

# Report

## EPCA Interactive Supply Chain Workshop

Frankfurt, 2 and 3 March 2010



## COMING OUT OF THE ECONOMIC DOWNTURN

### Executive Summary

P. Gooch

**“Global chemicals are currently facing a challenging reality and uncertain future with major variables (economy, regulatory, new technology). Three global macro scenarios have to be considered: doing better than today (Resilience), follow the current trajectory but containing some shifts (Transition) or getting worse (Dislocation). “We appear to be in the trajectory of transition, with less growth and more regulation, especially on CO<sub>2</sub>.” Deloitte Consulting**

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The consequences of the recent financial crisis are both far-reaching and unpredictable. Despite the recent recovery there is still a high degree of uncertainty and caution about whether this is sustainable, particularly in the light of high levels of sovereign debt around the world. The fact that the “unthinkable can happen” has severely undermined the confidence of central bankers, authorities, and of course, the consumer.

In the past few months, chemical companies have focused on cash, and inventories were reduced to a point where they were no longer sustainable. Destocking and volatile demand can lead to a bull-whip effect through the supply chain, causing supply interruptions and a general expediting and service level deterioration, and there is evidence of this already happening. Lack of visibility on the channel and end markets will further complicate the situation.

“The industry is not sufficiently using its insight in their customers’ business, with poor coordination between sales and operation planning (volumes and quantities) and financial planning on the other hand”. Deloitte

So with the memory of the recent recession uppermost in their mind, some 70 senior supply chain executives from Producers, Logistics Service Suppliers, Consultants and Industry Associations gathered in Frankfurt on March 2-3 to discuss the themes of “Coming Out of the Economic Downturn” and “Green Supply Demand Chains”.

Inspired by keynote speeches from Jos Verlinden, CEFIC Logistics Director; Peter Praet of the Belgian National Bank, Dr Willem Vaessen of Deloitte Consulting, and Declan Supple of Accenture, the executives debated the issues in lively roundtable sessions and reported their findings back to the total group.

### **Coming Out of the Economic Downturn**

Although the Workshops generated few truly innovative ideas, they served as a timely reminder of what the industry should be addressing through a turbulent period of transition and high volatility. It was noted that although this has already caused some changes in practice, the same organisations and processes largely prevail which, is feared, will hamper progress. It was also observed that Europe is not homogenous in terms of the impact of the crisis...for example there are major differences between the Mediterranean Rim countries, Eastern Europe, and the UK. So in terms of response, one size does not fit all. The following major recurring themes were reported by the Round Tables:

**Collaboration** ranked high in the workshop discussions and also received attention from the keynote speakers. A crisis often demands or drives various forms of collaboration, but although it may deliver short-term gains, can they be sustained once the recovery is in place, and what is the long-term impact on the market? As has been witnessed in previous Supply Chain Think Tank discussions, the fear of supplier-power or producer self-interest has frequently caused serious collaborative initiatives to founder. At the end of the day the trust between the chemical company and LSP is at stake.

**Consolidation** in the chemical and LSP sectors is expected to continue. Pressure on lean supply chains will drive opportunities for innovative approaches from both producers and service providers. There was broad-based consensus of the need to move towards more flexible, simplified business models, which should in turn help companies to manage the complex parts of their business and differentiate their offering. These business models will require the enabling support of dynamic adaptive

planning tools rather than rigid ERP systems. Transparent, agile and sustainable supply chains will be supported by investments delivering solutions rather than physical assets.

**Cash:** The Round Table discussions reflected concerns about long-term total cost to serve versus the immediate imperative of managing the short-term cash-to-cash cycle. With limited credit available from the banks the creation of cash from own-operations will be critical to survival. However, there is a trade-off between low working capital in inventory and premium costs of flexibility when responding to variable demand in a make-to-order environment. Prof. Prashant Yadav of the Zaragoza Logistics Centre observed that the single-minded pursuit of efficiency alone, to the exclusion of other factors, would tend to erode margins in the long-run and also has the tendency to create a spot-market mentality.

**Customers:** Innovative partnerships between suppliers, producers and customers will be keys to success in the future. As reported above, Deloitte observed that the industry is not sufficiently using its insight in their customers' business. The Round Table discussions confirmed this, urging the development of common business contingency plans (involving customers and LSP's), more knowledge, collaboration and understanding of customer needs and raising the game in terms of differentiated service.

**Human Resources:** The implications of an ageing work-force and a shortage of the right skills amongst the unemployed captured the attention of a number of Round Table discussions. The technology being applied today and in the future will raise the bar in terms of recruitment and challenge established skill sets. This had been discussed in the pre-meeting and attention was drawn to the Supply Chain Talent Academic Initiative which has started in the United States.

The current recession has triggered M&A, a change in business models and restructuring of existing end markets. New applications and services are emerging. Geographical shifts are underway as we see relocation and rationalisation of global supply and demand, and specialty segmentation. Pressure on assets and asset efficiency will increase. Chemical supply chains will need to adapt to this new reality.



## Measuring and Managing Carbon Emissions in European Chemical Transport: Challenges and Opportunities

**Jos Verlinden**, Logistics Director **CEFIC**

**Public pressure on the transport sector to reduce carbon emissions will grow tremendously in the upcoming years, Jos Verlinden warned, as transport is by far the main contributor to GHG (Green House Gas) emissions growth. Measurement of GHG emissions is an essential first step to develop knowledge-based solutions to reduce carbon emissions and energy consumption.**

Compared to industry or households, transport is still the “bad boy” with GHG emissions increasing by 1,4 % per year over the past 10 years. According to EU stats, transport operations account for 20 % of the total GHG emissions, with about a third being produced by freight transport. Despite considerable gains in energy efficiency of transport, carbon emissions by air, sea and road transport are still increasing, Verlinden reported. The issue ranks very high on the agenda of the new EU commissioners Siim Kallas (Transport) and Connie Hedegaard (Climate Action) who announced to come forward with a “comprehensive package on climate change and transport” very soon.

Some regulatory actions have been taken already, Verlinden recalled. The EU will include air transport in a regional Emission Trading Scheme starting 2012 and puts high pressure on IMO (International Maritime Organisation) to set global rules for reducing GHG emissions at sea by 2011. In spring 2010, DG Environment will publish a study on Transport GHG “Routes to 2050” and decarbonisation will be at the heart of the upcoming “White Paper on EU Transport Policy 2011-2020”.

### Actions Taken by CEFIC

A survey amongst transport and chemical companies carried out by Cefic in 2008 showed that 53 % of LSP (Logistic Service Providers) had already started concrete actions to reduce their transport carbon footprint (CF) compared to only 27 % of respondents from the chemical industry. The main drivers for changes were improvement of corporate image, pressure from customers and cost savings.

In 2009 Cefic asked Professor McKinnon (Edinburgh) to carry out a study on transport carbon measurement and management for chemical transport. As part of this study Prof McKinnon has made recommendations on the average emission factors to be used by the chemical industry for the different modes of transport. In parallel, Cefic is co-operating with Professor Fransoo (Technical University Eindhoven) on a GHG calculation tool for transport he has developed over the last year.

The emission factors recommended by McKinnon have been used by Cefic to prepare a first estimate of the total transport CO<sub>2</sub> emissions of the European chemical industry.

### Calculation of Carbon Footprint

“You can’t manage what you don’t know”, Verlinden said, underlining the need for reliable measuring and calculation tools in order to enable companies to identify reduction opportunities and possible changes to the supply chain design, to calculate the effects of specific investments and to provide data for reporting to customers, for marketing purposes and for life cycle



analysis. Last but not least, companies will have to rely on appropriate calculation methods to comply with possible future legal obligations and corporate commitments.

### Scope

GHG emissions can be measured Tank-to-Wheel (direct engine emissions and emissions from power plants 'fueling' rail), Well-to-Tank (indirect emissions from energy exploration, production and distribution), or by combining both: Well-to-Wheel. To complete the picture, emissions of ancillary services should be included such as storage, material handling or tank cleaning (emissions from cleaning operations can represent up to 7,5 % of transport CO<sub>2</sub> emissions).

### Calculation

Different approaches are used to calculate GHG emissions:

- Energy based approach based on fuel consumption (used by transport companies)
- Activity based approach top-down (using average values) or bottom-up (using detailed transactional data), used by shippers.

### Methodology

Different methodologies have been elaborated, such as the one from NTM (Sweden) and the TERRA method developed by the TU Eindhoven.

## Decarbonisation of Chemical Transport Operations

The most important factors influencing transport GHG emissions are weight and volumes of goods, distance, loading factor, empty runs and the energy efficiency of the transport mode used. Additional factors are the supply chain structure, vehicle capacity and the carbon intensity of the energy source.

Energy efficiency of road transport can be increased by using best available engine technology and state-of-the-art vehicles, by training drivers (eco-driving, Behaviour Based Safety) and by accurate timing to avoid congestion periods. Up to 15 % of emission reduction could be achieved without increasing costs by modal shift to less energy intensive transport modes, Verlinden explained referring to recent studies of TU Eindhoven. The possibility to use alternatives to road transport is however limited, Verlinden pointed out. Increasing taxes in order to shift more goods from road to other modes would therefore only result in more expensive transport, but it won't help reduce GHG emissions, he concluded.

"We are only at the beginning of the journey and a combination of many different actions will be needed", Verlinden said, encouraging the industry to identify the still existing "low hanging fruits" and to reflect on the recommendations issued by EPCA and Cefic in 2004 on Supply Chain Excellence. "Improving logistics efficiency and reducing GHG definitely goes hand in hand!"



## Emerging from the downturn: a macroeconomic view

**Peter Praet**, Executive Director, **Belgian National Bank**, Chairman of the Banking Supervision Committee of the European Central Bank

**According to the Executive Director of the Belgian National Bank Peter Praet, the consequences of the crisis are far-reaching and unpredictable. Excessive confidence in a resilient economy that easily withstood the IT crash in 2001 as well as 9-11 made central bankers, authorities and people forget that the “unthinkable can happen” in a highly interconnected global economy.**

A real estate crisis followed by a bank crisis has always led to long periods of under-performance, Praet recalled. But this time, globalisation and national interventions are additional factors leading to sharp increase in public debt (up to 100 %) and to a severe public financial crisis in many countries. Predictability further decreases, as “we don’t know how politicians and the public will react, but it is clear that the political pressure is going to trickle up from the finance ministers to the top of the governments.” The resentment of populations and its political impact should not be underestimated, he warned.

### “Great Moderation” Comfort

Praet recalled that the world comes from a long period of “Great Moderation” (low inflation, real GDP growth, low volatility) as the consequence of successful politics in the 90s. Emerging countries were following this model. The 2000 IT crash could be absorbed quite easily, as the economy was much more resilient than some feared. This unfortunately created a feeling of self-satisfaction on behalf of the lasting “Great Moderation”, he explained. Excessive confidence in stable policy, open new markets & endless harvesting of fruit made everyone forget that “nothing is sure”. People went into debt, signed long-term contracts. 9-11-01 already brought to our attention that “the unthinkable can happen”. From then on, “we worked enormously on infrastructures to make them resilient to any shock, any scenario of war”, Praet remembered. In the meantime nothing was done to prevent a failure like Lehmann & Bros. “I personally thought it was crazy to let big finance companies run their business as a single portfolio over the whole world - with laws bound to national borders.”

In April 2008, for the first time, an idea of the degree of interconnectivity of global economics emerged. Public intervention changed the situation and showed the limits of the “invisible hand”. “But market disciplines and ‘casino banking’ are very harsh, too harsh. They often clash with democracy”, he said referring to the current situation in Greece.

### Policy Framework

As Regulatory authorities, he said, we were “captured” just like all other authorities by smart guys who presented risk management models which were showing that institutions were safe with a probability of 99.9 % drawn from often complex statistical models. Now, fundamental rethinking of the policy framework is underway, considering the pre-crisis consensus and discussing emerging views for the post-crisis period. “Spotting so-called Best Practice in the sector and trying to put this into regulation is now seen with much more critical eyes.” **The ambition of new regulation is to master the financial cycle.**

A fundamental issue revealed by the crisis is that some institutions have been “too big to fail” eroding market discipline. Moral Hazard is much more widespread as previously thought. Most bond investors in banks recovered all their money as contracts are still up since the banks have been rescued. These clearly indicated that the stipulated discipline does no work. “The loss absorption capacity did not work”, he pointed out, “and this must change.” The calibration work is not yet finished, but Central banks have realised that it is not enough to keep inflation stable. Praet indicated two measures to be taken by central banks: setting a link between credit and GDP and ask banks to provide for more capital when credits increase faster; secondly, internalize externalities. One of the possible reactions of the industry might be a renewed interest in vertical control, i.e. controlling the whole chain of production.

# The Decade Ahead: Preparing for an unpredictable future and a volatile supply chain in the global chemical industry



**Dr. Willem Vaessen** Lead Partner Europe Chemical Industry, Deloitte

**A large industrial study conducted by Deloitte covering the period from 1998 to 2008 in the chemical sector revealed that “the crisis brought some of the homework on the forefront that needed to be done for a while already”, Willem Vaessen explained. He presented the industry’s key trends for the next decade, 3 very different future scenarios and their strategic and tactical implications on supply chain management: Flexibility/ agility, different business models, including “asset light” strategies, and service level differentiation are the main requirements.**

The study presented by Vaessen offers an analysis of financial and operational performance of 231 global chemical players and more specifically a deep-dive into their supply chain (demand and capacity) for ethylene and its key derivatives on the main markets. Deloitte’s experts noted the paradox that the chemical sector is a steady growing sector of strategic importance to the US, China and the Middle East providing work to 2 bn. people in Europe and the US – and still, a sector suffering from insufficient return on equity and market capitalization.

Global chemicals are currently facing a challenging reality and uncertain future with major variables (economy, regulatory, new technology). Three quite different global macro scenarios have to be considered for the decade ahead: <in somewhat simplified terms>, doing better than today (Resilience), follow the current trajectory but containing significant shifts from the developed to the developing markets (transition) or getting worse (dislocation). “We appear to be in the trajectory of transition, with less growth in Europe, more closures and potentially more regulation, especially on CO<sub>2</sub>”, Vaessen believes.

However, none of the other scenarios should be discounted. The detailed report has expert opinion supporting these.

## **Substantial Geographical Shifts**

Before the crisis, the sector already witnessed economic model changes, more regulation, increasing upstream capacities in the developing markets and pockets of overcapacity. The margins came under pressure (spread upstream, eroding of value added premium downstream) and innovation was declining. The current recession will trigger mergers and acquisitions, changing business models and restructuring of existing end markets, with new applications and services and new segments emerging. Geographical shifts are underway as we see relocation and rationalisation of global supply and demand, specialty sub-segmentation and plugging into innovation.

Significant Ethylene capacity investment will take place over the period 2007-2013, according to Deloitte’s forecast, with China and Middle East contributing to 78 % of new capacity during 2009-2013. “This will offer a range of opportunities for investors in down-stream chemical operations & infrastructure as well,” Vaessen pointed out.

## **Excess Capacity in Western Countries to be Relocated**

National governments are increasingly playing a role in capacity building, he said. China is expected to become a net importer, due to significant demand, the Middle East should become a net exporter with access to advantaged feedstock. Driven by free market needs, India will turn into a net importer and merchant buyer. Developed markets on the other hand will post marginal production, driven by significant excess and older capacity.

Growth slowed down in all segments and the sector witnessed eroding margins during the period 1998-2008. Some global end markets took a serious hit during the crisis and will rebound regionally. Only Personal Care and Pharmaceuticals posted positive growth-rates (of 6 and 8 % respectively) during the period 2007-2009 and will continue expansion for the next years.

### **The Innovation Dilemma**

Most end-markets declined globally during the recession and some key developed economy end-markets will not recover to 2007 levels until 2014. Developing countries with high demographics are expected to drive most of the growth. China recovered quickly and although many European end markets dropped significantly, the region seems to be showing more resilience than North America, Vaessen said.

The “innovation dilemma” arises from a historically weak cost-benefit equation and decreasing percentages of revenues allocated to R&D during the past ten years. On the other hand, new investment becomes imperative with regard to alternative energy, climate change and pollution, scarcity and quality of water, efficient infrastructure, waste management and sustainability, etc. At the same time, Western companies suffer from large amounts of inflexible sunk capital, but have to face the emergence of efficient and large scale developing market assets that force other means to the businesses.

### **Tactical Implications for Supply Chain Management**

“In the past few months, chemical companies focused on cash and inventories were reduced to a point where they are not sustainable any more”, according to Vaessen. De-stocking and volatile demand will lead to “Stop-and-Go” operations, causing supply interruptions and a general expediting and service level deterioration, he fears. Lack of visibility on the channel and end markets will further complicate the situation. “The industry is not sufficiently using its insight in their customers’ business”, Vaessen warned, pointing out poor coordination between sales and operation planning (volumes and quantities) and financial planning on the other hand.

According to Deloitte's expert, **companies should strengthen collaboration with LSPs and customers, forming clusters, have financial**

**perspectives on mind when it comes to order handling, supply chain and logistics. He also recommends differentiation of service levels by enabling flexibility at a reasonable cost.**

### **Strategic Implications for Supply Chance Management**

The industry is facing shifts in global as well as regional supply and demand balances.

This triggers temporary imbalances and permanent shifts in production and transportation capacities. Pressure on assets and asset efficiency will further increase in an industry that is asset and capital intensive by nature and acting rather conservatively.

**Structural changes are needed in manufacturing footprint and supply chain hubs.**

But outsourcing of manufacturing assets and processes remains difficult for intellectual property and security reasons. Another difficulty is ageing workforce.

Companies therefore should experiment with and shift towards more flexible or simpler business models (“Asset Light” strategy), increase innovative partnerships, maintain “Strategic Flexibility” by developing strategic options with core and contingent decisions and delaying decisions in order to adapt to different scenarios. Furthermore, it is of strategic importance to develop end-market industry insights, leverage scenario planning capability and recruit innovative, creative SCM talent, Vaessen recalled and concluded: “With outsourcing, the necessity to find the right people increases tremendously!”



## Round Table discussions

### A. **Availability - Cash, Capital, Capacity, Infrastructure**

Banks are very selective, access to credit remains difficult and expensive. All companies are facing cash constraints and have to rely on own capital and "self banking", stringent short-term cash management including supplier management and strict prioritisation of investment. Cash from own operations have become prerogative for survival - 50 % of all LSP have no access to cash to replace capacity. **The ongoing consolidation process will therefore continue.**

No capacity shortage to be observed in general, only transitional turbulences here and there, reflecting regional differences of the impact of the crisis (Eastern EU-countries, UK, Mediterranean countries). The lack of drivers is the only shortage that will resurface after the crisis. If the crisis should result into lasting transport capacity scrapping, the flexibility of the supply chain might suffer in the future.

Pressure on logistics assets in the chemical transport industry remains high because of low stock and rush orders, especially with regard to specialized equipment. Due to overcapacity, low inventory and flexibility are currently externally funded by LSP and have a strong impact on transport requirements, translating into higher costs: today these costs are not covered, as a consequence only opportunistic investment is done, but no investment in capacity.

Organisation and timing processes still need to be adapted to the new situation. Increased collaboration and communication between all players is required to retain capacity and providers in the sector. Tactical strategies play a more important role.

Most participants believe that prices will be equilibrated by market mechanisms (market growth, cost cuts) and/or by stronger pooling of operators. With increasing local, regional or global capacity pressure, shippers will have to face a stronger service differentiation and pay for flexibility and dedicated investment.



### B. **A New World Order - Globalisation, Economics, Flexibility**

Globalisation has been more gradual than expected but will continue to modify European supply chains. The crisis, most participants believe, is not over yet and the global credit crunch will last for a while and lead to further consolidation in both the chemical and LSP sectors. "Nothing is guaranteed anymore!" Volatility will continue, triggering more vertical collaboration along the supply chain. But the pressure on building lean and green supply chains offers opportunities, too. Both sectors are challenged to develop innovative approaches.

More differentiation and specialisation are to be expected within in the chemical industry, too. Production sites will undergo redesign and relocation, becoming even more inter-regional or global. Companies need to review which customers to serve, in Asia or Europe, with Europe being less competitive from a supply chain and cost perspective. There is an ongoing shift from export to import in Europe, triggering new requirements and specialization. The transport industry will respond by offering specific services, service level differentiation. They will be offering various options to their customers and create better awareness of the costs involved. Their focus will shift to "core activities" using light assets and to optimisation through subcontracting.

The new "rule of the game" in the transport industry in a nutshell: service differentiation (with regard to customers, grades, orders), increased quality, better knowledge, collaboration and understanding of customers needs.

The transport industry has shown flexibility and adapted well to the low stock situation, but it will have to continuously enhance visibility along the SC and look

for opportunities to create more flexibility together with their customers and based on common business contingency plans, "De Silo" organizations. Awareness and understanding of SCM within the companies' sales organisation has to grow. **Both sectors should work hand in hand on EU and governmental levels to push for infrastructure projects based on investment scenarios.**

## **C. Collaboration - Industry, Countries, Governments**

Collaboration has been discussed for years, in order to improve efficiency in the SC. Up to 2008, it was a slow process hindered by fear of transformation and lack of trust. Nowadays, the move towards collaboration is exacerbated by the crisis. Necessity will be the main driver to enhance collaboration and improve the quality of forecasts (producer – LSP – receiver) for inbound/outbound flows. It should allow LSP better planning and pooling up in order to reduce empty mileage.

In the meantime, reverse effects have been noticed. "We have seen not only protectionism, but also a record number of tenders translating a rather short-term view on partnerships." The chemical industry is said to be traditionally less open to outsourcing, unlike other sectors. Emphasis is and will be put on light assets, e.g. by decoupling pulling unit, trailer, container, drivers, by using more silo trucks and more concentrated shipping points in harbours. The major challenge remains real "trust building" between chemical companies and LSP. Collaboration is necessary to overcome peaks. Although speculation will always be there, it means that more information should be shared by producers, LSP and end customers. Best Practice should be more commonly shared to ensure producers' and LSP's protection.

### **Collaboration on various levels:**

- Producer-LSP: reduce paper and administrative work, make better usage of distributors;
- LSP-LSP: Complementary and intermodal service offers;
- Producer-Producer: SWAPS, sharing of assets.
- On governmental and regulatory level: create standards, endorse best practice, support and create incentives for infrastructure.

Continuing deregulation in the EU remains important to improve service quality, e.g. in the ports, on rail, but there is a social price to it. Nevertheless, states should not support failing companies who have taken too much risk.

The pressure on building lean and green supply chains will offer opportunities to both industries: innovative approaches are to emerge. As mentioned before, transport companies are expected to offer differentiated service levels, increase their service quality and gain more knowledge and better

understanding of needs through stronger collaboration with customers. Flexibility has to be increased furthermore through enhanced visibility along the SC and better communication, i.e. exchange of information with customers. Sales department should learn more on SCM. And both industries should team up to act on EU and governmental level, with regard to regulatory action and infrastructure. Uncertain future will lead to more subcontracting, and the chemical industry's concerns increase regarding their suppliers power (as certain LSP segments have proven dysfunctional).

## **D. Building Blocks - Skills, Tools, Techniques, Systems, Innovation**

Systems, tools, techniques are available but are not effectively utilized. Good SC practice needs to be reinforced now by bringing in a young, well-trained workforce. Cost reduction, hiring ban and lack of talent have created a shortage in experience, also due to an ageing, non-diversified workforce. 40 % are expected to retire within the next 10 years.

SCM is generally under-prioritized and should rank much higher on the management agendas. Long-term plans and strategies (e.g. for BRIC countries) should be shared with SCM, and the value-chain should be looked at across customers and providers. The crisis has triggered a certain lack of discipline, participants criticized. Companies should now move back from "buying cheap" to "buying smart" and focus on long-term total cost. "Keep an eye on the long term!"

There is a general perception that despite high unemployment rates, the main difficulty is to attract new skilled and talented workforce, i.e. people who are able to adapt to a changing environment and new automated processes. Investment in automatisations has or will pick up soon. Dynamic adaptive planning will become of paramount importance and replace traditional Enterprise Resource Planning systems in order to help develop transparent, agile and sustainable supply chains. Future investment will have to deliver solutions rather than physical assets!

### **Closing Remarks**

**by Dr. Willem Vaessen (Lead Partner Europe Chemical Industry, Deloitte)**

"One-to-one is not enough: we have to look at the complete SC from supplier, producer to end-customer. Companies still seem very sceptical to get rid of production assets, but the challenges are so significant, that we have to break the old rules. Companies who do so will have a competitive edge."



# 2

## HOW TO ACHIEVE GREEN SUPPLY CHAINS



### Executive Summary Green Supply Demand Chains

**P. Gooch**

*To date, logistics and transport companies have mostly taken a tactical and internal view of supply chain decarbonisation. This has resulted in important, but nevertheless small scale responses to climate change....The need to look more strategically at the end-to-end supply chain, encompassing all aspects of the product life cycle from raw material to disposal, is now being evidenced... Near-term economic uncertainty has changed the immediate outlook for the logistics and transport sector. Nonetheless, even in this operating environment, the underlying business imperatives for supply chain decarbonisation remain valid.”* Supply Chain Decarbonisation - World Economic Forum Report with Support from Accenture, 2009

The Round Table workshop discussions tended to echo the sentiments expressed in the WEF report. Green initiatives clearly have not reached the same level of acceptance and maturity as quality and safety, and while no clear business case appears to have been developed in support of “Green”, the management of costs will continue to dominate the agenda. The major conclusions from the Round Table discussions can be summarised under the following bullet points.

**Pragmatism / Resistance:** apart from some notable exceptions from companies prepared to take a leading role (e.g BASF), there was a general view that companies are following regulations – nothing more, nothing less. Green will not gain solid traction until the economics demonstrate real benefits, and while customers are not exerting strong pressure (yet), and green requirements are rare in freight tenders, then progress will be patchy. It was observed that in some cases there has even been a switch from Intermodal to Road for cost reasons. One participant’s comment that “you must be rich before you can be green” was not accepted by the majority of the attendees, but it was acknowledged that efficiency

improvements can often be coincidentally green. The mood was well captured by an LSP comment on horizontal collaboration – “rather use my assets than my neighbour’s”.

**Efficiency:** although many Round Tables acknowledged that cost reduction could be obtained from Green initiatives, there was general agreement that new revenue streams had still to be identified. Therefore, the focus is more on continuing to execute well established cost improvement concepts and using these as a “green” lever: e.g. reduce empty running, flexible opening hours, asset sharing, slow steaming, reduced packaging, materials of construction etc. and as a consequence positioning green as a by-product of efficiency in transportation and supply chain planning.

**Risk:** the risks associated with doing nothing, or not enough, too late were broadly discussed. The concern was expressed that lack of focus may trigger heavier legislation and taxes, especially where this results in a breach of regulations. It was also acknowledged that this is a subject of high public sensitivity ( especially where there is major environmental impact) and can have a damaging impact on image and brand.



**Metrics:** there was broad-based agreement on the importance of performance measurement, and support for the CEFIC proposals on metrics in terms of the use of averages (at least initially). Many Round Tables urged the need for harmonisation (especially if metrics were used as a basis for taxation), simplification, and encouraged the use of self-auditing. There was support for the development of Best Practices in carbon metrics which would support the industry lobby.

**Leaders:** Several of the Round Table discussions picked up the “Best Practice” examples referenced in Declan Supple’s presentation, along with his comments about market-makers putting strong focus on end consumers, public perception, and green labelling. It was acknowledged that the adoption of green logistics can be a strategic differentiator, as well as delivering cost improvements through load optimisation, and reduced environmental impact from ship recycling, slop reduction, and other efficiencies referenced above.

“We are only at the beginning of the journey, and a combination of many different actions will be needed...improving logistics efficiency and reducing Green House Gases definitely goes hand in hand!”  
Jos Verlinden, CEFIC Logistics Director



## Managing sustainable supply chains



**“Sustainability is about creating value by combining high performance practices with an effective response to changing environmental, social and economic drivers.”**

**Declan Supple, Partner Global Supply Chain Management, Accenture**

**Sustainability becomes a key driver for the reorganisation of industrial production as well as supply chains. Declan Supple gave an overview on the ongoing integration process and stressed the need for new reporting standards including environmental factors and social responsibility.**

Focusing on the environment and CO<sub>2</sub> is only the beginning and one part of a global sustainable approach, Declan Supple recalled. Sustainability remains very diversified in organisations. “Companies need to ask themselves how to integrate sustainability in the complete organisation, woven into the fabric of operating models.”

Many companies are taking the concept more and more seriously, he explained, and impose their standards on their providers, including LSP. Some outstanding examples show that sustainability has turned into a critical factor for companies’ businesses. Supple highlighted ‘Best Practice’ examples such as the BASF’s Safety Matrix program for evaluating and identifying high-risk suppliers (HES assessment) or IKEA setting environmental criteria to be met by 2012, also by transport suppliers. HP is ranking strategic and non-strategic suppliers with regard to sustainability and AkzoNobel turned into a leader in global reporting initiatives.

### **Sustainability in the Chemical Industry**

**The different parts of the chemical industry are subject to completely different requirements with regard to sustainability and reporting, depending on their business model.**

At **feedstock foundations**, sustainability is more focused on the own production; they set their own standards and reporting rules. In chemical platforms, sustainability is well integrated across the value chain. They rather adopt accepted standards and reporting using e.g. the **Global Reporting Index (GRI)**. So called **“Market Makers”** on **high value end markets** put strong focus on **end consumers, public perception** and **green labelling**. They want to serve their clients with sustainable products and support clients to achieve sustainable growth. **GRI reporting** in this segment is **not** very **broad based**, Supple reported. Production and supply chains are central to key sustainability accomplishments.

Transport and logistics operations typically make up 5 and 10 percent of the carbon footprint of a product’s carbon emissions. At the same time, between 2 and 10 percent of freight and logistics companies’ current profitability could be directed at risk from the emergence of legislated carbon tariffs.



### **Implications for the Logistics Sector**

To increase sustainability in the supply chain, **logistics and transport providers have to adopt new technologies, improve training and communication industry-wide and switch modes where possible.** Additionally, **LSP could develop recycling and home delivery offerings and promote carbon offsetting of shipments,** Supple suggested.

Shippers and buyers need to better understand SPM, reduce the carbon impact of manufacturing and seek alternative sourcing. Their planning should allow slower and better optimized transport as well as increased shared loading. Packaging materials must be further reduced. Supple urged companies to develop product carbon labelling and standards, auditing tools, etc.

He mentioned that the World Economic Forum's Logistics and Transport (WEF L&T) industry group established reporting guidelines specifically catered to this sector.

The **push towards differentiation in service levels** will be another key driver to tackle the different initiatives. "But a lot of work still has to be done to align objectives within the companies," Supple pointed out. "They have to learn how to negotiate a contract with 3PL, discuss slow steaming etc."

### **Corporate Social Responsibility (CSR) Reporting**

Additionally, Corporate Social Responsibility (CSR) Reporting is gaining ground, he pointed out. CSR provides goals and performance benchmarks and implies that companies are assessed according to their CS activities.

**Supply chain reporting will become an integral part of EH&S reporting** he said, as more and more companies are urged to **report their suppliers' carbon footprints.**

Reporting requirements and standards will further increase with regulation and create new set of challenges. "We have to make sure not to be overwhelmed by the mass of data", Supple warned. He believes that sustainable reporting will soon become as crucial as financial reporting.

### **Automation of Reporting Processes**

"Managing sustainability data in the future will require a higher level of automation", he said, "automation will become key to satisfy the additional requirements without exploding costs." Accuracy, timeliness and complexity of the data management process become key concerns. Most companies currently rely on spreadsheets to collate, analyze and report their sustainability performance, Supple reported. But the need for automated reporting tools and advanced IT solutions that suit the specific reporting parameters will become a critical factor.

## Round Table Discussions

### A. Business Cases

According to a vast majority of participants, **business cases of sustainability are a no-show** yet, mainly because “greening the SC” is not a stand-alone motivation but **rather a by-product of striving for more efficiency and cost reduction**. Jos Verlinden had already illustrated this by presenting a related CEFIC survey and assessment at the opening of the seminar:

Secondly, standard measuring methods as well as regulation on CO<sub>2</sub> taxes are still underway and will be decisive factors. Will the EU come up with a Carbon VAT or rather opt for decarbonisation based on legislative tools and infrastructure projects? The commonly admitted mainstream approach of the industry is to react, i.e.



follow and comply with new legislation where in place. Although a ‘green’ image and commitment as part of the corporate social responsibility program (“save-the-planet”) can serve as sales arguments, these factors remain difficult to capitalize. There seems to be not enough evidence that sustainability will trigger new revenue. At the best, ‘environmental friendly’ operators will beat their competitor if offering services at the same price. Recent examples of reverse modal shift to road transport perfectly illustrate that cost effectiveness prevails. The participants believe that those who stay with rail, ships or barges, rather do so for capacity and optimization reasons and/or matching loading and unloading time slots.

“Green” obviously has not yet reached the same level of acceptance as Quality and Safety, although the E in HQE stands “within the companies’ fence”. But customer pressure is still weak and the issue doesn’t rank high in tenders, although it could serve as a differentiator.

Some participants recalled the debate on safety issues, 20 years ago, to draw parallels. If not complying with environmental requirements, companies are at risk to come under pressure from the customer’s side, to breach regulation in some part of the world and to bring lasting damage to their brand and image.

Not everyone agreed upon the quote **“You must be rich before you can be green”**. One group stated that “environmental friendliness” should be proactively addressed and become integral part of procedures and business cases. “Going green” should and could still be considered as a trigger for further cost savings (“low hanging fruits”). Also, collecting data from the industry has become a necessity to ensure efficient lobbying on EU and governmental level.

Ideas on “saving & greening” were brought forward by participants such as: reduce packaging, slow speed, collaborate to optimize planning, use light materials for construction and equipment, allow usage of 44 t /25,25 m trucks in international EU transport, etc.

Also, CEFIC has already issued an excellent paper on size and weight, demonstrating a business case.

### B. Measurement

When it comes to **measuring** the environmental impact of operations, participants agreed upon the necessity to establish a harmonized method for all industries, especially if CO<sub>2</sub> will become the basis for taxation. They plead for a pragmatic approach (“Keep it easy and simple!”) and favour averages for reporting purposes or KPIs (CO<sub>2</sub>/tkm).

Standards should be established cross-industry. The sector therefore supports the CEFIC initiative (on CF calculation) as well as the development of “Best Practice” in order to assist lobbying efforts by the industry’s representatives. Sector figures indicate an increased demand for ISO 14001 certification and self-auditing.

Harmonization and common standards were said to be very important, especially with regard to the “outsourced” LSP environment. But some expressed the fear that it will remain difficult to apply a uniform matrix on an operational level.

## C. Efficiency and alternatives

Lack of focus (“doing nothing or little”) may trigger heavier legislation, especially since public pressure and a “green” image are gaining importance. Some participants therefore recommend to execute efficiency improvements and to use them as a green lever as “green logistics” might soon become a strategic differentiator. On an organisational level, this includes nominating a “green” manager, adapting KPIs, training and supplier programs, offering a bonus to managers for “green” achievements, setting clear targets.

**“No green SC without economics!”** The main efficiency drivers have been mentioned by Jos Verlinden (CEFIC). Participants agreed that there are still “low hanging fruits” and that they could be harvested together with the chemical industry, which should apply similar principles as the FMCG or the steel sector. Horizontal collaboration between LSP remains a sensitive issue, as everyone will “rather use his assets than his neighbour’s”.

How to reduce carbon footprint? On the production side, SWAP and highly integrated production sites and clusters as well as reconsidering frequency and rigid loading/unloading time slots would help LSP to optimize operational efficiency. SC planning and cooperation should involve all players.

LSP can contribute to GHG emissions reduction through better driver training and state-of-the-art vehicles, less empty runs and higher loading factors, new equipment and switching modes where possible. Furthermore, the transport industry asks for continued harmonization efforts on EU level to create a level playing field in a common transport market.

Alternatives or complementary actions would include development of alternative energies such as ethanol, biomass, nuclear, gas, hydrogen, etc., investment in infrastructure, reduction in mobility demand - or simply accept paying higher transport costs.

## Final Comments

by Declan Supple (Partner Global Supply Chain Management Accenture)



Supple said he “could **not** perceive **much aggressive pick-up of opportunities**” and insisted: “The time is right for planning how to get the different components together.”

The issue of **“greening SCM” should move up in everyone’s agenda**, he urged.

## Final Remarks

by Prof. Dr. Prashant Yadav (Zaragoza Logistics Centre)



### **Metrics must and will come,**

Yadav said, notwithstanding regulatory action that should aim at curbing fuel consumption. Poor drivers and little motivation within

the industry, he believes, is mainly due to the fact that the benefits of “greening” the SC go to society overall and not to the companies. He urges the industry to **look forward to reliable measurement methods and to become more proactive with regard to legislation.** “**CO<sub>2</sub>-labelling on a consumer/product level** will have a trickle-up effect to LSP and **appear much faster than most of us might think today**”, he concluded.



# 3

## CLOSING REMARKS

**Phil Browitt**, Chairman EPCA Supply Chain Committee



*The ‘unthinkable can happen’, we heard this morning, recalling that there are huge amounts of uncertainty in the banking and other areas. We are looking at changed business models going forward and heard about different scenarios how we would come out of the recession. Collaboration in particular came out strongly, as well as differentiation of services.*

In the workshops, we found out that we should be doing what we should have been doing - nothing absolutely new, but still a lot to do. Collaboration, again, ranked high in the workshop discussions, related to the two main factors - lack of cash and global footprint. At the “Green Supply Chain Management” workshop, we have seen Best Practice from some companies in the green area. A lot is going on in manufacturing - but how to take it forward in logistics? There is a big amount of complexity involved, and we heard that some of you consider ‘you have to get rich before you can get green’. Everybody agrees that we must measure, but also that we must go for the economics.

Browitt highlighted an interesting suggestion at the end of the workshop: ‘Can we turn it round and internalize some of the things that we see as negative?’ Today’s discussions will certainly impact our September/October meeting and we will discuss how progress can be made from this stage onward, thanks to your great input.

## Acknowledgements and Thanks

*EPCA wishes to thank all participants in the EPCA interactive Supply Chain Workshop for having shared their knowledge, expertise, skills and competences to enable us to make this synthesis report for all EPCA members. Both speakers and chairmen of the round tables discussion initiated an interesting exchange of views. We are grateful to all delegates of the member companies present in Frankfurt for their ongoing support to EPCA Supply Chain activities. Gratitude is also expressed to Phil Browitt who chaired the workshop brilliantly and to Paul Gooch who provided us with the insightful executive summaries of the workshop. The findings of this workshop will undoubtedly contribute to further discussions at the September/October meeting in Budapest.*

*See you there!*

Cathy Demeestere

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