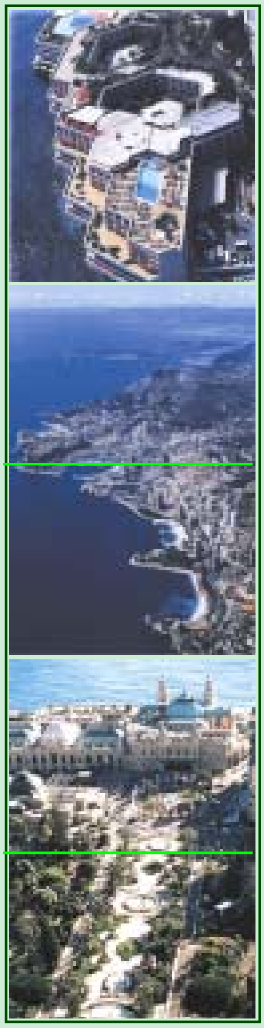
EPCA Report

The European Petrochemical Association

on 29th Logistics Meeting

Monaco 9 - 13 November 2002



“ Challenges and Opportunities in the Changing Landscape of Moving Chemicals ”

Introduction

The EPCA’s 29th Logistics Meeting was held at the Monte Carlo Grand Hotel in Monaco on 9-13 November 2002. Welcoming delegates and introducing the theme of the meeting at the Opening Session, EPCA Logistics Committee Chairman **Niels J A von Hombracht** of Vopak NV pointed out that change is now a permanent feature of the chemical industry. The dramatic changes that have taken place since the last EPCA Logistics Meeting a year ago are a case in point. Logistics service providers (LSPs) need to understand the process of change in order to take advantage of the opportunities it provides and to meet their customers’ changing requirements in the optimum way. Being the best in class offers the best hope for future success.

One of the key roles of the EPCA Logistics Meetings is to keep the Association’s membership appraised of the factors driving change in the chemical industry and to assist producers and their LSPs in finding cooperative solutions to problems brought about by change in order to deliver goods to the final customer in the safest, most efficient and most cost-effective way possible.

The Logistics Committee Chairman went on to say that it has been one person more than any other that has driven forward the Association’s recent logistics agenda and that is Paul Evertse, his predecessor in the chairmanship role for the past five years. Niels von Hombracht said that EPCA is lucky to have Paul’s continued presence on the Logistics Committee, at least for another couple of years.

Completing his opening remarks, Niels von Hombracht mentioned that there were 416 registered delegates for the 29th Logistics Meeting, along with 67 partners present in Monaco. The chairman then handed over proceedings to **Michael Buerk**, the well-known BBC TV news anchorman and moderator of many EPCA meetings over the years, introducing him as “our expert, charismatic, challenging and charming moderator”.

A producer’s view

The first speaker was **Kees Linse**, Chief Operating Officer of the Netherlands-based Basell Polyolefins. His keynote presentation, entitled “Chemicals Today: A Producer’s View”, provided an update on the industry served by the LSPs attending the Logistics Meeting and set the scene for the rest of the conference sessions. The main driver for change in the chemical industry over the past 12 months, he said, has been politics and the most immediate link between politics and chemicals is oil prices. The volatility in the price of naphtha, the principal petrochemical feedstock in Europe and Asia, has fluctuated more over the past 12 months than in the previous 10 years.

Price volatility has a strong negative impact on chemical industry profitability, primarily due to the demand uncertainty it creates. In such a situation, the industry is squeezed between price fluctuations and demand uncertainty. In addition to the current price volatility, there has been a continuous compression of margins over the past 10 years. As a result, chemical producers are having to run faster just to remain in the same spot. Those best positioned to achieve profits are the major chemical producers that have invested in the new generation of large-capacity chemical production plants. Notwithstanding the capital expenditure on such facilities, they yield the lowest unit cost.

Chemical producers have also just emerged from a decade of major restructuring through mergers and acquisitions. In 1990 the world’s top ten polyolefin producers controlled 29 per cent of global output, leaving plenty of room for numerous smaller players with a regional focus. Today, the top ten producers account for more than 55 per cent of the market and the average size of a top ten player is now four times that of a decade ago. The only name from the 1990 list still in the top ranking is Dow.

Logistics and the value chain

On the plus side, pointed out Kees Linse, chemicals remain a growth industry that continues to harness technology to integrate petrochemicals production into the hydrocarbon value chain and to improve its established record of operational excellence. The chemical industry is also one that offers opportunities. Year-on-year output of most petrochemical products, especially polymers, still exceeds GDP growth. In Asia growth is a multiple of the GDP rate; demand in China, for example, is outpacing local production to the extent that the country is expected to be importing 12 million tonnes of polyolefins per year by 2010.

Logistics, the costs of which represent 10 per cent of chemical industry turnover, link the two ends of the value chain. At the one end are the worldscale petrochemical production plants and, at the other extreme, the polymer/converter/end user side, with its diverse geographical spread, just-in-time delivery requirements and high customer service standards. The challenge for the logistics industry, stated Kees Linse, is to balance the demands stemming from the two ends of the value chain cost control and customer service performance.

An important factor to take into account in facing up to this challenge is sustainability - an issue which has taken a central position in both the public mind and chemical company boardroom decisions. The general public perceives chemical production and logistics to be activities that have a negative environmental impact. It is up to the chemical industry not only to work to continuously improve its environmental credentials but also to inform the public about the important and diverse benefits that the chemical industry brings to our everyday lives.

Sustainable mobility

Industry needs to continue to deliver innovative products at lower cost using environment-friendly processes and, thus, play a direct part in promoting sustainable development. However, it is also important for the authorities to take a holistic approach to sustainable development in order to achieve the best overall compromise solution. The chemical industry also has a key role to play in this consultative process, not least in communicating its achievements and capabilities and making its expertise available.

The holistic approach also needs to be applied to chemical logistics. Although the European Commission’s new White Paper for a European Transport Policy aims to promote sustainable mobility, in line with the chemical industry’s drive for sustainable development, unfortunately the document too often focuses on single issues and looks to taxation to achieve specific, one-dimensional objectives. The White Paper, said Kees Linse, has missed an opportunity to tackle the overall transport problem.

Kees Linse endorsed the three principal CEFIC comments on the White Paper. Firstly, investments must be made in European transport infrastructure, with funding from existing taxes, that supports total intermodal solutions. Second, the shift of freight from road to rail and inland waterways should be encouraged via financial and service improvements, not punitive road taxation measures. Finally, innovation should be harnessed to effect improvements in the environmental performance of existing logistics activities rather than restricting or prohibiting certain activities. Cooperative action involving all players active in chemical logistics, including producers, LSPs and regulators, provides the best chance of success when employing the holistic approach to create value for society.

PANEL DISCUSSION

The Future of European Chemical Transport

Following his presentation, Kees Linse was joined on the platform by a number of specialists for a wide-ranging Panel Discussion on "The Future of European Chemical Transport". The participants were as follows:

Panellists:
Dr Hans-Jörg Bertschi, Bertschi
Kees Linse, Basell Polyolefins
Wout Pronk, Geest North Sea Line
John Hugh Rees, European Commission, Transport & Energy Directorate (TREN)
Rob Spierings, ShortLines

Moderator:
Michael Buerk, BBC TV

John Hugh Rees, one of the primary contributors to the EU White Paper on European Transport, declared that transport in Europe was the victim of its own success. Transport has become too cheap and not enough attention or investment is being given to new infrastructure, even though the demand for transport is growing at 3 per cent per annum. European road congestion has reached a stage where it is causing economic losses equivalent 0.5 per cent of the region's GDP. That figure is expected to increase to 1 per cent by 2010. The necessary investment in infrastructure to reverse this harmful congestion trend will have to come primarily from the private sector.

Hans-Jörg Bertschi echoed the sentiments about congestion and the need for additional investment. Some 50 per cent of the freight movements carried out by his company now involve a rail leg in the journey. However, rail options are limited due to the lack of commitment by many European countries to the process of rail liberalisation. The transport industry must not only work to provide a full portfolio of attractive alternatives, such as rail and shortsea services, but also do its homework in order to offer less costly, safer and more environmentally friendly transport.

Rob Spierings stated that there are great opportunities for providers of rail transport services in Europe but the fact that rail is still two to three times too expensive hinders progress. Also, there is lack of coordination and management drive in developing rail freight projects in Europe. The emerging private European rail ventures are up against not only traditional, competitively priced road haulage services but also the monopolistic state rail companies anxious to keep newcomers out. The rail liberalisation process now getting underway needs to be monitored to ensure that the state railways do not use their considerable clout to aggressively acquire the nascent private sector companies and effectively perpetuate their monopolies.

Under EU Directive 12/2001, which EU member states must adopt in national law before March 15, 2003, the most important rail routes all over Europe must be opened up and made freely accessible to all undertakings engaged in rail freight and in possession of a suitable license. It is anticipated that the quality and productivity of rail freight will be strengthened by this new regime. It is crucial to the future of European rail freight that they are, said Rob Spierings

Representing shortsea shipping interests, **Wout Pronk** explained that ship operators are not seeking to compete with road hauliers and rail services but rather to cooperate with them to open up up new multimodal options. When asked if European shortsea shipping can grow by 40 per cent by 2010, the target set out in the EU White Paper, Wout Pronk replied that it is possible if the necessary freight volumes can be achieved at the right price. Shipping lines will have to convince not only the chemical industry but also the foodstuffs and automotive sectors, amongst others, of the advantages of using the sea mode as part of a multimodal journey. Having adequate freight volumes will enable the regularity of service required by the customer.

Benign regulations

The panellists then turned to the question of regulatory controls and a consensus was reached that unfettered deregulation poses too many dangers and doesn't often work. However, while some form of regulatory control is required, it needs to be fair and not overly restrictive. The best form of regulation is that which embodies best practices developed by the industry over a number of years and which is drawn up in cooperation with the industry. Then, it must be properly enforced.

On the subject of limiting the growth of road transport, another White Paper aim, John Hugh Rees said that it will be impossible for either the private sector or the public sector or a combination of both to invest their way out of road congestion by providing new infrastructure. The Commission has taken the view that progress can only be made by introducing a form of charging for road use and to lock these charges into the overall cost of transport.

Unlocking value in the supply chain

Logistics and supply chains are relatively new terms in the jargon of business management, having first appeared in the 1980s. They are also open to a wide range of interpretations as business concepts. **Alan Braithwaite**, Executive Chairman of LCP Consulting in the UK, sought to bring them into focus for EPCA delegates in his presentation on "Achieving World Class Supply Chain and Logistics Performance in the Chemical Industry".

Alan Braithwaite sees supply chain management as an extension of the basic logistics function and as a means of unlocking value, through specific engineering actions, in the linkage between product manufacture and product consumption. Identifying where value can be unlocked starts with asking the customers what they want. Today, when cash flow is all important, no-one wants money tied up in large inventories. Customers want just-in-time deliveries, minimal stocks and product variety and choice. They are driving the transition from stock to flow management.

Alan Braithwaite suggested to EPCA delegates that the current parlous state of the chemical market, not least the overcapacity, overseas competition, falling real prices, high capital expenditures and tight margins, makes it essential that industry participants do all they can to unlock the value hidden in the supply chain. Industry leaders in the electronics, retail, consumer and automotive sectors all vouch that getting the best out of their supply chain management is key to their success.

Vision for world-class supply chains

However, while there are similarities in the supply chains of the chemical and consumer sectors, there are also basic differences which require the chemical industry to take a different approach. While costs are more evenly distributed in foodstuffs logistics, for example, in the chemical sector feedstocks, conversion and customer delivery represent the three major cost blocks. These blocks are self-contained and there is no reason for the people involved with these individual functions to communicate with each other.

Alan Braithwaite acknowledged that as chemical producers move to optimise their supply chains, they have to accommodate this functional split. Whereas companies in the consumer sector have moved more or less completely from a functional to a process view of managing the business, the transition in the chemical industry must be from a functional to a function AND process approach. In other words, the cross-functional activities need to be managed alongside the conventional functional chemical industry disciplines of acquire, convert and distribute. Making this process orientation will help eliminate waste across the chemical supply chain, e.g. that which occurs due to double handling, empty running, obsolete or excess inventory, plant inefficiencies and excessive emergency shipments.

World-class trends and principles

Alan Braithwaite identified over 20 emerging trends that characterise a world-class chemical supply chain. These trends, which can be grouped under the heading of either Structural, Operational or Technology, have already been taken up, to varying degrees, across the industry. Those companies enjoying the greatest success are those ensuring the highest level of interaction across the three categories. All the trends accord with the following eight core principles of world-class supply chain management:

- functional excellence
- synchronisation of processes
- real-time visibility of accurate data
- one number planning, around a single forecast
- segmentation of products and customers
- optimised network
- time compression due to increased cycle frequency and rapid turnarounds
- aligned and relevant KPIs

To make this vision of a world-class supply chain a reality represents a considerable challenge for the chemical industry, concluded Alan Braithwaite. Paradoxically, the functional excellence that has driven past industry growth and success is now a barrier to taking a more global, process view of the organisation. Nevertheless, if the whole organisation can get behind a supply chain approach that reconciles the needs of both function and process, the potential rewards are huge. After all, supply chain management is fast-becoming one of the few areas providing opportunities to mitigate against the current difficult market.

PANEL DISCUSSION

SUPPLY CHAIN ISSUES

Following his presentation, Alan Braithwaite was joined on the platform by a number of specialists for a wide-ranging Panel Discussion on "Supply Chain Issues". The participants were as follows:

Panellists:
Jan Joop Alberts, Brenntag
Alan Braithwaite, LCP Consulting
Dr Horst Kubek, LKW Walter International
Reg Lee, Stolt-Nielsen Transportation Group
Joachim Prengel, BASF
Carel Robbeson, Railion Benelux

Moderator:
Michael Buerk, BBC TV

The panellists brought a touch of realism to the proceedings with comments on the current state of play and the obstacles that need to be overcome before a new enlightened supply chain regime can be implemented. Looking back on almost 30 years' experience of chemical logistics, **Joachim Prengel** said that while forecasting has been extensively discussed, as yet only limited progress has been made in putting the concept to good use. While more and more people are considering the intricacies of supply chain management, there are fewer able to understand and process a bill of lading. It is important that the focus on functional excellence is not relaxed because those engaged in chemical logistics are in danger of losing it.

Reg Lee stated that it was still a case of "short-term gain, long-term loss". Chemical producers fight to secure freight at the lowest possible rate and shipowners, through their reluctance to cooperate with each other to minimise empty running, do themselves few favours. Chemical tankers represent an asset which is underused 30 per cent of the time. Reg Lee did say that the drive to make the supply chain more transparent is a good thing; the logistics function was never visible in the past.

Jan Joop Alberts pointed out that single sourcing would yield many benefits but that it is a difficult goal to achieve in the chemical industry due to the diversity of products handled, customers and customer locations. Joachim Prengel mentioned that BASF would not allow single sourcing across the board on principle, but often single product streams are handled by one LSP.

Dr Horst Kubek highlighted the fact that the European Chemical Transport Association (ECTA) provides a vehicle for the industry to speak with a single voice. In addition, the European safety and quality assessment system (SQAS) initiative and ECTA guidance documentation provide a foundation for the establishment of sound, long-term relationships between chemical producers and their LSPs. However, Dr Kubek said it was still early days and that cost was still the main driver. The industry was probably no more than 10 per cent down the road to better, more long-term relationships.

On the subject of rail and the supply chain, **Carel Robbeson** realised that for the rail mode to make inroads in Europe it will have to reduce its cost levels and improve reliability. He pointed out that Railion Benelux has shown that it is possible for an unsubsidised railway operation to make a profit by tackling these issues and being proactive in establishing the type of service a chemical producer will be willing to consider. For example, Railion has recently been successful in taking over some of the rail operations a customer previously ran in-house.

The Panel Discussion ended with dialogue on the problem of keeping long-term relationships fresh and effective. Alan Braithwaite acknowledged that there have been in the past high-profile strategic alliances between shippers and their LSPs which did not work out. Trust is the key ingredient. Joachim Prengel commented that there are many capable LSPs who have brought innovative solutions to new long-term contracts with chemical producers. However, the challenge is to maintain the initial enthusiasm and that requires an equal commitment from both parties. That joint commitment, said **Niels von Hombracht** in his final summing up of the session, entails open-mindedness to new ideas, the drive for continuous improvement, good communications and a desire to eliminate waste.

EPCA LOGISTICS SCHOLARSHIP WORKSHOP

Paradigm Shift: From Stok To Flow Management

Frank Otten of DSM Chemicals introduced the final session of the 29th EPCA Logistics Meeting - a Workshop based around the postgraduate research work of seven students from Eindhoven University in the Netherlands and Stanford University in the US under EPCA sponsorship. The EPCA programme of support for postgraduate projects related to chemical logistics not only helps in achieving a better understanding of the challenges facing the industry, it also encourages interest in the chemical industry and chemical logistics amongst young people.

In this particular project the seven students focused on "Bulk Chemical Supply Chains: Moving From Stock to Flow", very much in line with the theme of the Logistics Meeting. Two of the students - **Sarah Rutledge** and **Bert van de Bunt** - presented the results of the overall project, which was carried out in April-May 2002 and utilised data collected from BASF, Bertschi, Odfjell, Shell and Wacker Chemie. The researchers started from the premise that molecules spend too much time sitting in storage rather than in transit. The aims of the study were to determine why companies hold so much stock; to compare US and European practices; and to identify where improvements could be made in the supply chain.

Weak linkage in the chain

Sarah Rutledge informed delegates that their research led to several general conclusions. Transport systems used by chemical producers are inefficient and little effort is made to coordinate overall transport requirements. Such coordination would be difficult in any case due to the poor demand forecasting and inventory control practices which prevail. Because comparatively little information sharing goes on, the industry is prone to the "bullwhip" effect whereby a last-minute request from the customer can have major repercussions all along the supply chain.

Comparing the US and Europe, Sarah Rutledge said that rail accounts for a much larger share of the overall transport market in the US. Although rail transport is in the hands of private operators in the US, there are so few players that, in effect, monopolistic conditions apply. In addition, petrochemicals tend to be given low priority. There are less distribution centres in the US and these centres are located closer to the customer than is the case in Europe. Finally, the US is better at sharing information amongst supply chain participants and at managing control of inventory. Overall, US chemical supply chains are closer to the flow paradigm than those of Europe.

Information sharing

Bert van de Bunt then outlined some recommendations stemming from the research work at the two universities. He said that the most critical issue is the need to make more efficient use of LSPs and that this cannot be done without better information sharing to reduce demand uncertainty and to improve planning and control. The centralised management of a producer's full range of LSPs would be a good first step. This could entail the use of a lead LSP or a fourth party LSP (4PL) in a coordinating role. Step two is smarter inventory control. Rather than have the main stock point at the production plant backed by smaller storage centres near the customers, the bulk of the inventory should be moved to those stock points close to the customer. Only marginal stocks need to be held at the production site. The students estimate that smarter stock control will yield to a reduction in inventory investment of 20-35 per cent.

PANEL DISCUSSION

Paradigm Shift: From Stock to Flow Management

Following their presentations, **Sarah Rutledge** and **Bert van de Bunt** were joined on the platform by a number of specialists for a wide-ranging Panel Discussion on the issues raised in their study report. The participants were as follows:

Panellists:
Sarah Rutledge, Stanford University
Bert van de Bunt, Eindhoven University
Alan Braithwaite, LCP Consulting
Johan Devos, Bertschi AG
Dr Jan Fransoo, Eindhoven University
Olav Tangeraas, Odfjell
Eric van der Werff, Shell
Dirk Wenzelburger, BASF

Moderator:
Michael Buerk, BBC TV

In the discussions several established industry hands commented how difficult it is to alter the status quo and to move to the flow management paradigm. **Olav Tangeraas** said that it is established practice in bulk chemical shipping for a producer to go to four or five different shipbrokers requesting separate tenders for individual parts of its overall transport requirement, and there is no sign of this changing. **Eric van der Werff** said that Shell had considered amending its established practices and centralising logistics activities to a much greater extent but this effort had come to nothing due to fears over the legal implications and of losing competitiveness.

Dr Jan Fransoo, the supervisor of the students' project, suggested that a useful first step would be for the chemical majors to open up on information sharing with their LSPs on inter-company shipments within the group. This approach should reveal that there are savings to be made in the supply chain when LSPs have the opportunity to plan their operations to optimum effect over the longer term.

In a comment from the audience, **Leen de Rijke** mentioned that De Rijke's 40 years of experience in serving the transport needs of the Rotterdam petrochemical industry has shown that the concept of a 4PL is a bridge too far for the chemical logistics industry. De Rijke has served particular end customers for so long that, in effect, it is better placed than the producer to know exactly what the requirements of these customers are. In another comment, **Niels von Hombracht** pointed out that there is also a need for a sharing of information with the various departments of the chemical producer and that this does not always happen.

The accuracy of the information that is shared was another point raised. **Dirk Wenzelburger** cautioned how difficult it is to provide accurate forecasts for more than three months ahead due to the rapidly changing nature of the industry. Also, the speciality and commodity chemical supply chains have different priorities which need to be accommodated. Ultimately, however, it is impossible to customise every business stream and a suitable trade-off has to be established.

Johan Devos commented that matters are not helped by the fact that the chemical LSP community is so fragmented. Their challenge is to remain viable over the longer term, especially if their operation is limited in size, while providing the level of service required. Chemical LSPs, in general, need to adopt a more integrated approach and to utilise benchmarking techniques to gauge their performance against industry best practice.

In concluding the session, Olav Tangeraas said that it was agreed that the chemical industry is different from other commercial activities and optimising its supply chain presents a unique set of challenges. Despite an increasing amount of lip service paid to the concept in recent years, progress has been slow and much remains to be done if the promised advantages of an optimised supply chain are to be realised.

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