

# Assessing the impact of ICT on UK general haulage companies

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## Abstract

This paper focuses on the road freight transport industry, using the UK as a case study. It examines the extent to which Internet freight exchanges and the use of information and communication technology (ICT) processes are affecting general haulage. Recent surveys suggest that there is scope within the road transport industry to improve efficiency in terms of fill rates and empty running. Any improvements may also help to alleviate the pressures faced in many developed countries by the haulage industry, which include driver shortages, new legislation, such as the Working Time Directive in Europe, increasing road congestion, as well as to support improvements desired for sustainability. A background summary of the UK road haulage industry and the potential impact of e-commerce are provided before the results of a survey from 49 general haulage operators in their attitude to and adoption of ICT developments are analysed and assessed. The study concludes that a split picture is emerging. While many of the smaller haulage operators remain dependent upon traditional communication and process systems, the larger logistics companies, who control the majority of vehicles and freight movements, are progressively developing new ways of working supported by ICT adoption.

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## 1. Introduction

An efficient and effective road freight transport industry is fundamental to the successful function of any economy. Due mainly to the flexibility, directness and speed that the movement of freight by road offers, when compared to rail, inland waterway or sea transport, road movement has become the principal freight transport mode, carrying the majority of inland freight. Some authors have considered that the adoption of information communication technology (ICT) developments by haulage companies could support more efficient and effective

performance and help the sector progress towards the goal of improved sustainability (Keskinen et al., 2001). The Internet, for example, is providing new ways of doing business for all industries and in freight transport there has been significant growth in electronic market places known as freight exchanges. These purport to offer haulage companies the ability to load their vehicles more often and to secure more backloads, thereby providing a solution to improving their efficiency (e-Logistics Magazine, 2002). Unfortunately, recent surveys of the industry suggest that the use of ICT, including the use of the Internet, is not widespread in the road freight transport industry (Higginbottom, 2002).

This study examines, through a case study research design focussing on the United Kingdom,

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the extent to which Internet freight exchanges and the use of ICT processes are affecting general haulage. The paper summarises the results of a questionnaire (see Appendix A) sent to 242 UK general haulage operators and assesses information and opinions gathered from the haulage operators' perspectives on the presence of ICT in their business, the levels of backloading, and an evaluation of the use of freight exchanges. Initially, a background analysis of the structure and key characteristics of the UK road freight transport industry is presented and this is followed by an introduction to key aspects in e-commerce which are relevant to road haulage. After the discussion on the methodology used, the main findings of the research are presented before conclusions and limitations are put forward.

## 2. The UK freight transport industry

### 2.1. Background

In March 1928, it was reported that, "tractor and trailer units, which had already achieved considerable success on the other side of the channel, could be on their way to Britain" (Commercial Motor, 2003). During the subsequent 77 years there clearly have been significant changes to the size, shape and organisation of haulage vehicles and consequently road's share of the freight transportation market. This evolution is continuing in the new century, fuelled partly by the advent of new ICT developments. This initial section aims to develop an understanding of the composition of the modern road freight industry using the sector in the UK as a case study. The UK road freight transport industry was selected as it was among the first post-war economies to de-regulate road freight transport and has since developed a reputation as home to one of the leading and most enterprising transport and logistics industries in the world. The UK has also a strong reputation for innovative technology adoption. From this foundation the potential impact of ICT developments in the sector can be better understood.

The movement of freight in the UK is closely linked to economic activity, and represents the basic inputs and outputs of the tangible economy. Historically, by enlarge, as the economy has grown, so too has the volume of freight moved, within which road haulage has played a growing role. This

is reflected in the statistics. By 2003, tonnes of freight moved by road in the UK had increased by 71% from 1980 to 159 billion tonne kilometres. Road freight now accounts for 64% of all goods moved compared to 53%, 23 years earlier in 1980 (DfT, 2005). Interestingly, in terms of tonnes lifted the increase has been much more gradual. By 2003 total tonnage lifted rose to 2.09 billion tonnes, of which about 83% was lifted by road, a proportion that has remained relatively stable since 1980.

### 2.2. Current issues

#### 2.2.1. Road's role in modern supply chains

Supply chains are now much more efficient in terms of delivering the right amount of product, at the right time, in the right place and condition. The improvements in the supply chain, in terms of improved material flow, shorter lead times and lean thinking developments (Towill, 1997; Womack and Jones, 1996) such as just in time have created extra pressures meaning that time has now become a major consideration. Road is able to respond more effectively to the demands of the modern supply chain, compared to water and rail, which often cannot compete in terms of speed, directness or flexibility. The motorway and trunk road networks in the UK are now extensive compared to three to four decades ago and facilitate the speed and flexibility of road as a mode of movement. Partly due to this improved capability, supply chains have been reorganised in order to deliver product on a more frequent and timely basis. To illustrate this, the structural change in the grocery sector distribution in recent years is indicative. Traditionally, locally grown produce was delivered on a daily basis to local supermarkets. Now the fresh produce is delivered to a regional distribution centre, and then redelivered on the same day back to the local supermarket. The result is that fewer vehicles deliver to the store, but with fuller loads of a larger range of products. While the traffic to the local shop has reduced to a few vehicles, the distance that the product now travels has significantly increased, borne out by the statistics discussed above.

This example is also illustrative of taking a systems perspective (Kast and Rosenzweig, 1981) to the management of transport which should ideally be managed within the context of taking a full supply chain perspective (Christopher, 1992). Cox (2004) argues,

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