several port areas, is a chance to exemplify new areas for updating railway regulation and franchising models. In this sense, ENABLE’s validation comes in a particularly relevant time. After twenty years of successful life, freight railway franchises are starting its countdown to their expiration date in around 2020-2025. The results of Polzüg’s validation will serve as an input to start thinking of an improved franchise model, one that will help integrate rail and port operators.

4.3.1.1. Background

Introduction

Congestion in road and rail access links to port terminals in the Buenos Aires’ greater area has increased over the last years (Lascano, 2007). As a result, costs have risen and the logistics chain is ever more exposed to losses of reliability. This has favoured the launching of new regular shipping services to the ports of Bahía Blanca (BB) and Rosario (ROS). The former in particular offers fluent terrestrial access and brand new, spacious terminals with ample warehousing and operational facilities. The lack of delays in port entry and exit of merchandise, and the absence of acute urban congestion, such as Buenos Aires’, has become an attractive option for logistics operators handling cargo to and from areas far from Buenos Aires. In turn, these markets seem to have grown steadily over the last years. One of the areas developing a solid cargo market is the Argentine west, also named Cuyo. The assessment presented next has began and primarily been based on the establishment of Bahía Blanca’s container terminal as a regular port of call for shipping lines, on a railway operator based in the BB area, and on Cuyo’s growing cargo market. The criterion was to find industry representatives aligned on a same corridor. As it will be explained below, Polzüg’s service structure is useful and resembles the market and the existing institutional context intervening in a possible set up for a scheduled rail cargo service linking Cuyo to BB’s port.

Since their first arrival four decades ago, regular container services would call exclusively at port terminals in the Buenos Aires metropolitan area. Only in recent years shipping lines launched services to other ports. This is the beginning of a new cycle in the geography of container shipments in Argentina. Buenos Aires is likely to remain a preeminent hub, and newer shipment points such as BB and ROS will handle a moderate but sustained number of TEUs for cargo seeking to dodge higher transportation costs to

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the BA area. Although the calling of non-stop liner services to other continents may not be excluded beforehand, current and expectable market sizes in BB and ROS’ hinterlands strongly suggest their ports will continue to be served primarily by feeder services to hubs in southern Brazil, and that growth in the annual figure of TEUs shipped will come from an increase of this type of supply. Other services, such as lines to Buenos Aires and Montevideo, are also present and likely to continue as well. Be it as it may, congestion will remain a deterrent for containerized transport to use port terminals around Buenos Aires. Polzug system’s validation is therefore aimed at a demand segment resulting from conditions that may be assumed to be stable in the long run.

**Similarities between the BB-Cuyo corridor and Polzug**

Argentina’s intercity rail network is currently used for freight trains only. The Federal Government (FG) owns the infrastructure, network and rolling stock, and services are operated by several private companies. In the early 1990’s, the FG divided the network and rolling stock in six geographical sectors or contracts. Five of them were successfully awarded for a 30-year period, including operation and maintenance of freight services and infrastructure. As proprietor of the infrastructure, the FG approves and oversees investments and changes in the infrastructure. However, every-day activity operators are able to behave as full owners of the capital assets included in their contract. This arrangement for private sector participation, the first of its kind, has proved successful at recovering traffic and increasing efficiency. Additional tonnage being transported by rail since operators came into the scene has corresponded to bulk cargo of raw material, crops in particular.

The 1040 km of rail infrastructure linking the above mentioned market and port terminal belong to two different operational units. FEPSA, ENABLE’s local partner for the validation, is one of these operators. Their network has direct access to the port area of BB, and extends 600 km to the North West, crossing a vast agricultural area. At Huinca Renacó FEPSA connects with the other operator’s network. ALL’s (América Latina Logística) area extends from here to the provinces of Mendoza and San Juan. ALL is a railway operator covering the “inland stretch”.

Polzug’s trains belong to an operator, which also manages the infrastructure and cross onto another’s infrastructure, and this would be the case to run services between Cuyo and BB. This aspect is a key difference between Polzug and Boxxpress for the transferability of a port and rail joint operation.

In both cases, the Argentina and Polzug contexts, infrastructure management is divided. As Deutsche Bahn (DB) has sought for an agreement with their Polish counterpart, in Argentina one operator can look for partnership with another, that is to say, for the Cuyo-BB corridor FEPSA may look for a partnership with ALL. Right in the outskirts of the city of Mendoza ALL has its main terminal in Argentina’s west.

Additionally, unlike in Polzug, one operator owning infrastructure serving the port sets up the chain. That is why railway professionals’ opinions are the key input to conduct a validation, a rail operator resembling DB’s position in Polzug.

The operator of the container terminal in BB was also invited to participate as second validation stakeholder. Their involvement will validate customs procedures for cargo originated in Argentina, and eventually in Chile. Finally, BB’s Port Authority was also
contacted as a dynamic public body which may play a key role in an eventual establishment of a regular container rail service expanding BB’s hinterland.

4.3.1.2. A concept for the transfer of a joint railway operation to the Argentinean cargo market

Figure 7 summarizes Polzug’s service and the geography of its market. A detailed analysis of the elements included in this scheme is provided below.

Figure 7: A scheme for the transfer of Polzug to Argentina’s rail and logistics market

Transport operators

Linking an inland market to sea transport requires coordination of operations between two rail companies running services on their own networks (1 and 2 in Figure 7) and between one of these and the port terminal operator(s) (2 and 3 in Figure 7). The operational boundaries in both Polzug’s and the Argentinean franchised system are equivalent, regardless of whether it coincides with an international boundary. In either case, two companies which are likely to have different organizational cultures, customers and rolling stock (DB and PKP complement each other as for RS) have to work together.

As mentioned previously, Argentina’s rail network is divided into several sub units, each tied to a franchise contract. The FG remains the owner of the infrastructure and holds a 16% share in all awarded contracts. Network division was designed following the main cargo corridors existing at the time it was decided to incorporate the private sector. For example, all units covering agricultural areas have a direct access to the Rosario area. As a pioneering strategy, establishing the franchise schemes required foreseeing many details, and interoperability was not on the top of the list. Moreover, the attention placed
on dividing the network rights was aimed at generating as little need for interoperability as possible, and ensuring bidders that they would have full control over a share of the network and rolling stock. It should be said however, that interoperability is possible and actually frequent, although limited to short stretches in the greater Rosario area and few other cases, and unfortunately with a lack of explicit clarity for shared access to track and share of investments.

Market
As a general reference, two distant Mediterranean regions and three port areas in Argentina are considered as the main market. The area of Cuyo, at the west, and the country’s northwest (NOA, onwards). Both regions lay a thousand kilometres or more from any port and are core cargo consumers and generators. All interviewed industry operators agree on the importance of these markets and the potential use for their cargo, of having lower cost transport to new ports of call for container services. Finally, a reference can be made to markets farther afield, even at the risk of thinking too far ahead. Like central Asia is now the expansion front for Polzug’s business, the cargo markets of central Chile, linked to services to and from Mendoza, and of eastern Bolivia (Santa Cruz de la Sierra) linked to transfers in Tucumán, would be likely to take advantage of lower terrestrial transport cost.

Inland terminals
The regional capitals of both regions, the cities of Mendoza and San Miguel de Tucumán (Tucumán, onwards) respectively, are already major cargo activity hubs. Although not entirely absent, container traffic to Mendoza and Tucumán on rail is negligible and despite terminals are developed, they are strongly oriented to bulk goods. However, ample space is available for the development of facilities for container handling and deposit. In Tucumán a scheme for the development of multi user facilities has been developed.

Selected ports
To get a more tangible analysis, Polzug’s transferability was analyzed on the basis of real scenarios. All new container ports are taken as a reference to briefly assess any eventually required infrastructure investments. A short presentation of the two small container ports and one major terminal scheduled to open in late 2011 is given next.

Bahía Blanca: this is a consolidated bulk port area, third largest in the country, handling crops and chemicals. Container ship operations began in 2002 and have been permanent ever since, with services to Brazil’s southern coast. The container terminal was built by BB’s port Authority (Consorcio de Gestión del Puerto de Bahía Blanca, CGPBB) and is operated by a private company, Patagonia Norte. Putting BB on the map of container geography is a key success of CGPBB and it holds a social and public value much greater that its economic, for BB citizens. Rail access to all terminal are unaffected by urban development or other obstacles.

Rosario: the country’s largest logistics area has developed almost entirely independently from a port Authority. Older port areas, though, remain under provincial jurisdiction, most of which have been disaffected from port use. The province of Santa Fe
administers these areas through the Ente de Administrador del Puerto de Rosario, ENAPRO. Rosario’s position in Argentina’s geography has enabled ENAPRO to develop a container terminal in one of the last available land plots, with very good access for trains.

La Plata: although the analysis was initially focused on BB and Rosario, a regular rail service for containers also applies to a container terminal whose construction is just finished at the moment this report is being written. La Plata’s port area is also dedicated to bulk, and due to its proximity to Buenos Aires and less congested roads is now adding container traffic, as of late 2011-early 2012. Even though this terminal is linked to the greater BA market and expected to be a large player, it is likely, at least initially, to host container ship services such as those calling at Rosario and Bahía Blanca.

Actual corridors
The following figures show the service itineraries resulting from linking the city of Mendoza to each of the three port options introduced previously.
4.3.1.3. Most relevant Polzug service features for the Argentinean case, as emerging from the interviews with industry players

A three operator service

All individuals interviewed agreed that transport of goods other than bulk have more strict requirements, demanding more coordination along the chain. Railway officials would see this as more challenging than port operators who are already coordination providers.

Land transport becoming visible for foreign trade

Being concentrated in bulk cargo, railways have a very low visibility. Furthermore, the little existing knowledge about rail is strongly affected by the aspect of tracks around the country, which seems highly deteriorated to both the general public and transport professionals. Individuals belonging to the main transport sectors remain unaware of the fact that over the last years, rail cargo has hit a five-decade high, and are likely to be sceptical about using available rail services for containers or manufactured goods. The issue of visibility would also attain freight forwarders, 3PL companies in other countries and also international firms establishing assembly or processing schemes.

Rate stability

A rail service is better suited for large volume and long term transport contracts set on the basis of price reliability. This is particularly important for large companies conducting assessments of investments, production lines and transport costs. Railways in Argentina are now also concentrated on large clients.

Primacy of one of three partners

In an analysis oriented to improving smaller port connectivity, the primacy may not lie on port actors regarding both the institutional initiative and operations management. As it will be explained below, the Polzug case puts the role of local government on the spotlight, in relation to having established the service as a hinterland management oriented policy. The difference in the Argentinean context is that the port Authorities for
the three ports mentioned previously and in Figure 8 do not have the centuries of experience and links to such strong local governments as HHLA (Port Authority of Hamburg) does. Indeed, they are less than twenty years old. They have been successful at establishing their ports as permanent players. One front for their further institutional growth is conducting the political rallies for the award of federal funds to launch any initial capital investments that may be necessary.

However, their port’s size and market share are not like HHLA’s, which limits their capacity to permanently head operations and commercial management. In Argentina, therefore, a service like Polzug’s, linked to younger ports, should be headed by rail operators, which have the day-to-day operations expertise and the size to champion commercial management. Agreement on this aspect was also general among all of those interviewed.

Separate brand and joint commercialization of service

Industry professionals interviewed also agreed that branding the service would also be a lesson to take that would help potential customers identify the option and also recognize their cargo is being given a treatment and tracking different to that of bulk goods.

Transport cost reduction

Distances for the proposed service itineraries are significantly higher than the 600 km average for Polzug so, in Argentina, a lower cost of transport is likely to have more visibility as a service attribute.

CO₂ emissions reductions

Even when this attribute could be displayed without significant investment in energetic analysis, it is unlikely to be sought by customers or to have a significant brand value role, at least in the mid-term. However, emissions reductions could be a plus if investments on infrastructure are to be financed with loans from multi-lateral credit entities already paying attention to sustainability in logistics.

4.3.1.4. Preliminary assessment of regulations and infrastructure investments required

A few years back, franchise contracts went under a re-negotiation process, which established a mechanism for recognition of investments paid for by the operator, considering initial contract conditions. The recent growth in traffic based on bulk goods in the context of a 100% growth in agriculture did not generate the need to attend eventual needs of other types of cargo. This is also a result of lack of origin-destination data which has been delaying policymakers from linking infrastructure and transportation policies. Thus, potential traffic with a geographical span exceeding the areas of rail contracts is not likely to receive any attention.

The itineraries pictured above ensemble mostly with rail lines already hosting regular traffic and subject to scheduled maintenance. However, they would also require re-establishing full operational capacity in some stretches. This would be a heavy
investment to be shared by all operators and institutions involved in the creation and management of a service such as Polzug’s. The current legal framework is still to incorporate a mechanism to recognize investments being made on one of the contract areas by a third party and a mechanism to recognize an operator's investment in a contract area other than their own.

4.3.2. The Brazilian case (Short Sea XML)

In Brazil, it is still necessary to give greater focus on enabling competitive Brazilian short sea shipping – that means the obtainment of the “Pro- Reb”, i.e. the tax relief, regulation adopted by the industrialized countries for the expansion of their fleets, and the removal of bureaucracy.

Overall, Brazil still has to solve basic problems related to multimodal transport so that it can use the best European practices in the improvement of its transport operations.

The possibility of implementing the roadmap in the Brazilian market for short sea is really strong; however, it is very difficult to define the necessary time horizon, for there are many issues to be addressed and problems to be solved before starting the implementation.

The IT solution Short Sea XML is highly flexible and easy to understand. Thus its implementation, in principle, presents no substantial difficulty. The main point to highlight is that this one, as any other solution, needs the existing system to operate at level of compliance that allows the mapping of the processes and the adoption of standardized solutions. In Brazil, nowadays this compliance of procedures is not always found and the processes are time-consuming, and have a high degree of complexity and great variability in execution times.

Another factor that should be highlighted is that the communication between the parties who make up the logistics chain of short sea, as well as the long distance navigation, is inefficient, i.e., not always the information is passed in the time window expected which often leads to delays and unnecessary costs.

Besides these examples, other integration issues between the parties still need a better adjustment to be able to reach the minimum level necessary for the adoption of efficient systems of communication in IT.

Due to the above reasons, a detailed analysis of Short Sea XML transferability to Brazil, like the one for Pulzug in Argentina, has not been conducted. Brazil faces several shortcomings mainly at policy and legislation levels, such as tariff policy and taxation that prevent the short-term transferability of best practices. A regulatory framework is urgently needed that will address all these issues. As a representative from Lachmann Group said in the last ENABLE Conference in Argentina, the gap between EU-Brazil needs time to close and this should be a step-by-step process starting from policy and legislation issues.
5. **CONCLUSIONS**

5.1. **Stakeholders’ recommendations**

A major aim of the ENABLE project was to portray the interest of the LA stakeholders in Brazil and Argentina concerning the adoption of the European know-how that could stimulate sustainability in the freight transport systems of their country, but also to report their opinions on whether this transferability could be successfully achieved and the way this could be done.

In order to meet the abovementioned purpose, the activities of the ENABLE project partners were stimulated towards two directions:

1. On one hand, various project events were organized with the aim of bringing the LA local freight transport community in close touch with the project’s activities and, thus, promoting a valuable dialogue among all the participants and stimulating the exchange of experience and expertise. Two Forum sessions were organized (one in Argentina and one in Brazil) that brought together selected representatives of all types of stakeholders (i.e. freight providers, forwarders, transport companies, authorities, policy makers, associations, and more) and made possible the discussion of local LA needs, barriers and priorities, the investigation of potential contribution of the project to the local needs and the establishment of a permanent channel for future cooperation. The agendas of the workshops included indicatively, and surely not exclusively, topics such as:
   a. Available main infrastructure of the freight transport sector.
   b. Legislation issues that rule the trade between LA countries, but also between LA and the EU.
   c. Bureaucratic obstacles.
   d. Perspectives of growth of the intermodal system in LA, concerning both the private and public sector.
   e. Technologies trends, barriers, systems implemented and used in LA.
   f. Investments and markets that are required for the modernization of many transportation infrastructures in LA.
   g. Training and education issues.

Furthermore, two large Conferences were held, respectively in Argentina and Brazil, where important players of freight transportation in LA were given the opportunity to address many of the issues already stated above, but also to investigate cooperation opportunities and strategic alliances.

2. On the other hand, the ENABLE validation process (as this thoroughly described in the current document), clearly and in an efficiently focused manner, involved key freight transport stakeholders in providing their opinion and suggestions on the way in which the European knowledge could be actually transferred in the Latin American region. The approach was mostly focused on the two best practices that were selected as pilot cases in Argentina and Brazil respectively, but general remarks and recommendations were also extracted from the procedure.
Deliverable D3.1:
Roadmaps enabling the European know–how transfer to Brazil and Argentina

Thereafter, Table 9 summarizes the comments and suggestions of the stakeholders that were interviewed in the pilot sites of Argentina and Brazil. The comments basically refer to the ENABLE roadmaps’ specifications for modifications, since no suggestions were made for the improvement of the Framework. At this point it is important to highlight that, in general, the Framework was considered comprehensive and efficient, as far as its purpose is concerned. The interviewed stakeholders evaluated the Framework’s proposed levels of actions sufficient enough in order for the necessary cooperation platform for know-how transfer, close trade relations and common research initiatives between EU-LA to be established.

The reported stakeholder’s comments and suggestions presented in Table 9 are clustered into three categories, according to the level of their adaptation within the final versions of the roadmaps:

- **Category I**: Comments and suggestions that have been exploited in order to optimize the structure and the content of the roadmaps.
- **Category II**: Comments and suggestions that haven’t been incorporated within the roadmaps, due to a given lack of necessary data (i.e. definition of costs for implementing a proposed IT system was not possible, for the relevant information is not public and, thus, very difficult to acquire).
- **Category III**: Comments and suggestions that could produce consolidated versions of the roadmaps, but, yet, left aside for future activities. These recommendations regard issues that fall out of the technical capabilities of the project, mainly due to time constraints, but it would be interesting to address them in future cooperation and/or research activities.

Furthermore, a distinction is made according to those comments/recommendations that can only be applied in the pilot roadmaps (SSXML and Polzug) and the ones that can be applied to all roadmaps.

<table>
<thead>
<tr>
<th>No.</th>
<th>Stakeholder’s comment/recommendation</th>
<th>Category</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Definition of costs, financial responsibilities and investments’ participation is required</td>
<td>II</td>
<td>All roadmaps</td>
</tr>
<tr>
<td>2.</td>
<td>The creation of a non-profitable organization to manage SSXML system in Brazil will be required</td>
<td>I</td>
<td>SSXML</td>
</tr>
<tr>
<td>3.</td>
<td>Ensure the strong commitment of all involved stakeholders</td>
<td>I, III^1</td>
<td>All roadmaps</td>
</tr>
<tr>
<td>4.</td>
<td>Definition of the levels of technological (including management) sophistication in terms of order of magnitude is required</td>
<td>III</td>
<td>SSXML</td>
</tr>
<tr>
<td>5.</td>
<td>Regulation of the legal procedures in the country that will “host” the new system</td>
<td>I</td>
<td>All roadmaps</td>
</tr>
<tr>
<td>No.</td>
<td>Stakeholder’s comment/recommendation</td>
<td>Category</td>
<td>Application</td>
</tr>
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<td>-----------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>6.</td>
<td>Consideration of the “other end” of the SSXML system in cases where the destination/origin of the freight transport is not a European country - Examine who will implement SSXML in these countries</td>
<td>III</td>
<td>SSXML</td>
</tr>
<tr>
<td>7.</td>
<td>Further explore the approval of SSXML by the UN standardization organization.</td>
<td>III</td>
<td>SSXML</td>
</tr>
<tr>
<td>8.</td>
<td>Define implementation planning for the SSXML project</td>
<td>III</td>
<td>SSXML</td>
</tr>
<tr>
<td>9.</td>
<td>Define the manager of SSXML system</td>
<td>I</td>
<td>SSXML</td>
</tr>
<tr>
<td>10.</td>
<td>Define the minimum status that is required for the existing procedures in each of the agencies involved in the implementation</td>
<td>III</td>
<td>SSXML</td>
</tr>
<tr>
<td>11.</td>
<td>Present the motivation/background that led to the adoption of each best practice in Europe</td>
<td>I²</td>
<td>All roadmaps</td>
</tr>
<tr>
<td>12.</td>
<td>Clearly define the role of the each proposed stakeholder in the implementation procedure of each best practice</td>
<td>I,III</td>
<td>All roadmaps</td>
</tr>
<tr>
<td>13.</td>
<td>Re-distribute the stakeholders in the categories: mandatory, secondary, potentially additional</td>
<td>I</td>
<td>SSXML</td>
</tr>
<tr>
<td>14.</td>
<td>Include further stakeholders involved in Polzug’s transferability (i.e. Federal Government, commerce champers, etc.)</td>
<td>I</td>
<td>Polzug</td>
</tr>
<tr>
<td>15.</td>
<td>Strengthen the proposed role of port terminal operators (suggestion was made for them to “champion” the transferability)</td>
<td>I</td>
<td>Polzug</td>
</tr>
<tr>
<td>16.</td>
<td>Develop a local Argentinean roadmap for the transfer of Polzug experience that would strongly involve the policy sector</td>
<td>III</td>
<td>Polzug</td>
</tr>
<tr>
<td>17.</td>
<td>Include some further actions to the mapping of the current situation (i.e. examination of multimodality legislation)</td>
<td>I</td>
<td>Polzug</td>
</tr>
</tbody>
</table>

1 Various suggestions for ensuring the strong commitment of the involved stakeholders in the implementation of a case in LA are proposed within each roadmap, nonetheless, further investigation, in a more detailed level, could be achieved in future projects.

2 The issue was addressed in the ENABLE project deliverables D2.1 and D2.2 in the descriptions of each European best practice.

Finally, in the paragraphs to follow, some general remarks of the interviewed stakeholders are provided.
The Argentinean pilot site

For Argentina, representatives of “to be” stakeholders stressed the need for government involvement, very much in line with a similar appreciation outlined by April 2010 forum participants, a broader and more diversified constituency. However, the need for policy may well be beyond the activities and field of knowledge of those interviewed, and this idea of government involvement needs further precision, and Polzug’s experience is particularly relevant. It has already been mentioned that Hamburg’s city government emerges as the champion for both Polzug’s creation and long term management. Also, it has been pointed out that working toward assuming such an institutional profile is an opportunity for the Port Authorities of the considered ports, at least with regards to initial steps related to funding and bringing potential stakeholder’s to a negotiating table.

The respective port authorities are linked to provincial governments and not to city governments or the federal government. Transport professionals would usually equal government involvement with the federal level. It is true that tax revenue collection is eminently related to the federal government, but it shouldn’t be missed that provincial governments have been gaining technical capability and a larger say when deciding where the federal government puts investments in heavy infrastructure.

In contrast to a common scenario in other American countries, the validation presented here has been instrumental in pointing out that in certain subsectors, Argentina’s logistics system has qualified operators, but up to date infrastructure may be the one element missing.

The Brazilian pilot site

For the Brazilian reality, although the SSXML system presents itself extremely beneficial (generating great interest by the operators), the path for actually implementing the system is still long. This happens due to the fact that nowadays Brazil faces a great amount of bureaucratic, tax and regulatory barriers that hinder the promotion of sustainable freight transport solution in short sea shipping.

The difficulties of modal integration due to geographical and infrastructural issues, as well as the competition among road and rail transport, on one hand, and inland and coastal navigation, on the other hand, intensify the transferability weaknesses. Also, various other difficulties ranging from the communication between parties who have common interests to differences in the operating procedures and routines of the various actors that cannot be harmonized between each other, raise even more obstacles to the transfer of SSXML.

5.2. Future prospects

UBA’s perspective

In UBA’s perspective, in the future, the validation process is to be more flexible and could include a pre-validation stage to be carried out in a higher part or even completely within the University. As a matter of fact, the need to develop a local version of the best practice, as an intermediate step and concept to introduce those interviewed to ENABLE...
and the validation, proves this may be the way to go in Argentina. In the case of ENABLE, this time around resources for this were limited. As a learnt lesson, further attempts to assess the launching of new practices should consider allocating more time and resources to this pre-warming activity.

Overall, the transferability assessment and the validation were very successful: they enabled the development of new ideas, the identification of new challenges and they made the still untapped potential of Argentina’s rail network more recognizable.

**RFF’s perspective**

Concerning the initiatives of the ENABLE project in gathering information about barriers of the multimodal and international transport, in promoting debates between Latin America operators and presenting them the best practices of European transportation as a means of overcoming the existing obstacles, in the general opinion of the operators and technicians who worked for the RFF, the experience was considered of great value and should be continued.

Nonetheless, given all the transferability barriers and weaknesses that were previously mentioned, it is necessary to further support the European studies with the Latin America’s participation so that the difficulties and differences are better understood and thus the cooperation and exchange of experience can be more effective and provide more benefits.
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