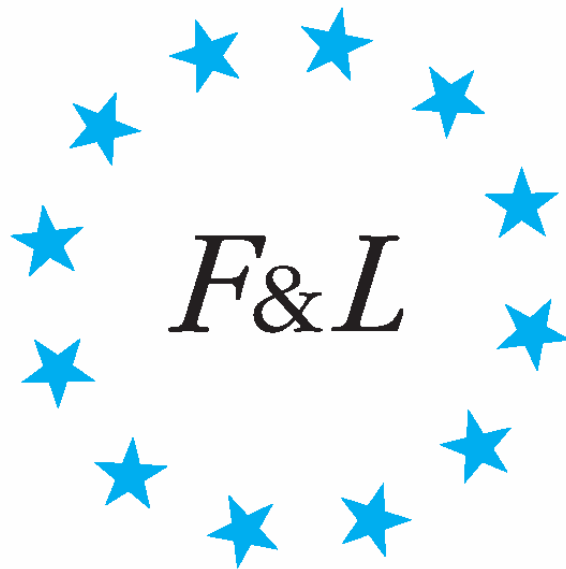


EUROPEAN FREIGHT & LOGISTICS LEADERS CLUB

MOTORWAYS OF THE SEA

WORKGROUP OF THE EUROPEAN
FREIGHT & LOGISTICS
LEADERS FORUM



VIENNA, 17TH NOVEMBER 2005

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1 INTRODUCTION

1.1 DEFINITION OF SHORTSEA SHIPPING

According to the European Commission:

Shortsea shipping means the movement of cargo and passengers by sea between ports situated in geographical Europe or between those ports and ports situated in non European countries having a coastline on the enclosed seas bordering Europe.

Shortsea shipping includes domestic and international maritime transport, including feeder services, along the coast, to and from the islands, rivers and lakes. The concept of shortsea shipping also extends to maritime transport between the Member States of the Union and Norway and Iceland and other States on the Baltic Sea, the Black Sea and the Mediterranean.



Source: Shortsea Promotion Centre Holland

1.2 FEEDER VERSUS INTRA EUROPEAN TRAFFIC IN CONTAINERS

1.2.1 CRITERIA FOR FEEDERING

Feederling is done for pre- or after-carriage of intercontinental cargo, which is loaded or discharged by deep-sea vessels.

- Quay-quay operation
- Customer is deep-sea carrier
- Schedule follows deep-sea carrier
- Vessel calls deep-sea terminal
- Limited customer base
- Easy market entry
- Intercontinental cargo

1.2.2 CRITERIA FOR INTRA-EUROPEAN TRANSPORT

Cargo coming from a part of Europe, which has to go to another part of Europe, is called intra-European. In that respect, intercontinental cargo can become intra-European.

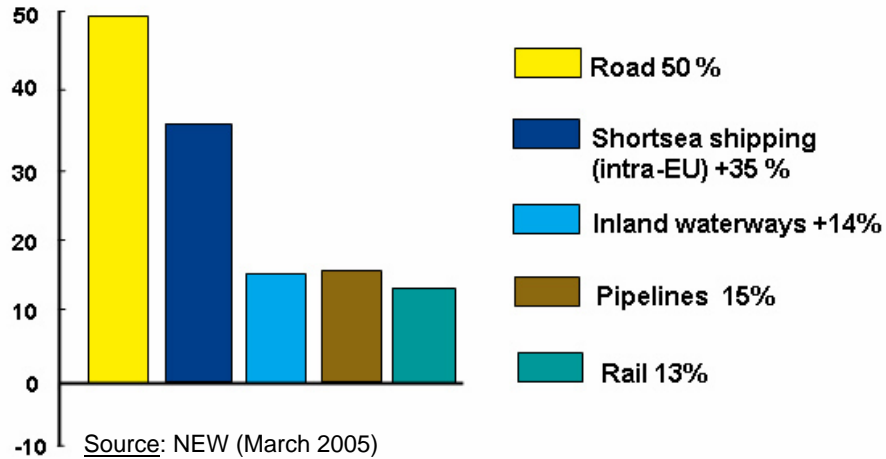
- Intermodal door to door transport
- Customers, shippers and forwarders
- Schedule according to market demand
- Special shortsea terminals or smaller ports
- Extensive customer base
- Intra European cargo
- Difficult market entry

Despite the fact that other markets are mentioned in the report as well, **the scope of this project was limited to unitised cargo based upon intra European transport only!** Furthermore **the project has emphasised on the interest of the F&L Members (European Freight & Logistics Leaders Forum).**

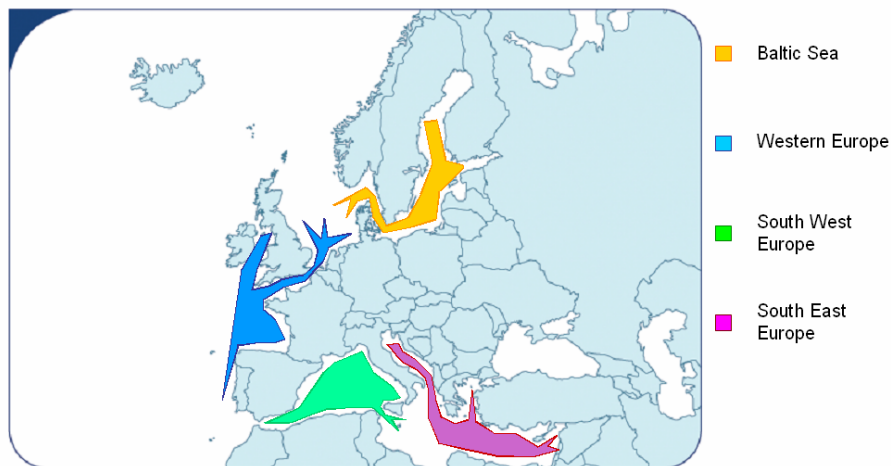
2 PREAMBLE - THE MARKET WILL DECIDE

Within the next 10 years (2005- 2015) growth in European transport is estimated to reach 33%. (NEA March, 2005).

Road transport will absorb 50% of this growth, knowing that congestion on the road will increase dramatically. The need to stimulate, motivate and develop alternatives like Shortsea Shipping is essential.



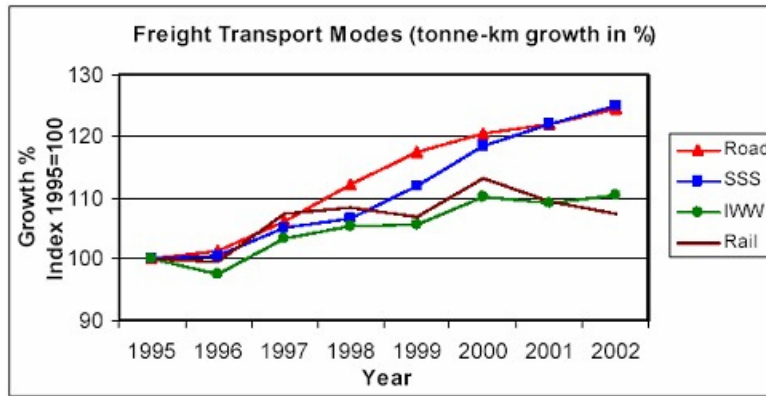
DG Tren of the EU has decided to create Motorways of the Sea to improve international transport routed via sea-infrastructure. Four corridors have been nominated to establish special emphasis with the goal of enhancing Shortsea Shipping.



Source: European Commission / Intermodal transport

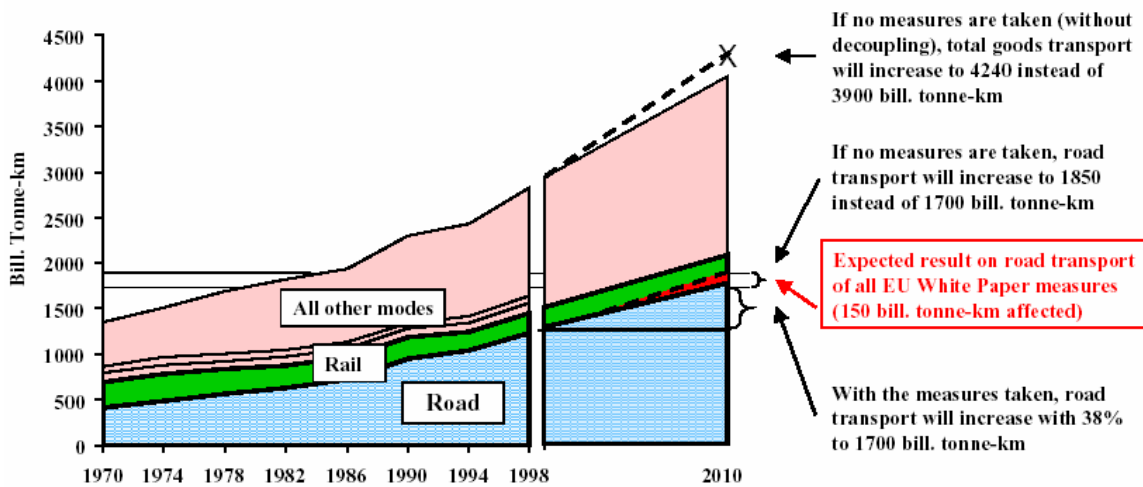
Furthermore the EU has decided to set quality standards in identifying and enabling the market to measure the sustainability of Shortsea.

Since 1995, shortsea and road transport have experienced the biggest growth with over 20%. However rail, an important actor in the multimodal transport chain has been stagnating.



Source: Shortsea Promotion Centre Holland

Goods transport development in EU 15 1970-2010, billion tonne-km, according to the White Paper



Source: European Union White Paper

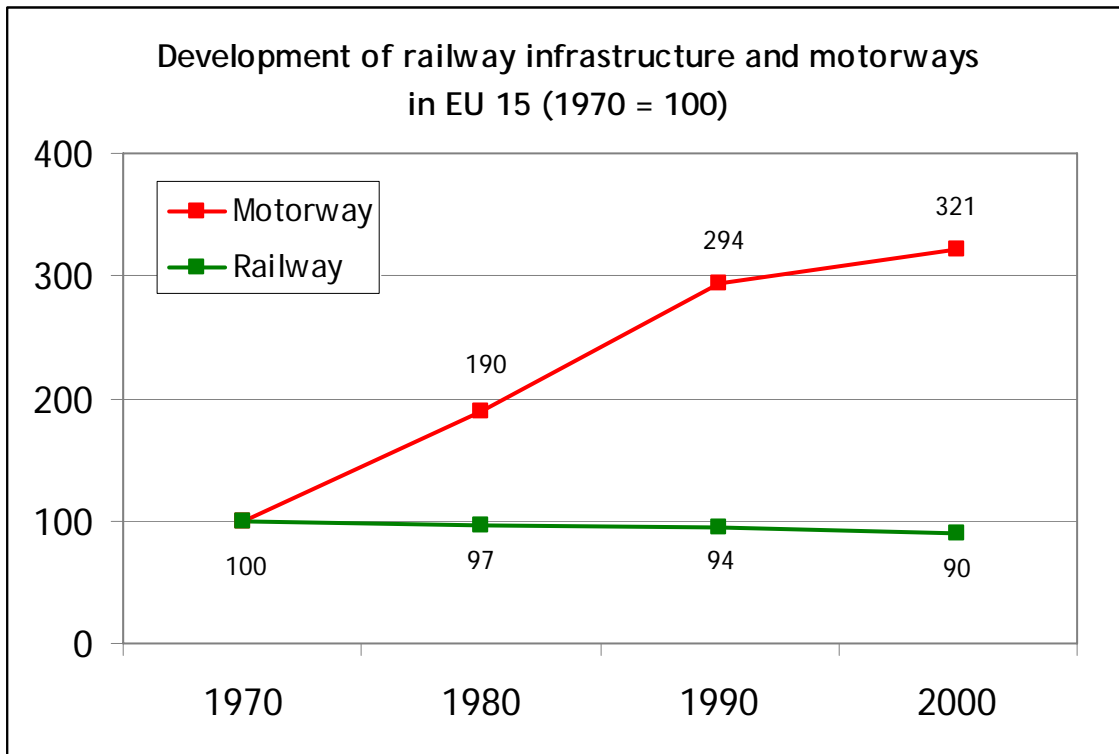
Despite a lot of efforts from the EU, Shippers and LSP's (Logistics Service Provider) to improve the European rail scene since 1991 the results are still poor. Improvements in issues like customer focus, service reliability and competitive pricing are still lagging behind. Other issues are the amount of terminals and rail infrastructure.

Technical barriers to trade and to interoperability - the ability of trains to run on any section of the network - are continuing to hamstring competitiveness in the railway industry. Today, for example, there are more than twenty signalling and speed control systems operating at the same time in Europe. A freight train from Holland to France has to be equipped with seven different signalling and speed control systems, entailing extra cost and increased breakdown risk and rendering drivers' jobs more complicated as they have to familiarise themselves with each system.

These technical barriers are hampering the development of rail transport at the European level, while road transport is free to develop without such barriers.

Quick quality improvements are achievable as long as real competition in the railway market is instaurated as it has been in other market sectors. Unobstructed access to existing infrastructure for (real) independent third parties is one of the answer to the problem.

As long as rail remains a social/political issue, improvements are expected to be modest.

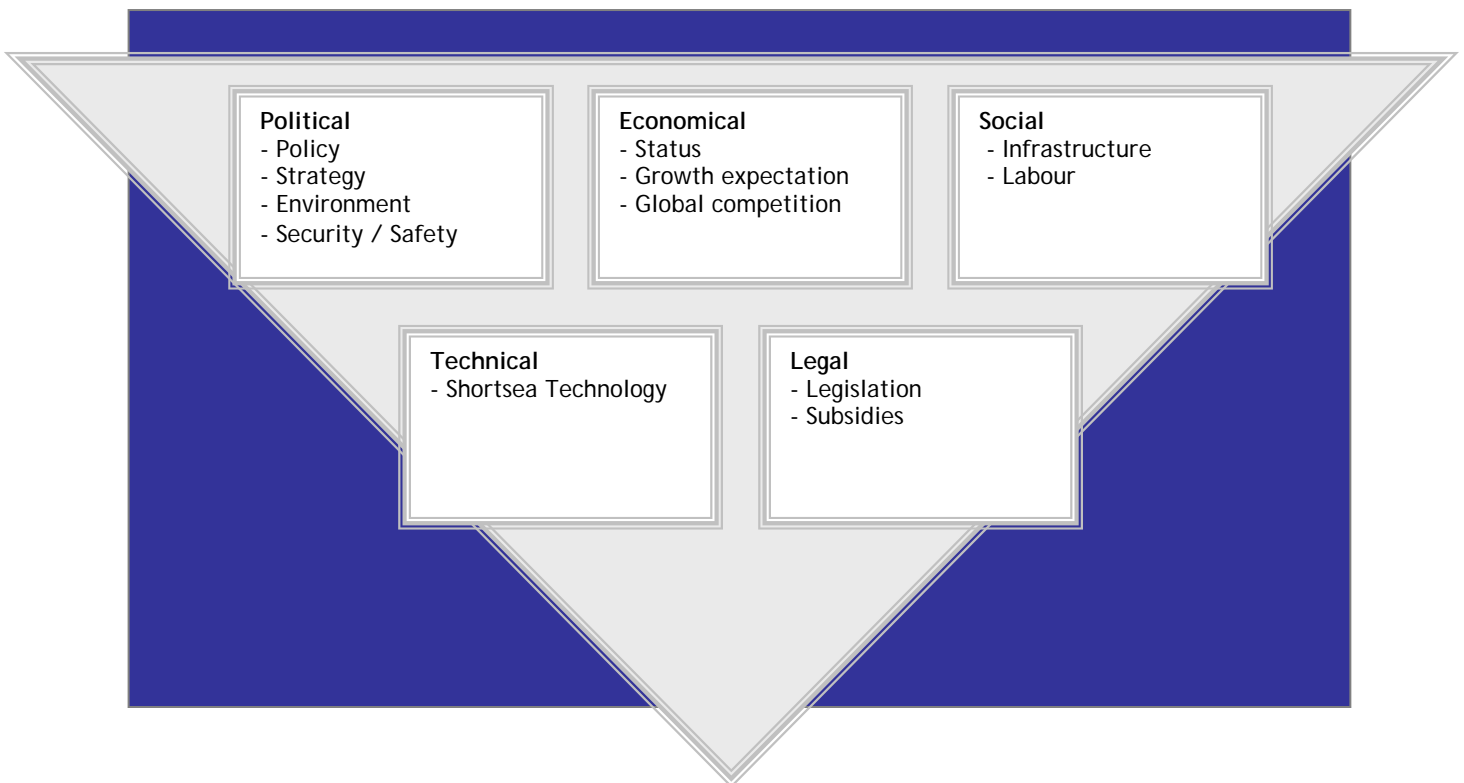


Source: COMMUNITY OF EUROPEAN RAILWAY AND INFRASTRUCTURE COMPANIES
Update Report on the CER-UIC-CIT - September 2005

If other modalities do not develop quickly enough road traffic will increase to an absolute unacceptable level, where congestion and delays will be the norm leading to unreliable, unpredictable and very expensive transport of goods.

This report will inform and support the F&L members in getting to know the EU policy with respect to Shortsea shipping and to assist them in the decision making process using or developing the shortsea modes within their own scope of business.

In order to find the most important developments in the coming years influencing the transport market in general and the Shortsea Shipping in particular the PESTL (Political, Economic, Social, Technical, Legal analysis) model has been used. Details of the undertaken PESTL analysis can be found in appendix 1.



The **Shippers** as well as the **Shortsea Operators** will give their view on the use of the Shortsea modality including the development of a standardised Intermodal Loading Unit. Finally this report will end with some recommendations and 2 examples of best practises in using shortsea shipping.

The successful best practise developed by Ewals Cargo Care for road-rail will also be described.

With respect to the future success of Shortsea shipping the following can be said: In the end the Shippers together with their Logistic Service Providers will decide how to organize their supply chain.

'The market will decide'

We trust this report will be of any benefit to you.

On behalf the workgroup *Motorways of the Sea*:

| | |
|---------------------|--------------------------------------|
| Mr. Stefan Horndal | Stora/Enso |
| Mr. Frank Otten | Royal DSM |
| Mr. Max Marnet | Hoyer GMBH |
| Mr. Filip Beckers | Masterfoods B.V. |
| Mr. Simo Airas | Finnlines |
| Mr. Eerik Yrola | ESF |
| Mr. J. van der Kar | Ewals Cargo Care |
| Mr. Gerard de Groot | Geest North Sea Line B.V. (Chairman) |

Following events have been attended by the group:

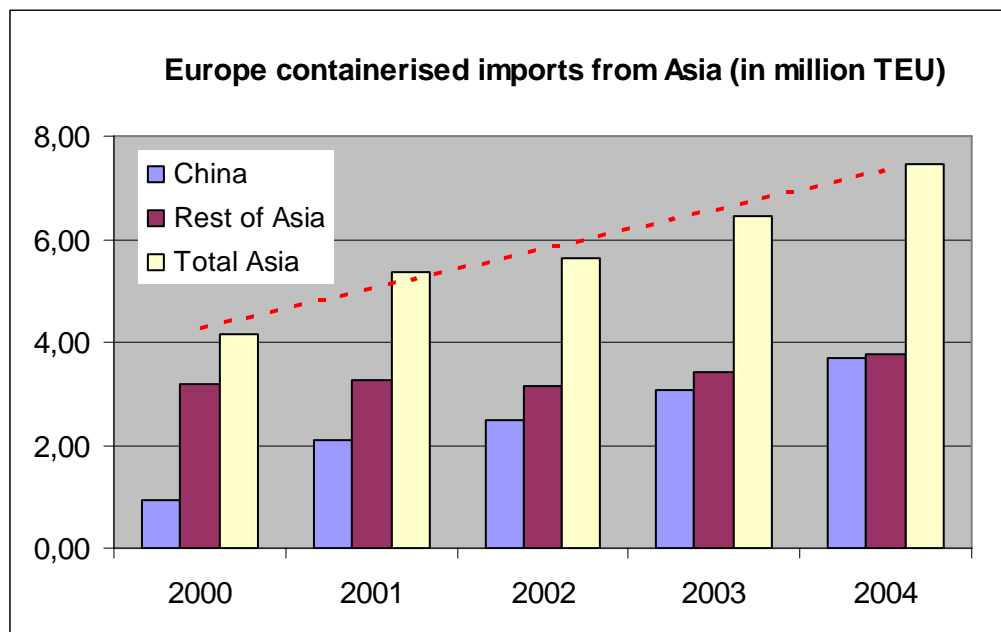
- Marco Polo session, 1 November 2004, Brussels
- DG Tren, 13 December 2004, Brussels
- A delegation of DG Tren visited November 2004 the Port of Rotterdam and a presentation was made by a delegation of the Working Group of the E.I.L.U.
- The Chairman of WG attended ESPO conference in Malta
- Shortsea Shipping was promoted via a Dutch TV program
- During the Dutch presidency of the EU, the ministers of the EU countries visited in the summer of 2004 the Shortsea Terminal in Rotterdam
- Five group sessions were held in Rotterdam (3x), Brussels and Glasgow apart from separate sessions amongst members
- As a result of Motorways of the Sea, the Port of Rotterdam started a visibility study to promote Shortsea shipping

Special thanks to Sander van't Verlaat Bureau Voorlichting Shortsea Shipping in Rotterdam, Menno Mooij Project Manager Shortsea Port of Rotterdam and to Mr. Frank Otten for his outstanding support and contribution to this document.

3 EXECUTIVE SUMMARY

3.1 GENERAL TRENDS

- The supply driven economy is changing into demand driven economy.
- Within the next 10 years (2005- 2015) growth in European transport is estimated to reach 33%.
- It is to be expected that longer distances will be covered by cargo as production facilities are moving more and more to the eastern part (new member states) of the EU.
- More cargo (containers) will be imported from Asian countries (especially China). Total Asian exports are indeed estimated to reach 48 million TEU by 2007 (against 7,5 in 2004).



Source: Motorways of the Sea and Shortsea conference – Strasbourg – July 2005

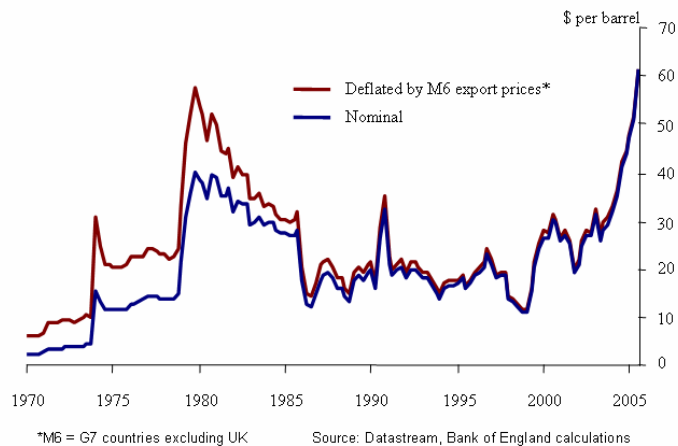
- Terminal congestion will increase due to the “boom” of the Asian trade
- Eastern European drivers/companies are increasing their market share within the European transport market
- The EU will stimulate other than road transport modes (e.g. Marco Polo)

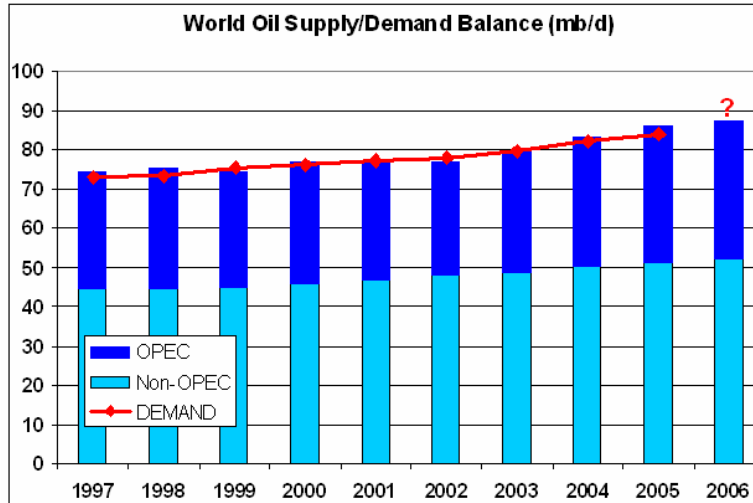
3.2 IMPORTANT TRENDS FOR SHORTSEA SHIPPING DEVELOPMENT

3.2.1 POSITIVE TRENDS

- Road tolls are introduced and will become more common within the EU.
- Increased road traffic is increasing congestion problems due to the limitations to extend the ever growing road network.
- Barges and rail are used more and more to support the supply chain to transport containers from the hinterland to the sea ports making them available for shortsea.
- Fuel costs are increasing to high levels.
- Shortsea has the lowest tonne-kilometres costs.

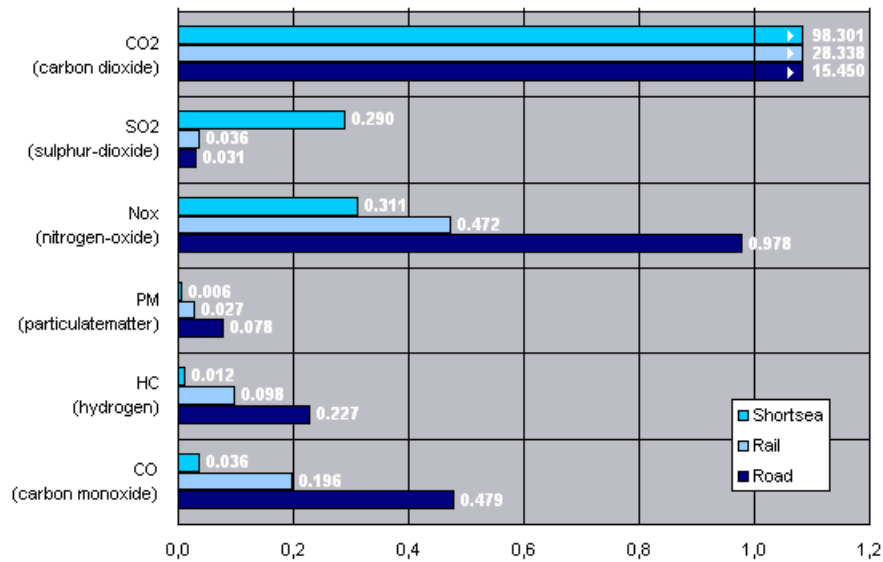
Oil prices – real and nominal





Source: www.platts.com (2005)

- Shortsea Shipping is the most environmental friendly transport mode per tonne-kilometre despite high output of CO₂.



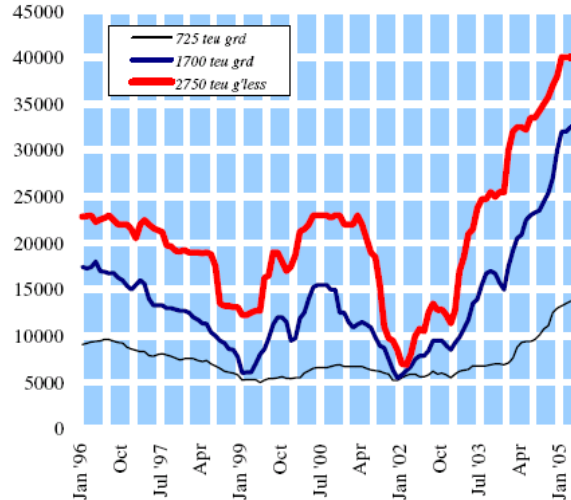
Source: Shortsea Promotion Centre The Netherlands www.shortsea.nl

- Longer distances to carry cargo make multimodal transport more cost effective.
- Development of unitized equipment geared to shortsea shipping.
- ISPS is supporting the security of cargo being shipped via Shortsea Shipping.
- EU policy to improve a modal shift to Shortsea Shipping.
- Building of ships that are faster, larger and more economical for use in the shortsea trade.

- Awareness of stakeholders that a modal shift is necessary.

3.2.2 NEGATIVE TRENDS

Due to increased demand on ships for deep sea container transport Motorways of the Sea may experience a negative impact on the charter of ships in the coming years. The demand is mainly the result of a booming market (China). European feeder volume is growing because of the growth of bigger (mother) container vessels, which only calls on particular main ports.



Container ships Time Charter Rates (USD / day)
Source: Clarkson Research Studies

- Security has a downside cost effect on Shortsea Shipping. ISPS in ports has become a competitive edge whereby hardly any transparency to customers or users of the ports have been given.
- EU policy is intended to stimulate shortsea shipping. However many directives are cost increasing and bureaucratic not favouring shortsea development.
- Port package is likely not be accepted leading to cost increases.
- Waste management; charging for it not liberalised.
- Turnaround delays, use of separate pilots, infrastructure constraints and non-transparent charges in some ports are problems that need to be addressed. Ports should operate on a commercial basis in a liberalised environment and offer the required service levels to all users.
- Cheap haulage from Eastern European countries.
- Protectionism of certain haulage industry (Spain).

4 SHIPPERS VIEW ON SHORTSEA SHIPPING

4.1 INTRODUCTION

Within the industry sectors the focus on logistics and supply chain management processes has increased/improved during recent years. The standard sequence of primary business processes: 'to Source-Manufacture- to Sell "has been expanded with a fourth process: 'to Deliver'.

Reasons for this increased focus are:

- Increased customer focus and segmentation led to a new definition of offered logistic services and their related costs.
- Awareness at Management level that logistics costs are a substantial part of total costs and these processes were not managed well in the company.
- Awareness at (Marketing & Sales) Management level that transport is not any more abundantly available at any moment at low cost.
- Increased competition led to intensified cost focus and cost reduction programs.
- Increased traffic congestion led to "Just in Time" delivery problems.

Due to these developments industry started focusing on Total Cost of Ownership concepts (optimising over all links in the supply-demand chain).

As part of this horizontal process optimisation over the vertical (silo) disciplines the search for alternative transport possibilities started. More and more intermodal alternatives were developed. Shortsea Shipping can take a prominent place in this search.

Another important development is the global containerisation leading to the use of containers as 'storage and transport' unit. This in turn leads to an increase in building of bigger and bigger maritime- and shortsea ships, building of a variety of sizes of inland waterways barges, growing amount of bigger receiving terminals for maritime ships and inland container terminals. Shortsea shipping must benefit from this increased available infrastructure "tailor made" for this transport modality.

4.2 GENERAL VIEW OF THE SUPPLY CHAIN

A research executed by Accenture in co-operation with Insead and Stanford University amongst 636 companies shows the following development in the supply chain:

- Important objectives
 - improve customer service response
 - improve transit-time
 - cost effectiveness
- Important instruments
 - supply chain planning
 - relationship with suppliers and customers

4.3 CHARACTERISTICS VARIOUS SUPPLY CHAINS

| | Focus on costs | Focus on speed |
|--------------|--|--------------------------------------|
| Objectives | Reliability against lowest costs | Fast responsiveness |
| Capacity | Maximum utilisation Push focused | Sufficient capacity Pull focused |
| Supplies | Minimum supply in chain | Supply by information |
| Transit time | Reduce if lower costs are | Improve if achieved |
| Cooperation | Through reliability, costs and quality | Through flexibility, speed and costs |
| Organisation | Central | De-central |

Total supply chain management is focus on all aspects instead of looking at issues in isolation.

4.4 BEST PRACTICES

In chapter 7 are described the three real live best practices from shippers shifting to shortsea shipping in order to optimise their supply chain.

Masterfoods started using 45ft containers for their temperature controlled cargo to shift successfully from road to shortsea shipping .

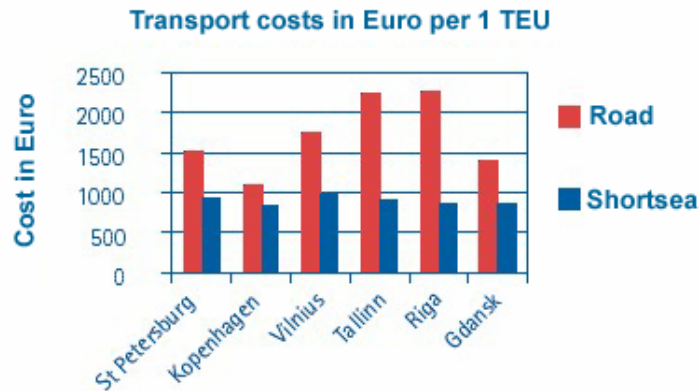
Stora Enso decided to shift their cargo from the traditional road operation to dedicated mavi's that can carry 80 tons on a terminal/terminal (port/port) operation.

Ewals Cargo successfully redesigned a road-rail intermodal shuttle from Belgium to Italy. They changed National Railway Companies for private companies leading to the desired customer satisfaction which could not be achieved via the Nationals.

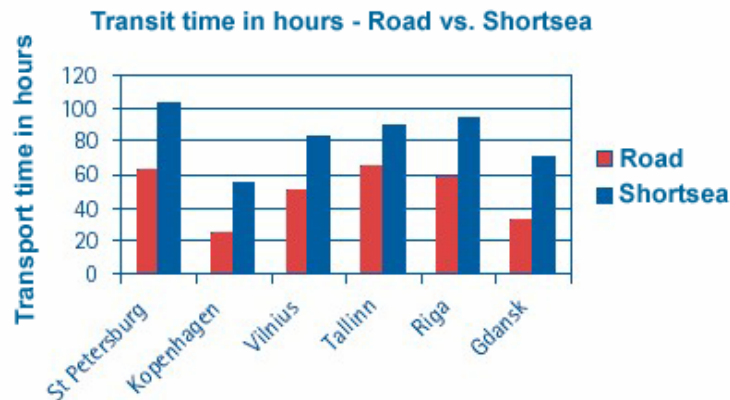
5 SHORTSEA OPERATORS VIEW ON SHORTSEA SHIPPING

5.1 HOW TO BE OR TO BECOME COMPETITIVE TO ROAD

Shortsea can be very competitive to road when it takes its advantages. As stated before road congestion will increase. Shortsea's flexibility, multimodality, reliability, and cost effectiveness proves that shortsea shipping can be very competitive to road as well as being complementary to it.



Source: Dutch Ministry of Transport - Shortsea, MAUT and Baltics, 2003



Source: Dutch Ministry of Transport - Shortsea, MAUT and Baltics, 2003

Barging containers from Holland to Germany rail them to Scandinavia and route them back via shortsea shipping into the UK or back to the Continent is an example of very cost effective way of organizing Intra European transport.

The Shortsea Promotion Centres do have a task to change the image of (unitised) shortsea traffic. It is absolutely not an old fashioned way of transporting goods especially in view of the development that we have seen within shortsea equipment.

Same applies to bulk/tank transport. Nowadays transit times and evaluation of equipment is such a standard that it can compete to all other modes of transport.

Shortsea shipping must be seen in the light of extension of various other modes that are vital in the transport chain. Decisions have to be taken by shippers and logistic providers how to operate their supply chain. Shortsea shipping can play a vital role in this (see chapter best practises)

5.2 WHICH BARRIERS TO TAKE / TO OVERCOME

| | |
|--|--|
| <p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> - cost effectiveness - reliable - fixed sailings - large, flexible capacity - floating stock | <p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> - more awareness for the environment - more traffic jams on main int. roads - Improvement of intermodal transport - more attention and active promotion in other European countries |
| <p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> - slower - administrative constrains - internal logistics - more bottlenecks to overcome | <p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> - truck is becoming more environmentally friendly - road transport taken over by companies in "low wage" countries - procedures (in ports) and level of costs in shortsea chain |

5.3 HOW TO PROMOTE SHORTSEA SHIPPING TO SHIPPERS

- As a credible, sustainable and safe part of the European transport system, that is well integrated in the transport chain for example by inland waterway or rail connections
- In order to reduce congestion, enhance modal shift from road to shortsea shipping and/or improve connections with peripheral and insular areas.
- Reduce administrative problems that hinder the development of shortsea shipping as much as possible without compromising safety and security, especially those procedures that disturb the logistical process and create a disadvantage in competing with road transport. Procedures should be simplified and facilitated in particular with full use of the possibility of electronic reporting.

- Develop high quality shortsea corridors between European Member States with full participation of all interested parties, public and/or private. Where appropriate use could be made of the instruments recently set up by the European Union, particularly the TEN and the Marco Polo programme.
- Stakeholders (private/public) should become even more aware of the cost effectiveness of Shortsea shipping.
- Create an environment whereby stakeholders bundle sufficient intra-european door-door volume to develop the necessary network that has frequency and reliability to compete with road.
- Making use of more multimodal modes of transport for pre - and on-carriage
- In actual practise the above means that all areas should be looked at where shortsea shipping can be introduced, developed or increased.
- Implementation of standardised Service Performance Indicators (see appendix 2)

Stakeholders in the supply chain either public and/or private do play their own role in developing shortsea shipping. Issues like ISPS should be tackled as far as the cost is concerned. Monopolies in ports/terminals/haulage should be diminished as opportunities will pass.

5.4 SERVICE PERFORMANCE INDICATORS FOR SHORTSEA OPERATIONS

In 2001 a project group was installed to set up Service Performance Indicators (SPI) for Shortsea Shipping. This group set up two pilots that unfortunately never got to implementation. One of the pilots was based on the route Rotterdam-Gothenburg.

The F&L workgroup Motorways of the Sea wants to revitalise this activity and re-install the objective.

Important objective is to obtain a quality standard for shortsea shipping that sets a number of important criteria ensuring the whole logistic chain is acting as agreed. When competing with road haulage, it is of vital importance that all modalities do realize that (good/bad) performance is a part of the success of the supply chain.

After delivery the producer and the customer will only look if the cargo was delivered on time without any damage(s). However, SPI's are needed to manage the activities leading to an on-time delivery.

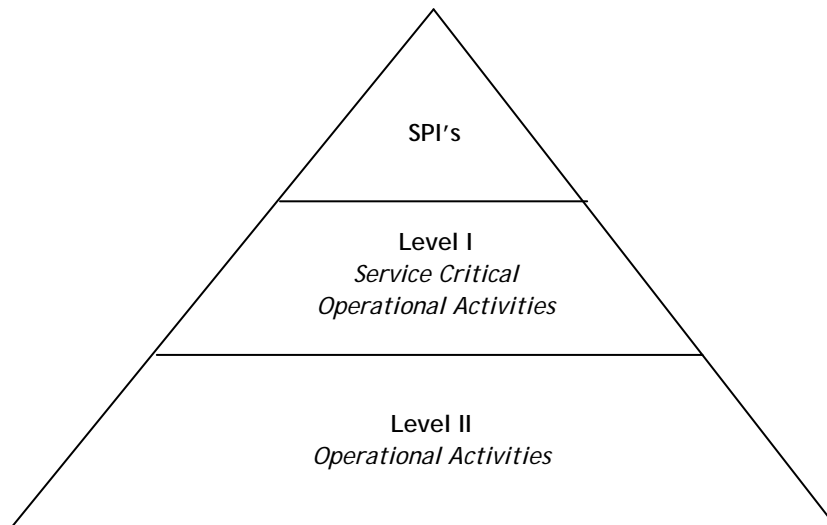
The project group delivered three outputs that play an important role in the shortsea supply chain:

- The Supply Chain Activity Map
- The Service Performance Indicators
- The Service Pyramid

Use of these and acceptance of their principles will give considerable comfort to current and, more importantly, potential users of shortsea shipping.

In order for the LSP to identify how their activities impact the service, the Activity Map and the SPI's have to be combined.

This is shown in the *Service Pyramid* diagram



The pyramid is used to illustrate the concept of hierarchy. At the top level are each of the individual Service Performance Indicators. This is what the shipper or customer expects to see as an outcome of the measure covered by the SPI.

Level I shows the critical activities from the 79 identified activities directly involved in a service failure.

Level II shows activities feeding Level I activities. A problem in Level II may not directly cause a service failure but will increase the chance of a critical Level I failure.

The Service Pyramid can be used *reactively* (track precisely what went wrong after occurrence of a service failure and take corrective actions) or *pro-actively* (directing best practices into the correct activities to ensure minimising chance of failure).

More details about the Service performance Indicators are in appendix 2.

5.5 EUROPEAN INTERMODAL LOADING UNIT (E.I.L.U.)

5.5.1 WHY?

One of the EU's main goals - as laid down in the European Commission's *White Paper, European transport policy for 2010: time to decide* - is to reduce congestion on Europe's overstretched road, and therefore reduce the harmful effects of transport on our environment.

5.5.2 HARMONISATION OF INTERMODAL EQUIPMENT

A variety of intermodal equipment is operated for intra European movements. The fleet consists of:

- Box containers
- Swap bodies
- Liquid bulk containers
- Dry Bulk containers
- Various dedicated, specialised containers and swap bodies
- Unitized Roll-On/Roll-Off equipment (Driver accompanied and unaccompanied units)

The above mentioned intermodal units have a wide range of dimensions in length, width and height and are, by and large, not in line with ISO standards and requirements. Inevitably too many different types of units have a negative impact on transportation costs and create the following problems:

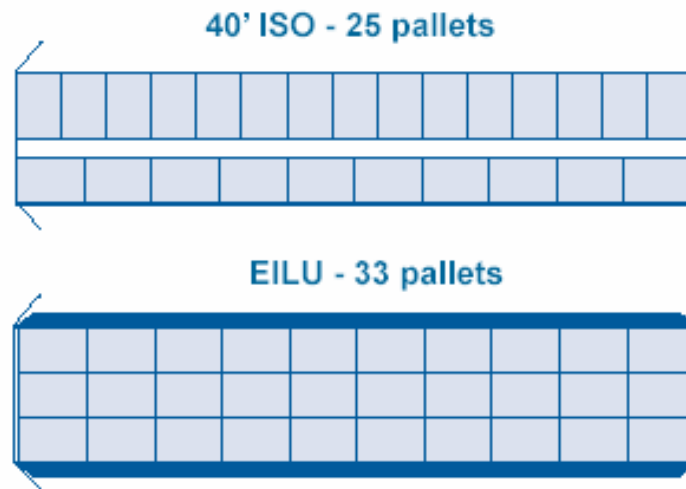
- Complexity of handling in terminals
- No common maintenance or inspection procedures
- No common identification system
- Different handling and bearing surfaces
- ISO containers sub-optimal for use on European roads
- Swap bodies are not stackable and can't resist horizontal forces in shortsea shipping

A natural consequence is the aim to maximize standardisation and harmonisation of units which move by road, rail, sea going vessels and barges. A wide use of the European Intermodal Loading Unit would lead to a reduction of transport costs by up

to 10% - depending on the commodities and the corridors concerned¹. However, at the end of the day, and as long as all legal parameters are kept, **the market will decide**.

5.6 WHO DICTATES WHAT?

The EU directive on a harmonised EILU is not mandatory and so the market has to decide. However the 45 ft container is by many authorities, advisory bodies like all promotional offices of shortsea shipping, associations like ESPO and the industry like European Shippers Council, adopted as one of the best pieces of equipment for unitised cargo as it is indeed comparable to road trailer operations, because of its multimodal use, barge/rail maritime and as it is stackable.



The multimodal usability of the EILU has a significant impact on reducing empty running. Furthermore it is more and more used as a floating stock system that gives the flexibility on demand.

Beside this, a development in Ro-Pax vessels is currently being observed within the EU. These multi-purpose vessels can accommodate (driver accompanied) trailers/trucks as well as containers. Especially within the Med. / Southern Europe we identify developments of this kind. Grimaldi's new service between Italy and Spain (Rome / Taragona) is an example in this sector. The fact that this company bought a stake in Finnlines shows their ambition to grow in the Baltics as well. Harmonisation in this way is a good development as equipment can be used to its full extent.




¹ « An overview of current activities», Brussels, September 2004. European Commission, Directorate General Transport and Energy

6 RECOMMENDATIONS

In summary, Motorways of the Sea is an interesting alternative of transporting cargo within Europe. Motorways of the Sea need to be competitive towards intra European road transport. It means that it needs to be dedicated, reliable, with frequent effective sailings whereby multimodal infrastructure is seamlessly connected to this mode of transport. Larger volumes are necessary to achieve a sustainable and frequent way of transporting goods as under-utilised ships are very expensive and can't operate in a profitable way.

However, each industry has to decide on the basis of their existing portfolio and required service levels if this alternative is applicable. In order to successfully implement shortsea shipping the various stakeholders should team-up.

Following stakeholders could play a role in this:

| Stakeholders | Steps |
|--|--|
| <ul style="list-style-type: none">▪ Shippers▪ Intermodal operators▪ terminal operators▪ transport operators▪ ships operators▪ port operators▪ shortsea operators▪ governmental bodies | <p data-bbox="964 825 1130 856">Strategically</p> <p data-bbox="1027 884 1084 953"></p> <p data-bbox="964 982 1143 1014">Operationally</p> <p data-bbox="1027 1050 1084 1119"></p> <p data-bbox="932 1148 1175 1180">Decide on partners</p> <p data-bbox="1027 1215 1084 1285"></p> <p data-bbox="948 1314 1192 1346">Apply for subsidies</p> |

The Port of Rotterdam has taken an initiative and has used the platform of Motorways of the Sea within the F&L.

A visibility study will be done by the various stakeholders who have shown an interest.

7 BEST PRACTICES

7.1 EWALS CARGO CARE: DEVELOPING THE GENK - NOVARA SERVICE

Ewals Cargo Care, founded in 1906, is a major European provider of logistics services. Ewals has 45 branches in 13 European countries, over 4,000 trailers and intermodal units, 1,300 staff members and over 350,000 m² of warehousing.

Ewals has about 500,000 transport consignments per year of which about 10% go intermodal. Half of this intermodal traffic is between Benelux and Italy. For about ten years Ewals was as customer of the intermodal transport operators for this business, but in 2004 Ewals decided radically to reorganise their intermodal transport. Ewals was confronted with a decline in the punctuality of the services existing at the time and customers were no longer willing to accept intermodal solutions under such conditions. However, Ewals was convinced that intermodal transport solutions could be feasible but was also aware that in order to keep customers a radical reform was a 'must'.

Time was on Ewals' side, because by then Ewals could harvest the fruits of railway liberalisation. Ewals involved the Belgian private railway company DLC, the Swiss BLS and Italian FNC in setting up an own intermodal transport service between Genk in Belgium and Novara in Italy. By doing so, Ewals reduced the number of players in the intermodal transport chain and increased overall control. The new service also made Ewals less dependent on other intermodal transport operators. Ewals signed service level agreements with the Harbour Genk and Novara Broschetto, both neutral private organisations, and rented wagons from the private sector. With these measures Ewals succeeded in restoring service punctuality to acceptable levels.

Ewals' mixed portfolio makes his intermodal rail service particularly attractive. In southbound transport Ewals combines lightweight cargoes with heavy steel products, in the northbound direction with heavy building materials. If the train were to be filled with only heavy goods, its maximum length would be less than 400 metres because of weight constraints. By mixing heavy and lightweight cargoes Ewals is fully able to utilise the maximum 1,600 tonne train weights and 600 metre lengths. Ewals use the 100 m³ Mega-swaps, developed by Ewals, for lightweight cargo and 30' swap bodies for heavy goods. This also enables Ewals to exploit the wagon length in full.

An additional advantage of concentrating traffic at these two terminals is that road collection and delivery services are less fragmented, which saves a large number of empty driving.

7.2 STORA ENSO

The Best Practice document produced by Stora Enso is available on the CD Rom "MOTORWAYS OF THE SEA - WORKGROUP OF THE EUROPEAN - FREIGHT & LOGISTICS LEADERS FORUM - Vienna, 17th November 2005" as well as on:

<http://www.europeanfreight.org/>

7.3 MASTERFOODS

The Best Practice document produced by Masterfoods will be available on the webpage of THE EUROPEAN - FREIGHT & LOGISTICS LEADERS FORUM:

<http://www.europeanfreight.org/>

8 APPENDIXES

8.1 APPENDIX 1 - DETAILS OF THE PESTL ANALYSIS

8.1.1 POLITICAL

8.1.1.1 Policy

Motorways of the Sea is initiated by the EU transport commission (Karel van Miert) responsible for Trans European Networks (TEN's) projects.

The Dutch Presidency of the EU adopted this theme 2nd half of 2004 to implement network of Shortsea links.

Furthermore the EU has decided to set quality standards in identifying and in enabling the market to measure the sustainability of Shortsea.

OVERVIEW POLITICAL STATEMENT

The Dynamic Choice Complementing the Sustainable Transport Chain

Shortsea Shipping is a successful mode of transport in Europe. For instance, in the 1990's it was the only mode that was able to keep pace with the growth of road transport. It has in fact started to outpace road transport. Shortsea Shipping is also an obvious choice to play a key role in reaching the objectives of the European Transport Policy. It can help curb the forecasted substantial increase in heavy goods vehicle traffic, rebalance the modal shares, bypass land bottlenecks, and it is safe and sustainable.

The European Commission has an active policy to promote Shortsea Shipping. In 1999 it presented a Communication with a comprehensive approach to increase the use of the mode. Furthermore, the recent European Commission White Paper on European Transport Policy for 2010 emphasized the role of Shortsea Shipping in maintaining an efficient transport system in Europe now and in the future.

Continuous political support from the Council, Member States and European Parliament is vital for Shortsea Shipping to capture its true market share. Such support was confirmed in the informal meeting of the European Union Transport Ministers that took place in May/June 2002 in Gijón (Spain) and was fully devoted to ways to promote Shortsea Shipping.

To make full use of Shortsea Shipping in Europe, it needs to be seamlessly integrated into logistics chains and offer door-to-door solutions to customers. Such logistics chains should be managed and commercialised by one-stop shops offering the customers a single contact point that takes responsibility for the whole intermodal chain. Further, the notion of competition between modes should be replaced by complementarity because co-operation between modes is vital in door-to-door chains involving more than one mode. This requires efforts from all parties but it is a clear win-win situation.

A number of obstacles still impede the further development of Shortsea Shipping.

First, many commercial players still view it, wrongly, as an old-fashioned mode of transport.

Second, full integration of Shortsea Shipping into door-to-door multi modality remains to be accomplished.

Third, the complexity of documentary and administrative procedures in Shortsea Shipping is a fact that needs to be examined and tackled.

Fourth, the efficiency of ports, port services and port-hinterland connections needs to be enhanced.

The Community is in the process of pursuing solutions to a number of these obstacles.

The Commission is convinced that co-ordinated efforts at all levels (Member States, regional, local, industry and Commission) will substantially help accelerate the growth of Shortsea Shipping, alleviate obstacles and allow Shortsea Shipping to become a true success story of the 21st century.

8.1.1.2 Strategy

According to the Commission Motorways of the Sea should be an integrated intermodal option based on Shortsea shipping transport, providing frequent and high quality alternatives to road transport, which suffers from congestion and delays and causes environmental degradation and accidents. The goal is a network of motorways of the sea, linking the regions of Europe through intermodal maritime options.

Four corridors have been defined as part of priority project on which Motorways of the Sea projects can be set up:

Motorway of the Baltic Sea (linking the Baltic Sea Member States with Member States in Central and Western Europe, including the route through the North Sea/Baltic Sea Canal) by 2010;

Motorway of the Sea of Western Europe (leading from Portugal and Spain via the Atlantic Arc to the North Sea and the Irish Sea) by 2010;

Motorway of the Sea of south-east Europe (connecting the Adriatic Sea to the Ionian Sea and the Eastern Mediterranean, including Cyprus) by 2010;

Motorways of the Sea of south-west Europe (western Mediterranean, connecting Spain, France, Italy and including Malta and linking with the Motorway of the Sea of south-east Europe and including links to the Black Sea) by 2010.

Implementation of the concept is based on three key elements:

- Making choices; The Members States within the Community have to select ports, corridors and services. Selectivity is essential to reach concentration of flows necessary to sustain frequent high-volume, high-quality services and produce noticeable and beneficial effects on our transport system.
- Commitment of all supply chain parties involved; Motorways of the Sea projects will have to be proposed and executed by public and private parties alike, infrastructure managers and infrastructure users.
- Ensuring quality of services; in order to provide a real transport solution to industrial users especially for those who only think on road freight transport Motorways of the Sea need to focus to provide the best available quality. Project proposals will need to address the quality issues of the whole chain.

The idea of Motorway of the Sea generates widespread interest and support. However, in the marketplace there are many different views on how they should be implemented. A major concern is how to avoid possible distortions of competition. Another challenge is the reconciliation of supply-oriented and strategic planning of infrastructures with demand-oriented provision of logistics services in a competitive environment.

8.1.1.3 Environment

EU policy is to reduce pollution in general. Within road transport the tendency is to become more cleaner due to the introduction of stringent EU standards (50 and 10 ppm sulphur, and Euro IV and V). Shortsea Shipping will have to adhere to new legislation to keep pace with road transport.

Ships have become the single biggest source of SO₂ in the EU (see Table) because the maritime sector has lagged behind land-based industry in environmental improvement. Today's agreement will reduce ship SO₂ in the EU by over 500,000 tonnes a year from 2006.

Marine fuel currently contains on average 2.7%, or 27,000 parts per million (ppm), of sulphur, compared with petrol for cars, which will have 10 ppm sulphur content from 2007. As part of its ship emissions strategy, the Commission presented in November 2002 a proposal to reduce the sulphur content of marine fuels. The main provisions finalised today are:

- a 1.5% sulphur limit for fuels used by all ships in the Baltic Sea, from 19 May 2006, and the North Sea & Channel, from autumn 2007;
- the same 1.5% sulphur limit for fuels used by passenger vessels on regular services between EU ports, from 19 May 2006;
- a 0.1 % sulphur limit on fuel used by inland vessels and by seagoing ships at berth in EU ports by 2008

It is expected that the EU will introduce even more stringent rules for NOx emissions by the end of 2006 to narrow the gap with road transport.

See www.europa.eu.int/comm/environment/air/transport.htm or for info www.env-ships@cec.eu.int

Due to these developments and emission calculations per tonne-kilometre Motorways of the Sea in combination with multimodal transport is **and will be the best option from an environmental point a view.**

Many companies within the industry (shippers and logistic providers) do have an environmental policy nowadays. In view of the Kyoto contract environment will get a higher priority on the agenda.

8.1.1.4 Security

Europe has a strategic maritime interest. Europe is surrounded by four seas: the Mediterranean, the North Sea, the Baltic Sea and the Black Sea; and by two oceans: the Atlantic and the Arctic oceans. The new Europe of 25 Member States has a coastline of 70,000 kilometres, several times longer than that of the USA and of Russia. Almost half of the European population lives within 50 kilometres of the coast, some of which come from the islands surrounding mainland Europe such as the island nation states of Malta, Cyprus, Ireland and the UK. Europe's geographical reality means that over two thirds of the Union's external borders lie along the coast and maritime spaces under the jurisdiction of the Union's Member States amount to an area far greater than their terrestrial territory.

These are impressive figures and the reality is often underestimated. However an appreciation of these facts is key to understanding Europe's strong links to the sea.

This means that all these coasts, ports and terminals must be secured to limit attacks from terrorism or any other violence.

Although appreciating the above it should not have a negative effect on the image and usage of Shortsea shipping.

8.1.1.5 Safety

Shortsea shipping is proven to be a very safe mode of transport as only 1% of all accidents in Europe concern shortsea shipping. This statement was made by Mr. Trestour member of DG Tren done during a presentation made in Oct 2005 in Cherbourg.

Strict regulations, education of crew, main ship sailing under European flag help and support this figure.

Consequently, this means that shortsea shipping is one the safest transport mode.

8.1.2 ECONOMICAL

8.1.2.1 Status European economy

The economy in general within the EU is still in a bad shape. Since July 2004 ten new member states have joined the EU. Their economy is relatively small and needs to be developed in the coming years. Their growth can only be accommodated if infrastructure will grow with it as well.

It is the objective of the EU to become the most dynamic economy (trade-zone) of the world.

Intra-EU trade has always represented more than 50% of the EU's total trade. At present it is around 60%, meaning that despite the globalisation trend intra-European trade is becoming even more significant.

8.1.2.2 Expected growth 2005-2015

GDP growth rates in the core of the EU are expected to reach between 1 and 2.5% in the coming years. Greece and Ireland are among the fastest growers in the EU-15. Economic development in Central and Eastern Europe is expected to grow significantly in the future, with forecasted annual GDP growth of 4% to 4.8% until 2009 (European Commission, 2001). At this rate more advanced countries such as the Czech Republic could reach the GDP per capita level of low-income European Union countries in 15 years.

With the recent enlargement of the European Union with 10 new members states (mostly CEECs), trade flows are expected to increase even further. The enlargement means a 20% rise in population (an additional 75 million citizens - Eurostat figures), while adding only 5% (EUR 500 billion) to the Union's real GDP. The economic gap is substantial: GDP per capita of the new member states is less than a quarter of the EU average. It goes without saying that large differences also exist among the new member states.

As a consequence of the above the Dutch based economical organisation NEA reported in March 2005 that transport growth within the next 10 years will increase with over 30%, of which the transport of metals and chemicals will have increased with over 50%.

The European Chemical Industry Council (Cefic) conducted a study in 2004 called "Horizon 2015: Perspectives for the European Chemical Industry" (see www.cefic.be). The study shows a possible economic weakening of Europe in comparison to other continents. If this will occur, meaning less new builds or extensions of existing facilities in Europe, the needed chemicals have to be imported leading to even more transport.

Transport within Eastern Europe will more than double and between Western and Eastern Europe will growth with around 44%

Although rail transport will increase (13%) in view of total of total growth it will only account for 2%. Barge and shortsea have possibilities to grow due to available infra structure, but road transport will grow largest

Based on the above the industry has to decide in which way they want to transport their goods in the near future. It is obvious that Shortsea Shipping will play a major role in this.

Low cost investment in Shortsea Shipping in comparison to e.g. road investments.

8.1.2.3 Global competition

The EU has drawn up the Lisbon reform agenda. This agenda says that the EU should be in 2010 the most dynamic trade zone in the world. A lot needs to be done if the EU wants to achieve this. Most probably this will not happen and as a consequence more pressure will arise at existing Intermodal infrastructure (port, terminal, railway) with the inflow of the cargo coming from outside of the EU.

World trade shows a steady increase. Significant modifications have taken place in international trading flows. The triad regions (Asia, Europe and North America) remain by far the most important trading blocks. Mexico, China and East Asian Economies have increased their relative importance considerably. The USA remains the most important trading partner of the EU. China has overtaken Japan to become the most important Asian trading partner. The China effect is felt in most European economics sectors, in particular in the port and maritime industry. Significant trade imbalances (based on values) continue to exist with most leading trading partners.

As a result international supply chains have become complex and the pressure on the logistics industry is increasing. In 2001 logistics costs amounted to 9.6% of sales. The worldwide logistics industry is expected to grow by 4% to 5% every year and in Europe by 6.5% every year (IBM, 2003). In Europe, transport costs have increased from 30-40 per cent of total logistics cost in the early 1980s up towards 60 per cent in the past decade, while carrier margins have declined to around 4 to 6% and falling. Logistics services that still offer value today, will in the future become basic services only generating a small margin. This is especially the case for physical added value.

Specialty becomes a commodity / low margin. It is essential to Shortsea Shipping remaining innovative and creative to generate enough margin to sustain. IT information technology is important to manage the whole supply chain.

8.1.3 SOCIAL

The following developments in Europe take place with a possible social impact:

8.1.3.1 Infrastructure

- Growing opposition against expansion of road infrastructure (NIMBY)
- Transit countries more and more protest against bearing the biggest burden with respect to environmental impact of transport (blocking of tunnels)
- Road congestion is becoming more and more unacceptable for citizens
- General environmental damage (air, sound)

8.1.3.2 Labour

Politicians will become more and more under pressure to cope with these growing dissatisfaction leading to promoting alternative transport modes like Shortsea Shipping.

With the trend of less expensive labour in the eastern European countries distances to transport goods will be come higher. This will have a social consequence for western European citizens. Lesser jobs and higher pressure on social systems. The market will determine how this situation will develop but western European population must have to come to terms with this.

8.1.4 TECHNICAL

8.1.4.1 Shortsea technology

Containerisation has changed the shipping market since the late sixties, it is only in the last decade that the shortsea container market started to differ from the deep-sea market. About 15 years ago the palletwide 40ft container was introduced, as this unit was more suitable to compete with the road dominated intra European market. This developed into the 45ft (high cube) palletwide container. This container can load the same number of pallets as a 13.60 meter trailer. As 45ft became more common in certain markets, the existing container vessels were not equipped to load these units. The result was specially designed container ships to carry 45ft containers.

Also the capacity of container ships has increased in the last decade. Vessels used on the shorter routes were generally of a 300 TEU size, but in order to increase the speed and sailing schedule integrity, vessels of 500 to 700 TEU are becoming the norm.

Container handling has not changed much over the years. The development in larger vessels mean that terminals will have to increase handling speed. More and more terminal operators realise that shortsea services need a fast turnaround of vessels on a 24 hour basis. This has resulted in e.g. a terminal in Rotterdam, specialising in shortsea traffic, handling more than 1,2 million TEU per annum.

As shortsea shipping is only a part in the intermodal chain, the seamless integration with other modes, in the port and on the terminal, is essential. This means not only good road connections, but also the possibility of easy transfer to rail and barge. When shortsea is combined with other environmentally friendly modes (rail and barge) the optimal supply chain can be realised, in terms of costs and environment. Though all these improvements mean that shortsea container services can better compete with road transport (especially on the longer distances), road haulage will always be needed.

8.1.5 LEGAL

8.1.5.1 Legislation

Many initiatives taken by the EU Commission have an impact of Shortsea Shipping.

- Environmental issues like sulphur and SO₂ emissions
- Ports package
- Security/ safety like ISPS introduction
- Working time directive
- Subsidy policy in respect of unfair competition
- Harmonisation of rail
- Customs documentation
- Lisbon agenda; decoupling economy / environment

A number of these actions/directives do not favour the transport market in general and Shortsea Shipping in particular. Some of them increase costs/administrative burden.

The commission should recognize that legislation should promote instead of hampering the development of certain modes.

8.1.5.2 Subsidies

Marco Polo

In its [White Paper - European Transport Policy for 2010: time to decide](#), the Commission proposed to take measures which should by 2010 return the market shares of the modes of transport to their 1998 levels. This will prepare the ground for a shift of balance from 2010 onwards.

One measure to achieve this objective is the establishment of the **Marco Polo Programme** with its adoption on 22 July 2003. The Programme's objective is to reduce road congestion and to improve the environmental performance of the freight transport system within the Community and to enhance intermodality, thereby contributing to an efficient and sustainable transport system. To achieve this objective, the Programme supports actions in the freight transport, logistics and other relevant markets. These actions should contribute to maintain the distribution of freight between the various modes of transport at 1998 levels by helping to shift the expected aggregate increase in international road freight traffic of 12 billion tonne-kilometres per year to shortsea shipping, rail and inland waterways or to a combination of modes of transport in which road journeys are as short as possible.

All commercial organisations active in the European freight transport services market are within the scope of the Programme. (no infrastructure- , RTD- and study projects are eligible for support)

The Programme runs from 2003 to 2006 with a budget of 100 € million for the EU25. Countries such as Norway, Iceland and Liechtenstein have joined the programme. Each additional fully participating country will contribute to the available budget.

Project proposals may officially only be submitted when a call has been published. The second call will appear in the EC's Official Journal and on the Marco Polo homepage, and will specify all details.

The first call for proposals was published on the 11th October 2003 and closed on the 10th December 2003, the 13 successful projects will start in 2004.

The second call for proposals has been published in September 2004 with a closing date in November 2004 successful projects will start in 2005. In the autumn of 2005 another call will be done (as well as in 2006). http://europa.eu.int/comm/transport/marcopolo/index_en.htm to view approved projects in 2004.

Marco Polo II (2007-2013)

On the 15th July 2004 the Commission presented a proposal COM (2004) 478 to establish a second, significantly expanded "Marco Polo" programme from 2007 onwards.

Marco Polo II includes new actions such as Motorways of the Sea and traffic avoidance measures. The programme, which has a budget of €740 million for 2007-2013, has been extended to countries bordering the EU. The Commission estimates that every €1 in grants to Marco Polo will generate at least €6 in social and environmental benefits.

The final form of Marco Polo II will depend on the outcome of the negotiations with the European Parliament and the Council.

8.2 APPENDIX 2 - SERVICE PERFORMANCE INDICATORS

8.2.1 VISUAL OVERVIEW



WHAT IS SERVICE PERFORMANCE?

| TIME | CONSIGNMENT CARE | COMPLIANCE | ZERO DEFECT |
|----------------------------------|--------------------------------|------------------------------|------------------------------|
| Did the shipment arrive on time? | Was it in the right condition? | Did it meet all regulations? | How were mistakes rectified? |

These are the important questions every business wants to know



WHY MONITOR SERVICE PERFORMANCE?

- For an early warning of possible service failure
- For a means of troubleshooting problems
- For the shipper to compare
 - *different providers*
 - *different modes of freight transport*
 - *different transport corridors*
- As a means of evaluating infrastructure investment and performance
- To set a published minimum standard of performance for all to see and buy in to



HOW DO WE MONITOR SERVICE PERFORMANCE?

- **Involvement** of all stakeholders around the table
- **Guided** mapping of **supply chain activities** with agreed definitions and responsibilities
- Identifying agreed **Service Performance Indicators** as early warnings of service failure
- Finding **clear links** between operational activities and service performance
- Developing **Standards and measures** owned by all stakeholders



THE FTA MODEL

The example overleaf shows a typical supply chain using Short Sea Shipping as a model. We identified 79 separate activities that make up the door-to-door supply chain as stage 1 in the FTA model.

The 'collect shipment' section has been selected as an example of the way the FTA process works but the same formula is relevant to each stage of the chain.

Following 1-3 in the example overleaf will show how the FTA model works.

8.2.2 THE SUPPLY CHAIN ACTIVITY MAP

The project group identified six major stages in a typical supply chain involving shortsea shipping:

1. The Booking
2. Collect shipment and deliver to terminal
3. Outbound Terminal activity
4. Shipping goods
5. Inbound Terminal activity
6. Deliver to Consignee

The Supply Chain Activity Map is made up of each of the individual activities covered in each section of the supply chain. A total of 79 separate activities were identified in mentioned 6 stages

For each of the 79 activities the following is determined:

1. Who has management responsibility for ensuring the activity is executed properly?
2. Does the activity involves the physical transfer of documents from one party to another?
3. Does the activity involves the transfer of information either electronically or by telephone?
4. Does any of the parties have already performance indicators to determine whether the activity has been performed properly?



A TYPICAL SUPPLY CHAIN MODEL



- LIST OF ACTIVITIES**
- Agree forecast
 - Booking made
 - Pick-up pre-advise

LIST OF ACTIVITIES

| | COLUMN A | COLUMN B | COLUMN C | COLUMN D |
|---|---------------------------|---------------------------------|--------------------------|--------------------------------|
| Activities | Management Responsibility | Documentation/Trade | Electronic Trade | Customs Performance Indicators |
| 17 Prepare for collection | | | | |
| 18 Collect empty container | Inland Carrier | Blatant | SMS message | 2 hours before close of depot |
| 19 Check container quality | Inland Carrier | Blatant | Yes | |
| 19 Container Mx. allocated against Booking Reference Number | Stevedore | Blatant | Yes | 100% accuracy |
| 20 Collection of shipment | | | | |
| 20 Deliver to call at correct location | Inland carrier | Blatant | SMS message | |
| 21 Shipper located | Shipper | | Yes | |
| 22 Check container quality | Shipper | Yes | | |
| 22 Staff container | Shipper | | | |
| 24 Check loading of shipper | Shipper | | | |
| 25 Ward issue documentation | Shipper | Yes | Yes - packing list (BLI) | 100% accuracy |
| 26 On-site customs check and seal | Shipper | | Yes | |
| 27 Delivery to terminal gate | | | | |
| 27 Port to be pre-adviced of delivery by | Inland Carrier | Blatant | Yes | 100% accuracy |
| 28 Check at Customs station and check the seal | Inland Carrier | | | |
| 28 Deliver to terminal gate | Inland Carrier | Blatant | | Container to be pre-adviced |
| 28 Shipper accepted | Stevedore | | | |
| 29 Boxes issued | Stevedore | Yes | | |
| 22 Customs documents handed over | Stevedore | Yes - complete set of paperwork | | |

- LIST OF ACTIVITIES**
- Prepare for loading
 - Loading vessel
 - After loading

- LIST OF ACTIVITIES**
- Voyage

- LIST OF ACTIVITIES**
- Before vessel discharge
 - Discharge of vessel

- LIST OF ACTIVITIES**
- Collection
 - Delivery of shipment
 - After delivery

1 SUPPLY CHAIN ACTIVITIES

Defining management responsibility

It is important to agree where one task ends and another begins. There must be a clear definition of who takes responsibility for each task and ensures service performance at each stage.

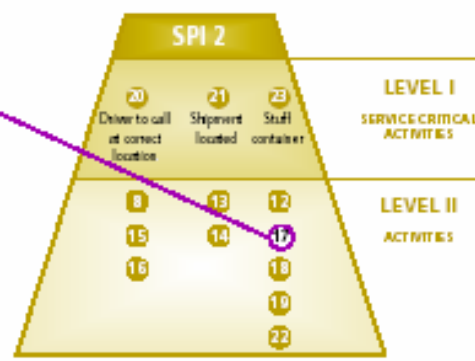
Common understanding (common vocabulary)

The consistency in the language used ensures efficient communication among parties.

Potential service failure points

There is a potential service failure every time goods are passed between parties - mistakes are easily made when documentation or information is exchanged.

3 SERVICE PYRAMIDS



All Service Performance Indicators (SPIs) will have a pyramid. All activities that affect the SPI will be listed within this pyramid. Some of the activities will have a direct impact on the service (Level I), whereas others will have an indirect effect (Level II) - they determine how well the level I activity has been performed.

This enables the cause of any service failure to be identified. Once the source is known, actions can be changed in order to prevent a re-occurrence.

The Service Pyramid can also identify where best practices need to be introduced in the supply chain.

A full listing of all referenced activities (1-70) can be obtained from Mick Jackson at FTA.

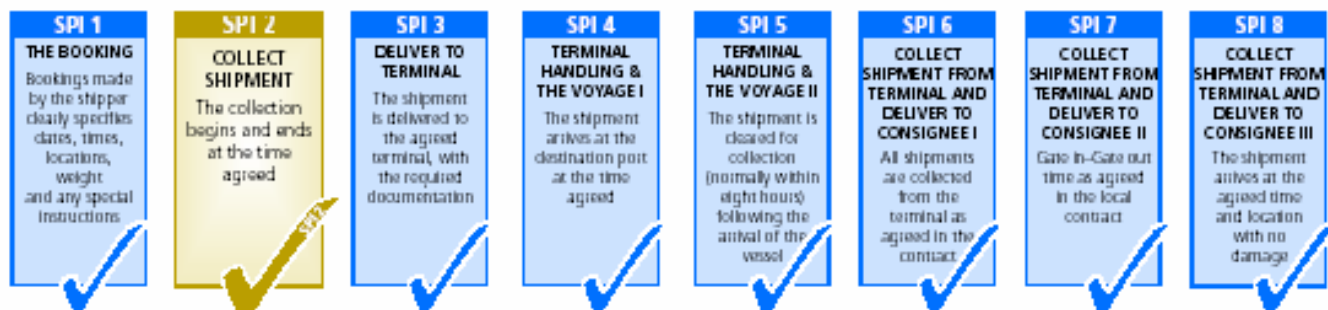
2 SERVICE PERFORMANCE INDICATORS

For any shipment, anywhere in the world, there is one ultimate service performance indicator - did it arrive at the right place at the right time in the right condition? If a problem is not identified until this stage it is too late to do anything about it. Service Performance Indicators are an early warning system that give notice of a build up of underperformance that will result in a failure.

These 'snapshots' among the supply chain indicate the minimum standards of service to ensure a 100% accuracy. Each must be agreed on by all parties involved if they are to be effective.

The Short Sea Shipping project has resulted in eight agreed SPIs - as seen in this example.

An equivalent project for the air freight sector resulted in 12 SPIs.



8.2.3 PROCESS DESCRIPTION

Based on the 6 activity stages the number of SPI's were determined. From an initial defined 15 SPI's this number was reduced to 8. For each of these SPI's the following is determined:

1. What should be measured?
2. Who has management responsibility to deliver the service?
3. Who should measure the performance against the measure?
4. What is the Performance Standard to be guaranteed by the LSP?

8.2.3.1 executive summary

The report covers a project which commenced in January 2001 with a target of completion during the calendar year. This hope was established in the experience of a similar project in the airfreight sector which took some three years to cover the same workload.

The report records the fact that the project has been a considerable success to date and this is in very large measure due to the enthusiastic and open-minded support given by the industry players from the Rotterdam-Göteborg corridor.

Our project has delivered three outputs which can play an important part in the commercial operation of the shortsea supply chain. Use of these and acceptance of their principles will give considerable comfort to actual and, more importantly potential users of the shortsea mode.

The 'final' number of SPI's for the chain is eight. However, the underlying Service Pyramids also identify just under thirty examples of potential best practice that can underpin service performance.

The Steering Group strongly recommend that this is taken further both in terms agreeing specific best practices and running operational pilots. It is also recommended that extensions be examined both within shortsea (to other ports) and on the interface between modes.

The project managers would like to record their thanks to the, in excess of 40 organisations that have taken part in the project to date. Special thanks are recorded for the Steering Group members who took on a considerable workload in addition to their normal jobs. The national co-ordination roles played by Ulla Ressel (Swedish Shippers Council) and Ilse Eijndhoven and Wim Jonkman (Port of Rotterdam) are especially worthy of mention.

8.2.3.2 Service Performance Indicators for Shortsea Shipping The Rotterdam- Göteborg Project - Phase I

Supporting Annexes to Phase I Final Report can be found on the CD Rom "MOTORWAYS OF THE SEA - WORKGROUP OF THE EUROPEAN - FREIGHT & LOGISTICS LEADERS FORUM - Vienna, 17th November 2005".

Introduction

- This document is the final report of the first phase of the Rotterdam-Göteborg Project.
- The twelve-month project commenced with a Plenary Forum of Stakeholders in Göteborg the 18th January 2001 and will finish with a similar event in Rotterdam in mid-January 2002.
- Section 2 of this report outlines the stages of the project and their timing during phase 1 and section 3 describes in detail the three main outputs from the project.
- The fourth section then considers how each output will be used by each of the main stakeholders, the benefits to each of them and any pragmatic issues which arise as a result of their use.
- Finally, section 5 makes a series of recommendations on behalf of the project steering group for the next phases of the project.
- The project has been a dynamic one that has developed as it has gone along, with a number of decision and verification points along its route. As a consequence, there have been a large number of discussion papers produced throughout 2001.

Project Description

- The project commenced with a plenary forum of major stakeholders in Göteborg on 18th January 2001.
- A key attribute of this project has been that the outputs have been developed, agreed and verified by the players in the shortsea shipping market between the Netherlands and Sweden. This is why, the outputs described in section 3 appear robust and sustainable.
- In order to carry this out, we needed to establish a meaningful structure for the project team. Ten of the stakeholders agreed to sit on a Steering Group which met every three months in order to direct the project.
- Working groups were established in both Rotterdam and Göteborg as the basis for discussion. In order to minimise repetition, each working group carried on from where the previous group finished.

- Invitations on to the working groups were offered to and enthusiastically accepted by participants beyond the original stakeholder group. These working groups met approximately monthly during the middle section of the project.

- The stages followed by the project during 2001 were as follows.

Stage 1 Familiarisation and common understanding.

Duration - February - May

Output - The Supply Chain Activity Map

Stage 2 Focusing on Service

Duration - June - August

Output - The Service Performance Indicators

Stage 3 The Operation and Service Performance

Duration - August - September

Output - The Service Pyramid

Stage 4 Dissemination and Verification

Duration - September - December

Output - National and European Workshops

- The approach followed by the project is based on the premise that a supply chain manager or shipper is judged by whether his supply chain performs as expected in delivering the right goods of the right quality to the right location at the expected time.
- This meant that the project had an intentional focus on how well shortsea shipping performs in *service terms*. This meant in turn that the project team had to be constantly pulled away from operational considerations and on to the service implications.
- An important early consideration in the project was whether the groups should attempt to cover in detail all forms of shortsea shipping, including Full Container Load, Less than Container Load, Roll-on Roll-off and bulk services.
- It was decided to focus initial efforts on FCL and then, at a later date in the project, examine how suitable the findings were for the other forms. This was done and in fact, much of the detailed work later proved to be equally applicable to all forms of shortsea shipping.

- Any variances that did exist are covered in section 3 which looks in detail at the main outputs and the processes which led to them.

Outputs from the Project

- Each of the four main outputs is now described in detail.

The Supply Chain Activity Map

- The working groups for the project were made up of representatives of the important stakeholders in the shortsea supply chain between Rotterdam and Göteborg. These included shippers, shipping lines and their agents, port management authorities, stevedores, inland carriers and customs authorities.
- The first task was to derive an agreed definition of what is involved in the supply chain. Whilst this may appear trivial, it was an extremely important consideration as each party inevitably views the supply chain from their individual viewpoint.
- This leads to a different perception of individual activities and often leads to different terms being used by different players for exactly the same task.
- The groups identified six major stages in a typical supply chain involving shortsea shipping:
 1. The Booking
 2. Pick-up shipment and deliver to terminal
 3. Outbound Port activity
 4. The Voyage
 5. Inbound Port activity
 6. Collect shipment and deliver to Consignee
- The Supply Chain Activity Map is made up of each of the individual activities covered in each of these sections of the supply chain. The groups identified a total of 79 separate activities.
- Often these activities were referred to by different names by different parties. Sometimes, some parties were not aware that certain important activities occurred in the supply chain.
- For each of the 79 activities, the group discussed and agreed:

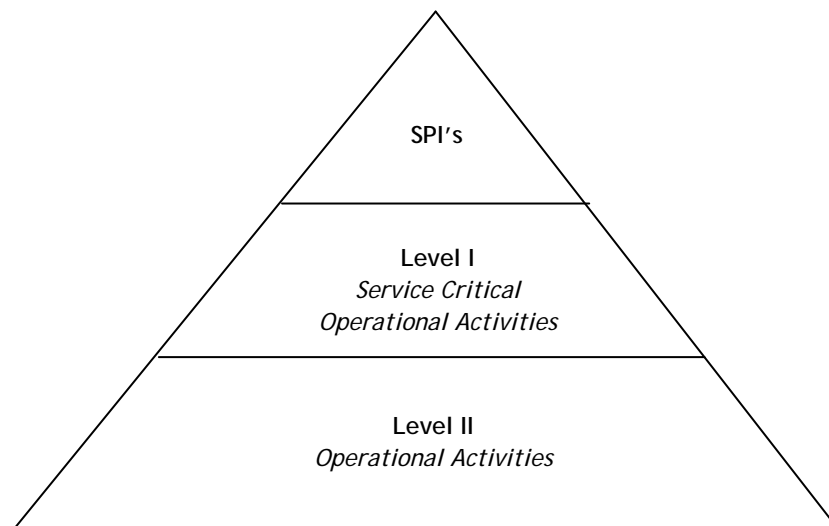
1. Who has management responsibility for ensuring the activity is executed properly.
2. Whether the activity involves the physical transfer of documents from one party to another. (A potential source of service failure)
3. Whether the activity involves the transfer of information either electronically or by telephone. (Another potential service failure)
4. Whether any of the parties (shipper or provider) have performance indicators that they use to determine whether the activity has been performed as it should have been.
 - This exercise proved invaluable in providing the project team with a single, agreed vocabulary and a clear agreed 'shape' for the supply chain. It was generally agreed that the shortsea industry had not previously had such a clear agreed base definition of its activities.
 - The Supply Chain Activity Map. The column headed 'Indicators' has, as an example, those used by one of the large shippers on the working groups. In normal use, a shipper and the other parties would include those indicators used in their own operation.

The Service Performance Indicators

- There was some debate within the team about the extent to which the shipper or the customer needs to be aware of the detailed operation of the supply chain. Once the group had agreed the basic definition in the Supply Chain Activity Map this was a valid point.
- A shipper only really needs to focus on those activities that directly impact on service. It could be argued that the only *service performance indicator (SPI)* is 'was the shipment delivered exactly as promised?'
- Whilst this is indeed the ultimate SPI, there are other indicators along the way which show whether the ultimate SPI will be met. After much discussion, the working groups sharpened their focus on to a list of 15 SPI's which covered service level and potential service failures.
- For each of these, the groups identified:
 - What should be measured for that indicator?
 - Who has the management responsibility to deliver the service?
 - Who should measure the performance against that measure?
 - What should be the *Performance Standard* that should be guaranteed by the service provider?
 - The original list of 15 SPI's was reduced further to eight SPI's.

The Service Pyramid

- By this stage, the project team had identified a list of 79 activities which make up the door to door supply chain and had identified 15 SPI's which measure and represent the degree to which service level is being met.
- Both these outputs are useful in their own right, the first allowing a shared definition of the supply chain and the second allowing a sharing of expectations between the players.
- To be even more useful, it is necessary to combine the Activity Map and the SPI's so that providers can identify how their activities impact service. This is the role of the *Service Pyramid*.



- This represents a hierarchy. At the top level is each of the individual Service Performance Indicators. This is what the shipper or customer expects to see as an outcome of the measure covered by the SPI.
- The **Level I Operational Activities** are those critical activities from the list of 79 activities on the Supply Chain Activity Map that impact directly on service. In other words, if something goes wrong in that one of those activities, a service failure will directly result.
- The **Level II Operational Activities** are those, from the Supply Chain Activity Map, which feed in to the Level I activities. A problem in one of these activities may not directly cause a service failure but will increase the chance of a critical failure in a Level I activity. This in turn will lead to a service failure.

- A Service Pyramid was developed for each of the original 15 SPI's so that the important operational activities could be 'mapped into' them.
- In this example, we only have two operational levels shown in the pyramid. In theory, there could be many levels. These may not directly impact service because the issuing is an operational matter between the shipping line and the stevedores. However, any problem may eventually impact on customs clearance and result in a collection delay.
- The Service Pyramids are directly useful to service providers and infrastructure managers in two ways.
- Firstly, they can be used *reactively*. If there is a service failure in one of the SPI's, the Service Pyramid can be used as a 'route map' after the event to track precisely which activity caused the service failure. When the 'guilty' activity is identified, then corrective action can be taken to ensure that it does not happen again.
- The second way of using the Service Pyramid is *pro-actively*. The Service Pyramid is a very effective way of focusing and directing relevant best practice into the correct activities to ensure that service levels are met.
- Whilst it is a comfort to know that the cause of service failures can be easily traced through the operation, the potentially most exciting use of the Service Pyramid is to focus best practice.
- This re-evaluation led to the number of SPI's being reduced to eight. The remaining seven SPI's have been re-designated by the working groups as examples of *best practice* which can be mapped into those eight SPI's.

Dissemination & Verification

- The project team has reached good agreement on the three outputs described above. However, that only represents the views of 15, albeit important organisations.
- It was decided that the outputs of the project need to be presented to as wide an audience as possible in order to test their validity. The first phase of the project, reported here is just the first part of that dissemination process.
- During 2001, there have been a number of events which have disseminated the outputs:
 - Swedish National Discussion Workshop: 21st August, Göteborg
 - Dutch National Discussion Workshop: 26th September, Rotterdam

- European Discussion Workshop: 25th October, Copenhagen
- Feedback from each of the sessions was positive and has been included in the developing outputs. It should be stressed that the period of dissemination has only been started in this phase of the project. It needs to continue professionally for a longer period and this is one of the recommendations discussed in section 5.

Use of the Project Outputs

- Each of the project outputs have been developed by real players in the shortsea shipping industry and are intended to be of real use by industry.
- This section looks at possible ways each of the three main outputs can be used by each of the stakeholder groups in industry and also how policy managers in government may be able to use them.
- In overall terms, the project produces a tangible set of Service Performance Indicators and it is intended that parties whose door to door supply chain passes through Rotterdam and Göteborg be invited to 'sign up to the indicators'.
- By signing up to the scheme, the signatories undertake to employ each of the three outputs within their business where relevant. The ways in which each stakeholder will actually use them are now proposed.

Shipping Lines & Inland Carriers

- By signing up to the SPI regime, the service providers for shortsea shipping are making a clear statement that they understand and know how to handle, the service imperatives of their customers.
- This will differentiate individual service providers, but can only be effective if the indicators are seen to be meaningful and that service promises can be kept. Unlike other possible regimes, the SPI approach gives two powerful tools to the Shipping Lines and Inland Carriers.
- The first is the *Supply Chain Activity Map*. Too often, individual service providers give the impression that they fail to appreciate that they are actually part of their customers' wider supply chains.
- Understandably their prime focus is on their own operation but their customers have to consider the impact on their whole supply chain. This is one of the most frequent complaints heard of service providers.

- The Supply Chain Activity Map makes a very clear statement that each service provider signing up to the regime takes a supply chain-wide view of a shipment.
- Furthermore, it is a clear message that the service providers understand the need to focus on the interfaces between themselves and the next and previous providers in the chain.
- It is proposed that a version of the Activity Map be published in a form that allows service provider signatories to include it in their sales literature. One provider on the project steering group has already added the Activity Map to their web-site.
- The second tool for the service provider is the *Service Pyramid*. This has two uses for the service provider, both of which will give some comfort to their customers that their operations are being professionally managed with a service focus.
- Zero defects in an operation as complex as a supply chain is realistically unattainable. Most shippers recognise that, but demand that any potential or real service failure is investigated and corrected as soon as possible.
- The Service Pyramid allows the root cause of any individual service failure to be traced back through the operational activities that led to the failure. Following such 'route maps' through the operation should improve such investigations.
- Such diagnostic activity would be carried out anyway without the use of the Service Pyramid. However, its use adds consistency to the investigation. More importantly, it adds transparency to the operation for the customer and adds to his comfort factor.
- However, the most exciting potential use for the Service Pyramid is as a means of introducing focused *best practice* into the operation. There is much discussed and written about best practice and it is indeed an academically attractive concept.
- In many instances, the pursuit of best practice is marred because insufficient attention is paid as to whether that best practice from elsewhere fits properly into the operation.
- The Service Pyramid allows the service provider to target best practice at particular activities in the Supply Chain Activity Map and enables him to demonstrate, using the 'route map', exactly how that best practice will improve service.
- This adds to the transparent nature of the operation and will give the customer the comfort of knowing the provider understands service.

Infrastructure Managers

- In the past, port managers have been roundly criticised for running their ports 'in their own right' rather than appreciating that they are merely conduits through which supply chains pass.
- Both the Rotterdam and Göteborg management teams showed a keen awareness of their role in the wider supply chain throughout the project. This awareness can be made even more obvious by the adoption of the Supply Chain Activity Map and the Service Pyramid.
- Infrastructure managers can make the same use of those tools as the service providers and that is not repeated here. The two ports in the project provided a good combination because the modus operandi of their management teams were different.
- In Göteborg, the management team take full and direct responsibility for all the port's activities. They manage the port as a unit and directly employ the functions of stevedoring and storage etc.
- In Rotterdam, the Municipal Port Management team manage the overall facility but separate companies carry out the individual functions. This gives them more of a facilitation role in the supply chain.
- The Göteborg team can use the Supply Chain Activity Map and the Service Pyramid directly on their operation. Rotterdam can use it both indirectly through the companies providing the services, and directly should any service failure be as a result of 'infrastructure under-performance'.
- For the management of both ports to attract shippers they need to show that all of the relevant operational areas are covered by signatories to the SPI regime.
- Both ports are keen to use the Service Pyramid to identify and focus best practice into their operations. This is discussed further in section 5.
- The Port of Rotterdam in particular also have a strategic and long term use for the approach as they are concerned about predicted growth of road-based feeder traffic into the port. This approach when used on a multi-modal basis can be used to attract traffic into Rotterdam on to modes other than road.

Shippers

- The main benefit to shippers of the SPI regime is that they know that service providers signed up to the regime:
 - Understand the supply chain perspective
 - Have a focus on service
 - Work to an agreed set of operational activities and a common vocabulary
 - Are aware of the *flow* of the shipment through the shortsea system
 - Have a means for rapid diagnosis of potential service failures
 - Have a means to identify and focus relevant best practice within their operation
- This can be summed up by one phrase *a comfort factor*. Shippers will favour service providers that follow the regime but they will also favour the shortsea mode if it is demonstrably better in service terms than other modes.
- The onus on the SPI regime is not simply on the service providers. A shipper is also a signatory to the regime and must amend his behaviour accordingly. Transparency works for the shipper as well as the provider.
- The shipper can use the SPI approach as a monitoring tool as a tactical decision support tool and as a strategic decision-making tool.
- It is envisaged that a shipper will expect a service provider to meet the service performance standard outlined in each SPI. We do not yet know what information is needed on a shipment by shipment basis to allow this monitoring to take place. This is the subject of one of the next steps recommended in section 5.
- As a tactical decision support tool, a shipper can use the SPI's to determine whether each individual shipment is best suited to shortsea or some other mode. When the package of SPI's for all modes is complete, this will be a more meaningful use of the tool.
- At the strategic level, the tool is useful as a means of selecting modes across a number of corridors. If one mode performs much better than other modes, this could even influence strategic facility location decisions.
- Another strategic usage would be to benchmark one corridor, or one port, or one mode against others. Once this stage is reached, the shipper will have a very effective decision support tool.

Government Policy-makers

- Government is, in the main responsible for the location and in some cases the management of infrastructure. In this role, governments (both State and European) will get a clear indication of bottlenecks or other infrastructure problems. This will mean that they can use this information to prioritise and direct investment where it is most needed.
- In addition, governments will find that where their sustainability policies demand modal realignment. These policies normally demand a move away from the relatively damaging road mode towards more sustainable modes.
- In reality, the manager of a road based supply chain is likely to have considerable experience of that mode. He will know the indicators to look for to get the comfort that his service provider is performing as necessary. For an alternative mode (such as shortsea shipping) he will not have that detailed knowledge and will therefore be reluctant to make the move.
- The transparency offered by the full SPI regime is such that the relative service offering from shortsea is clearly laid to allow comparison with the road alternative. This will increase the likelihood of a change being made, providing shortsea can offer a service that is sufficiently attractive in service terms.

Summary

- In summary, this project has, from the start been aimed at producing outputs which are of use to industry. Shipping lines, forwarders, port management and inland carriers can all sign up to the full SPI regime. Those that do, can clearly differentiate their offering from those that do not.
- However, the biggest benefit will come if sufficient links in the chain through Rotterdam-Göteborg sign up to the regime to enable the clear benefits of the shortsea mode to be demonstrated to potential shippers.
- While it is the service providers who benefit directly from a number of useful tools to improve service, it is shippers who will benefit from the increased *comfort factor* of knowing that their shipment is in the hands of a supply chain that can effectively and demonstrably focus on service.

Conclusions & Recommendations

- The project has achieved a great deal over the twelve-month period. This is due in no small part to the positive and open attitude of the active stakeholders from each country and the shortsea mode as a whole has benefited from that co-operation.
- Despite this success however, we are only at the beginning of the journey, not the end. This was recognised by the Project Steering Group who came up with six recommendations for additional work:
 1. A Communications Programme
 2. Operational Pilots
 3. Best Practice Examples
 4. Extension to other SSS Corridors
 5. Interface with other modes
 6. Benchmark Clubs
- Each of these is now considered further.

Communications

- There is a need to continually disseminate the SPI's to an ever wider audience. The number of shippers actively participating in the project was a disappointment but we need to expose the outputs and the process to as many as possible.
- The consultation process of the project introduced the outputs for debate by some 65 organisations. Also, by the time of writing, some 48 individuals had also registered on the consultation site.
- However, this communication process needs to continue for some time yet and it is recommended that we manage the process centrally and professionally.
- Detailed issues for consideration include:
 - The Project Publication - we need a high quality printed document that can be circulated widely.
 - Tailored Presentations to individual large shippers. It is proposed to invite, as a pilot, a number of relevant managers from a large European Shipper to the Port of Rotterdam for a focused face to face session.

- Press and Journal Articles - the project can be a high profile news item in the relevant trade press.
- Speaking slots at Conferences - there is a lot of interest in the project and it is proposed that various project team managers speak at conference slots. For instance one has been arranged at the European Intermodal Association Conference in Barcelona in January 2002.
- PR by individual Stakeholders (centrally managed). This will show in a very visible way the commitment of each major stakeholder to the SPI regime.

Operational Pilots

- One of the unknowns currently is what operational data is necessary to underpin the SPI regime for shortsea shipping. If the SPI system becomes too dependent on data or too much of a bureaucratic burden, it will never become widely implemented.
- Once we know the information required, we can classify it as:
 - Where data already exists as part of the operational management and monitoring.
 - Where additional data is needed but can be easily captured and processed.
 - Where additional data is needed and new systems or procedures need to be implemented in order to achieve it.
 - Where a constant flow of data is unnecessary but data can be sampled when a performance failure occurs.
- The only way to achieve an understanding of these issues is to run a series of operational pilots between Rotterdam and Göteborg in order to see what happens on the ground.
- It is recommended that three pilots be established during a nine-month period next year covering a large shipper, a medium shipper and a small shipper.

Best Practice Examples

- The outputs from the project, especially the *Service Pyramid* present a good vehicle for the capture and focusing of best practice in the shortsea supply chain. The group felt that the project needs some clear examples of how Best Practice can be identified and exploited within the Service Pyramids.

- The following are proposed:
 - Customs - Best Practices for:
 - The way Customs work for Shortsea
 - The way shipping lines etc interface with Customs
 - Port Operations
 - Best Practice for the loading of vessels and procedures before loading in order to reduce the time between arrival of the shipment in the port and loading.
- Both of these will require the establishment of small working groups representing both ports and customs authorities.

Extensions to other corridors

- We need to explore how SPI's can be transferred from Rotterdam-Göteborg on to other corridors. It is not feasible to 're-invent the wheel' and go back through the whole process but the outputs from this project will need to be sold to a community that do not initially share the ownership of our stakeholders.
- It is recommended that two extensions should be investigated as a next step:
 - Göteborg into the Baltic. It is recognised that this may be predominantly RORO so it may give an additional test. Another alternative is the Van Dieren Operation which runs from Latvia to Denmark, the Netherlands and the UK on behalf of IKEA.
 - Rotterdam to Spain. This extension would bring a major north-south corridor into the project. There is much interest in this corridor among northern European grocery retailers concerned with their supplies of fruit and wine. Another possible candidate to underpin this extension test may be the chemical company DSM with their Rotterdam-Santander operation.

Modal Interfaces

- This project has, to date focused on shortsea and predominantly therefore the interface between road and shortsea. There is some interest, especially from the Port of Rotterdam to investigate other shortsea interfaces, especially that with Inland Waterways. It is recommended that this be investigated.

Benchmarking Clubs

- One potential use for the SPI regime is to enable the performance of individual elements to be compared across supply chains. There is some interest among the two Port management teams to set up such a benchmarking club and involve other European Shortsea Terminals in the benchmark process.
- It is recommended that this be investigated further.

Summary

These are the recommendations put forward by the Steering Group which comprises representatives from the main stakeholders in Sweden and the Netherlands. An estimate of the time, resource and hence cost involved in following each of these is the subject of a separate paper.

8.3 APPENDIX 3 - REFERENCE LIST

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