

Intermodal Freight Transport & Logistics Best Practices

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European Intermodal Association

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DRAFT VERSION

Introduction

This compendium of intermodal freight transport & logistics best practices has been selected and published by the European Intermodal Association, which is the 'voice' of intermodal transport.

Sources: PROMIT 'promoting innovative intermodal freight transport'; BESTLOG 'logistic best practices', both projects funded by the European Commission, in addition to a number of specifically labelled EIA 'Intermodal Award' winners. Neutral Jury: EU Commission, EU Parliament, various single EU transport associations.

New cases can be added at a later stage. Contact EIA or its research partners to find out how your company could be included, or the conditions for winning an Intermodal Award.

Sustainable mobility has been at the heart of EIA's EU policy, promotional and communications activities since its foundation. All transport modes and industries from port to hinterland are welcome, with the aim of developing smart and profitable logistics solutions.







Bravo

Improving corridor quality and efficiency



Improving corridor quality and efficiency with BRAVO



Main Achievements

- Drastic modal shift
- 90% punctuality for trains
- 99.9% reliability for documents transport

Main Innovations

- Coherent open corridor management scheme
- Interoperable rail traction
- Comprehensive quality management system including quality agreements
- Advanced monitoring and customer information system
- Extended & innovative intermodal services including time table tool
- New technology to capture conventional semitrailers

Motivation

- Improving intermodal capacity on a strongly used corridor
- Stabilising and improving quality and efficiency of intermodal transport to be more competitive against road
- Establishing the basis for long term growth of intermodal transport

Main companies involved

- KombiConsult and Hacon
- CEMAT, Ferriere Cattaneo, Hellas Transport, Intercontainer Austria, Interporto Bologna Lokomotiv, ÖBB, Railion, Rail Cargo Austria, Rail Traction, Trenitalia, UIRR

Implementation date

- 2006/2007

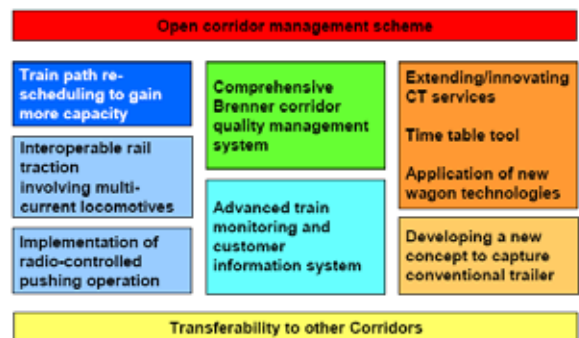
Transport/Geographical characteristics

- Transalpine Corridor via Brenner
- Intermodal rail on various distances

Starting Point

The Brenner Corridor is one of the mostly used European freight corridors both by road and rail, which is transiting the sensitive Alpine region. With an objective to raise the volume of environmental-friendly combined rail-road transport and increase rail's market share on the Brenner corridor, in 2002, all stakeholders of this industry from Austria, Germany and Italy committed themselves towards the Ministries of Transport of the countries to the "Action Plan Brenner 2005". This plan contains a set of measures required to organize and ensure the short- to medium-term upgrading of the level of service provided and improve competitiveness in combined transport on this corridor.

Solution



Coherent open corridor management scheme:

This open corridor management scheme includes (1) an improvement and intensification of cooperation between the railway undertakings and infrastructure managers, (2) an improvement of communication and data exchange to optimise the interfaces between parties involved, (3) an introduction of an overall quality system and a removal of operational bottlenecks.

Interoperable rail traction:

This interoperable rail traction involves multi-current locomotives including train path re-scheduling, simplification and harmonisation of locomotive approval procedures (certification).

Punctuality	90% (with max tolerance of 15 min)
Reliability	Max train delay of 180 min (related to 10% of non punctual trains)
Flexibility	Cancellation of regular trains up to 48 hours prior departure without extra charge Interim time-table modifications within three months after submittal of request
Customer information	Real time monitoring of every train Reporting of ETA Co-ordinated international reporting system
Rolling Stock	95% rate of employment of agreed wagon set
Documents	99,9% rate of reliability of transport of accompanying documents

Comprehensive quality management system:

This includes a standard quality agreement and a quality manual. Within the quality manual processes are described in a standardised way. The following quality indicators have been identified as relevant: punctuality, reliability, flexibility, customer information, rolling stock and documents. Quantitative goals have been defined.

Advanced monitoring and customer information system:

This system provides regular information of train position on the entire train journey, event-based information as irregularities and their impact (estimated time of arrival, estimated time of availability).

Scheme on extended & innovative intermodal services including time table tool:

This component included the analysis of the time table requirements and the implementation of an adapted and extended timetable.

Station	Direction	Arrival	Departure	Platform	Notes
Wiesbaden Haupt	Dachau	08:05	08:10	1	
Wiesbaden Haupt	Dachau	08:15	08:20	1	
Wiesbaden Haupt	Dachau	08:25	08:30	1	
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Wiesbaden Haupt	Dachau	08:55	09:00	1	
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New technology to capture conventional semitrailers for unaccompanied intermodal transport:

This includes adaptations at the wagons and simple construction of additional handling equipment without additional large scale infrastructure. The approach was an integration in existing terminal procedures.

Results and experiences

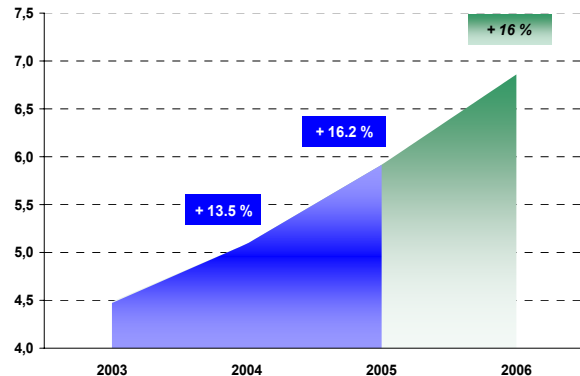
The experiences of the implemented measures are very positive: The following results could be achieved:

- Improvement of train path allocation process and increase of capacity for freight trains (also by development of Intermodal rail train schedules)
- Increase of efficiency by interoperable rail traction (but infrastructure investment are needed on some parts of the corridor), the advantages of interoperability are higher productivity, higher flexibility, reduction of travel time, reduction of shunting costs, higher service reliability and reduction of utilisation of border station.

- The quality management system has been implemented and a continues monitoring and improvement is necessary. The quality has improved significantly on the Brenner Corridor.

The train monitoring system has been demonstrated. Such an application

- seems to be technical and operational feasible.
- The megatrailer pocket wagon 3000 are tested since May 2006. They seem to be technical and operational feasible. They can improve the flexibility and are fully compatible.
- During the BRAVO project a substantial increase in intermodal transport could be reached.



Main benefits

The BRAVO project had the following benefits:

- Quality improvements relating to reliability (maximum delay time 180 min. for trains, 90% punctuality)
- flexibility for time-table shifts
- 99.9% reliability for transport of documents
- Customer satisfaction increases through customer information system
- Increase on intermodal transport (Modal Shift: 5,92 to 6,86 million gross tonnes from 2005 to 2006)
- Benefits for environment and traffic on Brenner road

Main success factors

The success of the project followed from these points:

- corridor approach
- main operators of the corridor joined the project
- focus on quality and customer satisfaction

No rivalry but close cooperation in the corridor due to a bottle neck, which was unfamiliar and challenging for all.

More Information

Project Website www.bravo-project.com

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Coca-Cola Drikker AS

Intermodal transport on long distances



Coca Cola Drikker AS Intermodal transport on long distances



Main Achievements

- 75% of total distribution to northern Norway goes intermodal
- € 600.000 cost savings per year
- Exploitation of synergies of Coca Cola and Mack Brewery logistics network

Main Innovations

- Flexible transportation concept, using slower and cheaper modes where possible and more expensive and quick transportation where required.
- Shippers collaboration creating a win-win situation for both parties

Motivation

- Optimal trade off between transport price and services offered, taking into account location decision and durability of the products
- Promote CCD's environmental engagement by using green transport

Main companies involved

- Coca Cola Drikker
- Mack Breweries
- Logistics Service Provider
- Shipping agency

Implementation date

- The concept is evolving since 1998

Transport/Geographical characteristics

- Road, rail, sea transport in Norway

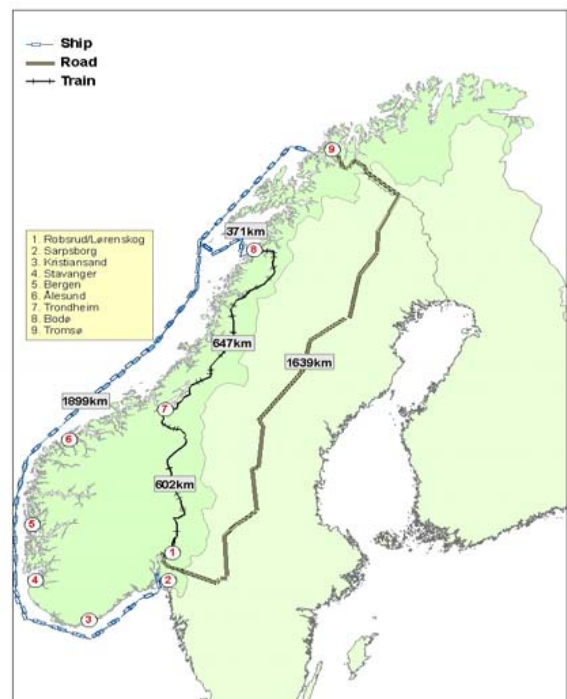
Starting Point

Coca-Cola company was established in Norway in 1937. In the years after World War II the company made arrangements with different breweries for producing and bottling Coca-Cola products in Norway. At the end of the 1990's there was a disruption between Coca-Cola Company and its collaborating partners. As a result Coca-Cola Company opened its own production plant at Lørenskog near Oslo in 1998; the largest bottling plant for soft drinks and water in Norway. With this new plant it was time to restructure and reorganise the logistics for distribution of Coca-Cola Company's products in Norway.

Coca-Cola Drikker AS (CCD), established in 1996, is responsible for sales, production and distribution of Coca-Cola products in Norway. The company is the largest supplier of non-alcoholic beverages in Norway.

Coca Cola's Supply chain to northern Norway

The distance from north to south in Norway is in a straight line equal to 1755 km. In addition the Northern part has a rather low population density. The distribution to this region seemed very suitable for intermodal transport, about 96% goes intermodal.



Shippers collaboration

The distribution of soft drinks from the warehouse in Tromsø to the customers (grocery trade, kiosk, petrol stations and service market) in northern Norway is

outsourced to Mack Breweries that accomplishes the distribution together with their own products, mostly beer. Coca-Cola Drikker AS orders are picked together with products from Mack Breweries for each customer. Distribution is carried out by truck and goes directly to the customers without involvements of wholesaler's distribution networks.

In addition about 75% of the volume for northern Norway (22.5 mln litres) is license-produced by Mack Breweries in Tromsø and 25% (7.5 mln litres) is produced at Lørenskog.

Mode selection

CCD had three options to go from their production location in Lørenskog to its warehouse in Trømsø.

1. Intermodal road-sea-road (1899 km)
2. Intermodal road-rail-sea-road (1633 km)
3. Road only (1639 km)

CCD cooperates with a shipping agency for the sea transport and with a forwarder for the selection between option 2 and 3.

CCD gives the forwarder and shipping agency information on what kind of product has to be transferred. The forwarder and shipping agency then organise the transport. Service requirements as transport time, temperature, number of shipments a week and transport volumes are set by CCD. For the truck only transport the forwarder uses either its own trucks or trucks on fixed contract. The departure of the sea transport from Bodø to Tromsø is coordinated with arrival of the freight train from Oslo. The service is offered once a week.

Contract agreements

The main contract with the forwarder and shipping agency is lasting for 3 years, but on the background of changes in the market (volume, price etc.) the service requirements are negotiated and settled for one year at the time. The forwarder and shipping agency coordinate the shipments from Coca-Cola Drikker AS with shipments from other customers that have Tromsø as destination.

Benefits and costs

The products to be transferred from the Coca-Cola Drikker AS plant (Lørenskog) to the warehouse (Tromsø) are divided into three groups dependent on the products durability.

- "Slow-movers" are products with long durability. These products are via road-sea-road leg.
- Short duration products are transported by road-rail-sea-road leg.
- Urgent transports to prevent from selling no are transported by truck. This happens occasionally in summertime.

Coca Cola gains almost € 600.000 per year through using "slower" and less expensive transport modes where possible.



Strengths and weaknesses

The solution of CCD has the following strengths:

- Single point of contact per supply chain
- Seamless transport solutions
- Coca Cola does not run the risk of underutilization of the transportation assets

CCD considers the following weaknesses:

- Low frequency and long transport time for sea transport
- Lower punctuality of sea transport due to weather conditions. Coca Cola solves this by using license production in Tromsø

More Information

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Coca Cola Drikker AS: Idar Brunvoll

Product by durability	Mode	Transport distance (km)	Transport time (hours)	Volumes, a year, Mln. litres	Logistic costs, €/1 000 litres	Logistic costs, € x1.000/ year
Slow-movers	Road-Sea-Road	1899	168	5.000	123,30	617
Short duration	Road-Rail-Sea-Road	1633	40	1.050	218.50	229
Urgent transport	Road only	1639	25	0.250	240.0	60
Total				6.300		928





Basell Orlen Polyolefins

Supply chain reconfiguration



Customer driven supply chain reconfiguration

PROBLEM DESCRIPTION

Basell Orlen Polyolefins Sp. z o.o. (BOP) is a Polish joint venture, specializing in production and sale of polyolefins. It was established in March 2003 by Basell Europe Holdings B.V. and PKN ORLEN S.A.. Each partner has 50 percent shares. The agreement made by those companies is a good example of the win-win situation. BOP is a member of the Lyondell Basell and ORLEN family of companies. Lyondell Basell Industries is global player which has advanced technologies and international distribution channels. PKN Orlen is one of the biggest corporations in petroleum industry in the Central and East Europe and ensures deliveries of raw materials: propylene and ethylene.

Business strategy of Basell Orlen Polyolefins combines three dimensions: economic, social and environmental. BOP aims to meet customers' expectations by offering high quality products and logistics solutions suitable to their requirements. Additionally, Basell Orlen takes care of social and environmental issues. On the one hand, the company ensures safe work conditions in its facilities and cooperates with many Polish suppliers in the supply chain. On the other hand, BOP uses „green transport corridors” wherever possible. The company specializes in the organizing of intermodal shipments. It is also caused by limited availability of silo trailers, which are adapted to polyolefins' transportation. Basell Orlen controls impact of its activities on the environment and measures levels of all emissions. Its technologies are safe and meet the highest environmental standards in sector.

Basell Orlen realizes deliveries for clients located in different geographical regions. The most important purpose is organization of shipments in the most effective way. To achieve this goal BOP implements projects of supply chain reconfiguration. These solutions are driven by customers' needs.



Realization of safe and effective deliveries in the right sequence is crucial in polyolefins sector. In reply to this challenge, Basell Orlen Polyolefins offers best quality products and develops advanced logistics solutions.

The company implements unique projects of supply chain reconfiguration to meet its clients' expectations. BOP realizes the strategy of continuous improvement.

As a result of the best practice, Basell Orlen fulfilled requirements of its German strategic client. After significant changes in the supply chain structure, the reliability and punctuality of deliveries were greatly improved. Additionally, more shipments are now realized by intermodal transport. In consequence, best practice allows to achieve permanent long-term economic, social and environmental benefits.

COMPANY FACTS

Company name: Basell Orlen Polyolefins Sp. z o.o.
Location: Plock, Poland
Industry/sector: production and sale of polyolefins
Company size: Large
Employees: 400

Services/products offered:

- Polypropylene
- low and high density polyethylene

Further case related logistics figures:

- decrease in total logistics costs by 10%
- 99% of deliveries realized on time
- increase in loading capacities of transport vehicles from 25 to 27 tonnes



- ➔ railway transport of product „A“
- ➔ railway transport of product „B“
- ➔ road transport of product „A“
- ➔ road transport of product „B“
- logistics hubs
- customer's localization

THE SOLUTION at the initial stage

One of the strategic BOP's clients is located in West Germany. This buyer orders high volumes of two products „A“ and „B“ and requires best class logistics solutions. The most important factors are safety, punctuality (requirement of 98% of deliveries on time) and flexibility. Additionally, realization of deliveries in the proper sequence is critical due to optimization of customer's production costs.

At the beginning of cooperation with this customer, Basell Orlen included 2 hubs in logistics system. Both of them were located in Germany. Distance from the buyer's facilities to the first hub was 200 km and to the second one – 500 km. Products were transported by rail to both hubs and then, by road to the final destination. Alternatively, both products were delivered directly from Plock to the customer's facilities by road transport (distance of 1 300 km). This model required the engagement of three different carriers (please see map left).

This system was characterized by lack of transparency and management control. Additionally, the right sequence of deliveries was not ensured. As result, client covered unnecessary costs because of intervals and disruptions in its production process. Moreover, rate of deliveries on time was unsatisfactory. Basell Orlen Polyolefins made an effort to reconfigure this supply chain structure.



Basell Orlen Polyolefins is recognized for innovations and advanced technologies in its production plants and logistics platform in Poland (Plock).

THE SOLUTION at the final stage

Firstly, the structure of the system was changed. Nowadays, the best model includes 2 hubs, but only one of the former points and the new one, which is located 60 km away from the customer's facilities. Additionally, railway connection between Plock and new hub was arranged. As result, the share of intermodal shipments significantly increased - from 50% to 90% of global volumes. Currently, all deliveries of „A” product are intermodal. Product „B” is delivered directly from Plock to the buyer localization by road.

In the best class model, the main part of products is transported by railway transport. Basell Orlen Polyolefins cooperates with one logistics service provider which specializes in rail shipments. This partner is well-known on the German market and develops direct communication with BOP's customer. Logistics provider organizes and manages deliveries in the right sequence.

This project of supply chain structure reconfiguration is great example of best practice. It concentrates on following issues: change of hubs' localization and usage of intermodal transport on large scale. Specially, this project illustrates need of continuous improvement of logistics solutions. It also proved that changes in supply chains are mostly driven by customers' expectations. In this case, they caused no doubt many advantages for the focus company and its shareholders.



- railway transport of product „A”
- road transport of product „A”
- road transport of product „B”
- logistics hubs
- customer's localization

CHALLENGES

Challenge 1: Localization of hubs to ensure efficient flow of products in supply chain. Distances between these points and buyer's facilities play important role. Basell Orlen reacted to customer needs and changed localization of hubs.

Challenge 2: Access to transport infrastructure and network of connections were required for organization of intermodal deliveries on such scale.

Challenge 3: Realization of deliveries in the right sequence, otherwise customer's costs of production process rise.

Challenge 4: Choice of the logistics service provider which specializes in railway shipments and meets all requirements regarding transport of polyolefins.



Logistics platform (95 000 m²) is key element of BOP's supply chain structure in Poland. 63 silos build central part of this construction. Main processes which take place here are: warehousing, packaging and loading. Basell Orlen makes use of environmentally friendly Pallet Return System.

"TAKING INTO CONSIDERATION KEY CUSTOMER'S HIGHEST REQUIREMENTS IN TERMS OF DELIVERY ACCURACY AND SUPPLY CHAIN FLEXIBILITY, WE DECIDED TO DEVELOP THE INTERMODAL CONCEPT OF DELIVERIES THAT THANKS TO FULL COMMITMENT AND ENGAGEMENT OF ALL PARTIES (CUSTOMER, SUPPLIER, LOGISTIC SERVICE PROVIDER), HAS BROUGHT IN LONG TERM PERSPECTIVE NOTICEABLE ECONOMIC AND ENVIRONMENTAL BENEFITS."

Mr. Krzysztof Sieczkowski, Supply Chain Director



Additionally, internal container terminal with rail connection is located on this platform's area.

LESSONS LEARNED

- Key driver of the unique supply chain reconfigurations is business strategy of the project leader. Basell Orlen Polyolefins managed all changes which were required.
- Reconfiguration of supply chain is process-oriented. In consequence, it has significant impact on different processes, e.g. transport, warehousing, inventory management, customer relationships management.
- Logistics solutions support successfully building of long-term relations with customers on B2B market. Source of competitive advantage of Basell Orlen Polyolefins is not only production of high quality products, but also logistics and supply chain management.
- Best practice can be implemented in close cooperation with logistics service provider, whose core competence is required by the focus company. Basell Orlen's logistics partner guarantees best-in-class organization of intermodal deliveries in proper sequence. This provider also adds value because of trustworthy relations with BOP's client.
- Best practice development requires continuous improvement. It is especially important on highly competitive markets.

SUCCESS FACTORS

- access to the infrastructure
- appropriate changes in supply chain structure
- excellence of logistics processes in supply chain
- implementation of solutions suitable to customer needs
- creativeness of logistics managers in Basell Orlen Polyolefins
- business cooperation with well-known, specialized logistics service provider

THE BENEFITS

This best practice project allows to achieve economic, social and environmental effects. Basell Orlen Polyolefins designed the supply chain configuration, which causes positive long-term results. Both BOP and its customer gain several important advantages. The biggest benefits are achieved at the economic level. Regarding the environmental and social dimensions the effects are well recognized, but not measured.

Economic

- higher key customer satisfaction
- 99% of deliveries conducted on time
- increase in loading capacities of transport vehicles (from maximal level of 25 tonnes for road transport to 27 tonnes for intermodal shipments)
- higher effectiveness in inventory management
- decrease in total logistics costs by 10%, in consequence higher client's profitability
- minimization of customer's costs caused by intervals in production processes

Environmental

- development of „green transport corridors“ in European countries
- more effective facilities and vehicles use
- positive impact on resources utilization
- reduction of CO2 emission
- decreased fuel consumption (70 road shipments per month fewer than before)

Social

- decreased number of trucks on European roads
- reduction of road accidents number
- decrease in noise emission
- positive impact on air cleanness
- indirect, positive influence on health of local societies

TRANSFERABILITY

Country

+

Sector

+

Company Size

0

Transferables

- Transferable across any geography.
- Transferable across not any company size.
- Transferable to other sectors, but the industry has to include products, which can be transported effectively by rail.

Limitations

- Access to the infrastructure and connections system is critical.
- Sales volume of the company should be high enough to ensure effectiveness of railway deliveries.
- Products' characteristics play important role.

++: very high, +: high, 0: neutral, -: low, --: very low



Baxter

Transport of healthcare products
by inland navigation



Transportation of healthcare products by inland navigation

PROBLEM DESCRIPTION

Reliability is the main concern for Baxter in its worldwide healthcare business. The reason is strict deadlines and firm demands from the healthcare sector. Uncertainties in transportation and delivery processes are not accepted, neither by the customers nor the Baxter transportation management group.

A long lasting problem has been the uncertainty in the delivery time from the large ports in Europe, such as Rotterdam and Antwerp due to variation in service availability in the port and congestion on roads after leaving the port area. The port in Antwerp is 111 km from the Baxter European distribution center at Lessines and Rotterdam 215 km. The involved roads have high risk of congestions, especially close to the ports and around Brussels.

This situation makes it very difficult for the company to get reliable deliveries from the deep sea part of the ports to the distribution center in the hinterland. The variations in delivery time could be between 8 hours and up to 3 whole days. At the same time, congestions on roads and around the ports makes it difficult to deliver to the ports for export and be in time for departing ships used in the company's distribution of products from the European distribution center in Belgium to their distribution centers in other areas of Europe and the world.



Inland navigation requires efficient inland terminals



Baxter uses inland navigation to transport many of their medical and biotechnical products from the deep sea areas of the port of Rotterdam and Antwerpen to their distribution center located in Lessines, Belgium instead of traditionally using road transportation.

The inland navigation solution is used as well for export of products from the European distribution center to regional distribution centers around the world using the same containers and thereby increasing the utilization degree of the containers and decreasing empty runs.

COMPANY FACTS

Company name:	Baxter International Inc. (USA, global enterprise)
Location:	Lessines, Belgium (European Distribution Center)
Industry/sector:	Healthcare
Company size:	Large
Employees:	46 500 employees
Turnover:	11 300 m. \$

Services/products offered:

Development and production of healthcare products.

Baxter International Inc. is a global healthcare company that, through its subsidiaries assists healthcare professionals and their patients with treatment of complex medical conditions including hemophilia, immune disorders, kidney disease, cancer, trauma and other conditions.



THE SOLUTION

Baxter's supply chain management coordinates product from tens of thousands of suppliers worldwide to the different Baxter manufacturing facilities around the world, develop manufacturing schedules to meet forecasted demand and then inventory and distribute finished products to customers in more than 100 countries. Distribution reliability is very important for the company and it relies on its supply chain to deliver the right products at the right time.

In seeking for more reliable transportation solutions in Europe, Baxter looked at inland navigation alternatives in the Netherland and Belgium area where it has considerable volume to and from its European distribution centre (EDC) in Lessines near Brussels. The inland navigation alternative turned out to be feasible, after having established relations with the right service providers in the area.

Baxter uses inland navigation to transport many of their medical and biotechnical products in Europe instead of traditionally using road transportation. Baxter introduced the use of inland waterways from the deep sea areas of the ports in Antwerp and Rotterdam in the mid nineties and has today (2007) more than 1000 containers shipped from the ports each year to the European distribution centre.

The distance from the port of Rotterdam to the European distribution centre in Lessines is 215 km and 111 km to the port in Antwerp. The inland navigation solution includes a barge transportation from the deep sea port areas where the barges are loaded to the Avelgem Container Terminal located 34 km from the EDC. The delivery time from Antwerp and Rotterdam is 18 respective 14 hours which gives an opportunity for 24 hour service in average. The containers are transported from the Avelgem Container Terminal by trucks.



After the success of the import solution, Baxter is not only using the inland waterways distribution platform for import but for transport of its exports as well of products from the distribution center to regional distribution centers in Europe and around the world. The containers used for import are turned around and used for export, increasing the utilization degree of the containers and decreasing empty runs of containers.

The solution has turned out to be a success in various ways. Cost savings of 40% compared to earlier solutions has been realized. At the same time, delivery reliability increased as variation in delivery decreased.

Environmental benefits are obvious as barges only consume 20% of the fuel needed to transport each kilo goods compared to truck road transportation in average. 1 ship can in average carry as much as 120 trucks with 40 foot container load space eliminating a lot of trucks off the roads.

STRATEGIC IMPLEMENTATION & CONTINUITY

By establishing long term relation with the appropriate partners in the inland waterway solution, all are engaged in developing the solution and ensuring that it will work long term.

By ensuring less environmental impact, the solution has in itself become sustainable. Furthermore, the solution is in line with Baxter's strategy of Green Supply Chain where the carbon footprint of their products is to decrease in the future.

In addition, the solution turns out to be less costly than earlier transportation solutions and more reliable giving opportunities to increase use of inland waterways in the future.



CHALLENGES

Challenge 1: To get transportation and logistics companies to participate in the setup, both at the deep sea port area and inland container terminal. Service in the deep sea ports with possibilities for loading on river boats or barges needed to be established.

Challenge 2: To ensure that transportation costs would not exceed earlier costs of using road transportation.

Challenge 3: To secure that total transit time would not increase with the new solution.

Challenge 4: Find a service provider to establish a stock yard for the solution.



"Inland navigation proofed to be our best option, it is relatively fast, reliable and especially environmental friendly"

Romain Schollert, Project Manager
Inland navigation

High value goods traditionally not moved by inland navigation. The Baxter solution is innovative as it puts together a complete service solution that enables high value goods to be transported by inland navigation. The solution contributes to decreased road congestion and is an encouragement for other companies to use inland navigation for high value goods.

LESSONS LEARNED AND SUCCESS FACTORS

- Inland navigation has throughout the years mainly been used for transportation of low value goods such as bulk products or project cargo. Inland navigation of high value goods works equally well.
- Reliability of inland navigation wins over transportation on roads and little or nothing is sacrificed in flexibility using inland navigation services in spite obvious limitation due to infrastructure dependency.
- Increase in reliability was the main driver behind the solution and by that keep variations in delivery time at its minimum. At the same time, the new inland navigation solution costs decreased total transportation costs by 40%, a result that was pleasant but not prioritized in the beginning.

THE BENEFITS

Economic

The solution has improved service quality as delays have decreased. The customer service level has increased due to improved delivery reliability. Due to better inventory monitoring and control, product availability in the European distribution center has increased. Other impacts are easier planning of distribution activities. The containers used for import are used as well for export decreasing empty runs and increasing resource utilisation. Utilization of warehouse labour has increased as it is easier to plan activities due to more reliable delivery from the ports and better information on transportation progress. The transportation costs have been reduced by up to 40%. Planning of activities easier and visibility of activities better. Better product availability helps to answer customer needs. Products can be delivered sooner to the customer so in case of sudden increase in demand, products will arrive sooner.

Environmental

The inland navigation solution has lowered CO2 emission as approximately 500 less truck are driving on the road each year. The river boats use only 20% of the fuel to move one unit a certain distance compared to road transportation. The river boats use only 20% of the fuel to move one unit a certain distance compared to road transportation. Land use is impacted as modal shift is made and needs for inland container terminal space increases. At the same time need for space in the ports can be reduced somewhat as some amount of containers can be stored at the inland terminal instead of the port area.

Social

With more than 500 less truck on the road each year, likelihood of accidents to occur diminishes somewhat and accidents in inland navigation is not likely to increase due to Baxter's solution. The employment levels have been affected as the demand for road transportation has been lowered but at the same time the demand for inland waterway personnel has increased. The effects are though not directly comparable, one river boat can carry between 100 and up to 500 containers (TEU) providing much higher employment utilization for each load unit compared to trucks that can only carry two units.

TRANSFERABILITY

Country

+

Sector

+

Company Size

0

Transferables

Using inland navigation for movement of high value containerized goods can be utilized for all kind of goods from various industries that use containers in their transportation solutions. The solution is applicable in all geographies that have inland waterways and an infrastructure of inland container terminals that have an effective connection to road infrastructure to move the containers the last distance to the customer.

Limitations

The use of inland navigation has great transferability although some constrains exists. The main constrain is the access to infrastructure including ports, inland waterways, inland container terminals, and roads if the company has not direct access to the terminal. In addition, service providers must exist that provide the necessary services and the volume of the goods enough to make the solution economically viable.

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European Intermodal Award