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Logistics, sustainability and education

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Contrary to popular belief, logistics is about far more than lorries. Supporting IT systems were highlighted at an International Sustainability Conference recently and shown to be invaluable in the increasing move towards collaboration.

# Logistics, sustainability and education

- There still exist widespread misconceptions about logistics as a profession and its impact on the environment. Collaboration between industry and higher education can support the vision of a modern, sustainable supply chain.

'Logistics, that's to do with lorries, isn't it?' is an answer that we often hear when we visit schools and colleges and ask students what logistics is. While people in the sector often have a more or less clear view of the key aspects of logistics, it seems that the wider population has more difficulty in defining it. If we stick with the perception that logistics equals lorries, the sector has a big problem; even more so as environmental awareness increases. Lorries are perceived as key contributors to congestion on the roads that emit harmful greenhouse gases. At the same time, customers expect a wide choice of products on supermarket shelves at the lowest price possible. It is a big challenge: becoming more environmentally friendly – and communicating this to

consumers – while at the same time keeping standards up and prices down.

We discuss here the need for a more sustainable sector, and how collaboration between industry and higher education can support the vision of a modern, sustainable supply chain.

The environmental impacts of logistics are widely discussed. The lorry on the road is just one example. If we look at the transport side, we recognise that most modes of transport run either directly or indirectly on fossil fuels; between 97% and 99% of transport fuel is based on oil. While we have seen significant improvements in fuel efficiency over the years, the

savings are often outstripped by the growing demand in transport services. Fuel savings are important, but to make logistics sustainable, certainly more has to be done. Improvements have also happened in warehousing to reduce their environmental impacts. Green designs of warehouses have become more popular. Reductions in emissions can also often lead to reductions in costs. So there is a commercial incentive to become more sustainable. Key areas for sustainable development within the supply chain are identified in Figure 1.

The logistics sector has achieved a great deal to become more environmentally friendly, but it is only the beginning. Government targets and policies will pick up the green agenda once the current global downturn is over. It is therefore important to look ahead to the challenges that the industry will face.

### Tomorrow's managers

The Leitch report emphasised the need for developing skills at all levels and within all industries to strengthen the economy and create a competitive advantage in the global economy. Lord Mandelson has also recently outlined his views on the essential role that universities can play in shaping and building a stronger economy. Consequently, it would make sense to include tomorrow's managers in addressing tomorrow's issues. While there are existing links between the education sector and industry, be it through guest lectures, placements, knowledge transfer partnerships (KTPs) or research, there is much scope to develop this collaboration. In future, companies will demand employees with greater knowledge of the industry, while being able to deal with the new challenges of environmental policies. An understanding of policy-making on a national and supranational level, environmental impacts, consumers and logistics business is key to employable and highly valuable graduates of tomorrow.

Much research has already been carried out into the types and range of skills required by logistics businesses, although until now the inclusion of environmental issues has been overlooked. Students within the disciplines of logistics, transport and the supply chain are already developing knowledge and skills in all areas of planning and managing operations in order to improve efficiencies. Information technology plays a huge role in this, whether it is the use of GPS and telematics to track vehicle consignments and analyse vehicle usage, RFID to track products through the supply chain, or modelling and simulation techniques to develop new networks and systems. Many of the techniques also generate greater sustainability through increased visibility, efficiency and removal of wasteful activities. Good examples of companies pushing the boundaries of sustainability are emerging and students, in addition to the industry as a whole, can gain from sharing success stories.

It is therefore necessary that the communication between industry and the higher education sector is intensified to ensure graduates meet the needs of future employers. Students are also keen to develop this collaboration. Insight into real problems faced by the industry is highly valued by students. This has been shown by a recent survey among transport and logistics students, following a field trip to the Netherlands to see international logistics operations in practice. Feedback



showed the great relevance of relating practical examples to the theoretical knowledge gained in the classroom.

This last point highlights another issue: globalisation. Looking at environmental aspects of the industry on a national level might be insufficient. Global warming is, by its name, global, and policies are often made on an international level, through EU legislation or international treaties – for example, there is direct reference to transport in the Kyoto Protocol. The collaboration between industry and academia should therefore not end at a national level, but encompass stakeholders from different countries. Globalisation of the industry with its international players should make this easier.

The collaboration between industry, academics and students should be a three-way process in which ideas, requirements and latest research are exchanged – see Figure 2. First signs of this collaboration are evident. A good example is the DfT Freight Best Practice Student Paper award. This initiative enables students to engage in creative and innovative thinking of how to address problems of the freight transport sector with regard to



### Key areas for sustainable development within the supply chain



Figure 1



At the conference, groups of French, English and Polish students worked together in groups to discuss their own country's Government policies regarding sustainability within transport and logistics

their environmental impacts. Another example where students can give impetus is industrial placements. Student feedback suggests that work placements enhance knowledge in all areas of the supply chain, help in gaining technological understanding and develop professional skills. Work placements can also help with personal development by expanding social skills through interactions with a broad range of people. Company strategies can be observed and students are seeing more of a shift towards corporate responsibility strategies.

**International Sustainability Conference**

Further steps towards such collaboration saw the first International Sustainable Logistics Conference held in France in 2009, which brought together specialists in all areas of transport and logistics to share knowledge and experience and to discuss and develop ideas. The aim of the conference was to identify the problems faced by companies striving to become more environmentally sustainable and to find new innovative ways in which these might be overcome. Contributions were made from partners including: the University of Huddersfield; the Institut Supérieur de la Logistique et du Transport, France; EAE Business School, Spain; the Poznan School of Logistics, Poland; DB Schenker-Joyau, France; SNCF, France; and Kuehne + Nagel, France.

Professionals spoke of the need to shift more freight traffic on to the railways in France and throughout

continental Europe, and how the main rail companies are generating greater business interest through enhanced infrastructure for multi-modal operations. Supporting IT systems were highlighted and shown to be invaluable in the increasing move towards collaboration. Green buildings such as warehouses and manufacturing plants are being developed using the latest technology, and using renewable energy and improved energy efficiency to shift to much lower carbon footprints. The use of photovoltaic panels in reducing long-term energy costs was also discussed.

Not only do these sustainable operations and strategies contribute to a more environmentally stable industry, but also they can potentially enhance the profitability of businesses. Solutions such as reducing energy usage and improving the long-term value of logistics infrastructure can potentially reduce costs. This can also assist in enhancing brand image, which is particularly important to today's discerning customer.

Students also made presentations. Charlotte Laval, final year student in European Logistics Management, University of Huddersfield, presented her award winning paper on: *Proposed ideas for future developments in freight transport operations*, with which she had achieved first prize in the Freight Best Practice Student of the Year, 2008. Students from Poland presented a paper on the development of rail and roads links within their country. Groups of French, English and Polish students worked together in groups to discuss their own country's Government policies regarding sustainability within transport and logistics.

Collaboration between higher education and the logistics sector can only add value and create a win-win situation for the participants, be they companies, academics or students. Companies can influence the skills acquired by future employees, students get a relevant, current and highly sought after education and higher education institution can ensure teaching and research meets the needs of the students, industry and the environment. According to Dr Mick Jackson, Chief Executive, sector skills council Skills for Logistics, the message is clear: reduced carbon can reduce costs and increase competitiveness, but only if backed up by enhanced skills across the board.

**Collaboration between industry, academics and students**

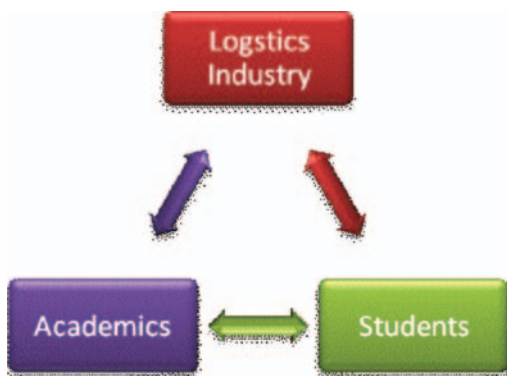


Figure 2

## About the authors

**Christine Corns MILT** is Senior Lecturer in Logistics and Supply Chain Management, University of Huddersfield, where she also manages the *CILT Professional Diploma in Logistics and Transport*. Prior to joining the university, she pursued a variety of operational management roles within the 3PL sector. Her teaching focuses on warehousing, transportation and inventory management at operational and strategic levels. Her research areas include graduate skills for logistics and collaboration within the supply chain.

**Robert Mayer MILT** is Senior Lecturer in Air Transport Management and Course Leader for Air Transport and Logistics Management, University of Huddersfield. Before moving into academia, he worked for an international airline. His teaching includes airline marketing, passenger transport and air cargo. His research focuses on environmental aspects of air transport.

### Further information

The next International Sustainable Logistics Conference will be held on 27th May 2010, University of Huddersfield. Further information, web site: [www.islc-network.com](http://www.islc-network.com)

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