

Research on Lorry Road User Charging Scheme

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Abstract: In the 2011-2015 Business Plan, a lorry road user charging scheme has been planned to implement by the Coalition Government by 2014. This study will describe the possible impacts of such a system on the road haulage sector and the ways in which logistics providers might utilize different operating practices and technology to improve their operational performance under such circumstances in the UK. And this essay will cover the possible uses for Intelligent Transport Systems and new working practices using specific case study examples. Finally, the impacts of LRUC and several feasible countermeasures will be discussed in the following text.

Key words: Countermeasure, freight industry, lorry road user charging scheme, the UK

INTRODUCTION

The British hauliers have argued against the unfair competition with other EU countries for many years, because the foreign lorry drivers did not pay anything for their use of British road infrastructure but enjoyed much lower fuel tax and excise duty than the UK drivers (McKinnon, 2005). Therefore, the Department for Transport has introduced a Heavy Goods Vehicle HGV road user charging scheme in Business Plan 2011-2015, the purpose of which is to make it fairer to the UK hauliers in the competition (DFT, 2010). This scheme is supposed to come into effect by April 2014 and is meant to bring many other benefits, such as advantages for environment and safety. Actually, it is not the first time the British government proposed to bring in such scheme. However, due to the previous planning of lorry road user charging system was over elaborate, it was concealed by the government in 2005, just a part of the wider work on national road pricing (McKinnon, 2005). What could the new lorry road user charging scheme be? What impacts this scheme might have on the road haulage sector? How could the freight operators deal with such situation? This essay will attempt to discuss the possible impacts of LRUC and provide some feasible countermeasures, including the use of Intelligent Transport System.

LRUC scheme and its impacts to freight transport:

Based on the research of Campaign for Better Transport (Campaign for Better Transport, 2010), the Parliament would implement a straightforward scheme which will charge by vehicle type and distance on all the roads in Great Britain. According to their research, this distance-based charging scheme would be more economical, easy

to set up and put into operation relatively quickly, compared with time-based system. The lorry would be charged from 5 to 15 p/km, differed by size and weight and a discount will be given to those environment-friendly ones; besides, toll rebates or some other financial supplement and policy priority will be offered to the UK drivers (Campaign for Better Transport, 2010). If this kind of scheme is implemented in the future, the highway freight sector might be influenced in the following aspects:

- Shorter trips could increase, as the higher toll fees of long distance. The operators would reschedule the business and distribution activities into relative nearer areas, to enable the conveyance of goods more effective and inexpensive.
- Vehicle size and weight could be optimisation selected. Due to the charging are varied by vehicle types, freight operators would make sure the load factor are kept on a high level, especially avoiding empty driving.
- Transport mode might change. The logistics providers might choose other modes of transport or combine several modes to offer a cost- and time-effective delivery.
- Clean vehicles might be wider employed in road freight sector. The environmental preferential policies might encourage the enthusiasm for the development and utilization of vehicles, which use green energy and is lower pollution.
- The composition of the UK and overseas vehicles on British roads might alter. The operators who conduct

international haulage should deliberate on the proportion between domestic and foreign lorry in the UK, because the foreign-registered lorry would lose their competitive edge.

Possible countermeasures could be taken: In the face of such tendency, freight industry should apply some operational practices and advanced technology to enable the road haulage work well under the stroke of lorry road user charging. In the respect of enhancing management, Intelligent Transportation System (ITS), beyond question, is a useful and beneficial tool. Otherwise, there are some other working practices which could be adopted to improve freight efficiency, such as relocating storage areas, inter-modal transport, sharing cargo transport with other companies, encouraging light products and packaging, as well as increasing local productivities. Some of these measures will be introduced in this section.

The ITS application: In recent years, the ITS technology has developed rapidly and been used widely in freight transport. It can not only provide and analyse information, but also assist to monitor fleet. A typical ITS might include on-board equipments, data gathering system, vehicle and trailer tracking system and paperless manifest production (Cherrett, 2010). Figure 1 shows how every part of ITS worked together to complete multiple tasks.

Based on the timely and appreciate information of vehicles and cargo, the operator can manage the routing and shipment flexibly and previously. What more, ITS can computerise the scheduling automatically and recommend possible routes, which is economical under toll collection. Statistics showed that the operator can reduce 10 to 15 transport costs, if plan efficiently (Department for Transport, 2003). Besides, the reasonable planning might do favours to environment and resources. In addition, ITS can ensure lorry and cargo safety and give confidence to driver by monitoring the vehicle condition and drive performance and providing feedback. These are not bold promises, for the example of Tesco has proved ITS distinguished itself in road freight transport.

As the largest foods and grocery retailer of the UK- Tesco, has gained obvious advantages since fitting Microlise systems (certain systems of racking and telematics, transport management and planning and Proof of Delivery (Microlise, 2010). According to their operations development manager, Dave Crellin, the 2,200 vans of Tesco has saved 12% by cutting fuel use and 6% by avoiding accident damage, in company with offering better customer service, in 2008, from the time when they applied such system (Fleet News, 2010). He said the systems began to take effect only three weeks after they were installed. Although some drivers were in opposition to the spy in cab he believed the systems benefited in routing and scheduling, environmental effect and driver behaviour (Fleet News, 2010). Additionally, he

emphasized that they have done some work on motivating the drivers to use such systems, and they would keep on making further progress of better utilise of these system (Fleet News, 2010). It can be predicted that, ITS could help operators adjust the new lorry charging system speedily.

Inter-modal transport: Inter-modal Transport is a kind of combined freight transport, which might include manifold modes of transportation (rail, ship, and truck), using an intermodal container or vehicle, and do not need any operation of the freight itself when altering modes (Wikipedia, 2010). This form of transport saves interchange and handling time, brings environment benefits, enhances the cargo security and speeds up the transportation. And the most essential advantage is cutting down the costs of road trucking, especially to transoceanic and long-distance transport.

Colgate-Palmolive Europe, which has 6 main European manufacture localities, 19 regional distribution centers and about 5000 delivery points in 35 countries, attempted to exploit the inter-modal method to achieve the target of lessening 25% CO₂ emissions of transportation sector in Europe by 2015 in basis of 2007 level (The Food and Grocery Experts, 2010). Their initial effort is redesigning delivery route from Anzio plant in Italy to German DC in Unna (The Food and Grocery Experts, 2010). Finally, they conveyed 900 shipments, 20 Ktons by the means of inter-modal, which originally transported on road. Besides, they use the road trucking as an urgent action when it is needed (The Food and Grocery Experts, 2010). In less than a year (from July 2009 to April 2010), they attained marked achievements-decreasing CO₂ emissions by 53%, saving 320,000 litres fuel, reducing mileage by 180,000 km and increasing the volume of goods from 25 to 29 tons (The Food and Grocery Experts, 2010). It can be seen in this case that, inter-modal transport is a good practice for operators who is facing the challenge of lorry road user charging.

Cooperate with other companies: Nowadays, competition and cooperation is the main trend of every industry of present era. As to freight sector, logistics providers are seeking for feasible methods to balance goods demand and transport cost. Working together with one or several companies through consolidating shipments and raising the utilisation of resources, could improve haulage efficiency by a big margin.

Consolidated shipments is usually employed by individual or small firms; however, as the lorry road user changing scheme is gradually processing, many big companies might utilise such practical method in trucking to tackle the issues of in-time products, urgent supply and the waste of container space. Delivering multiple items from different suppliers in one trucking could reduce cost and save energy which is good for environment.

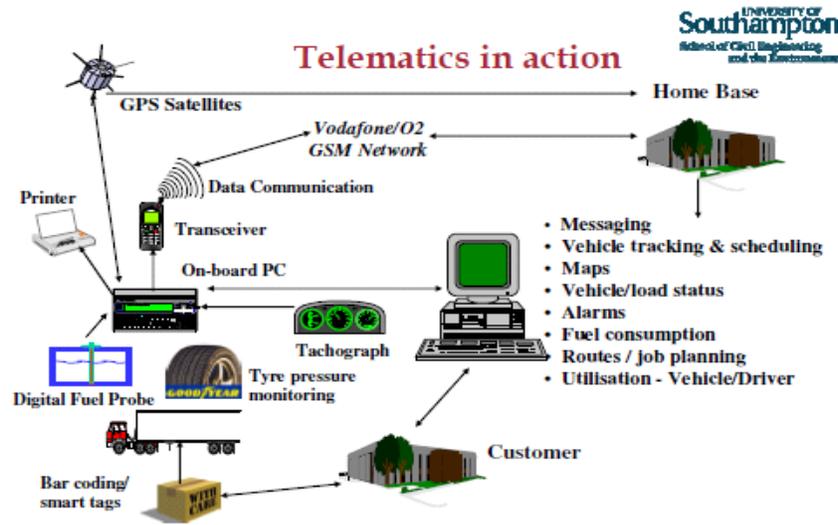


Fig. 1: Telematics in action Cherrett (2010)

Moreover, the freight operator could search for partnerships to fill return loads, which as a helpful way of reducing no-load drive. Nonetheless, all these initiatives require closely cooperation between different companies, while follow more specific and complicated arrangements. Therefore, before actual application, negotiation is needed to ensure the contracts are trustful and optimised schedule should be planned to enlarge their general interests. There are various groups and individual freight companies offered consolidation shipments advice and service, for example the GCT-group in Germany, which runs local and international transport businesses and help make manage decisions of consolidation shipments (GCT-group, 2010).

CONCLUSION

To sum up, this essay set out to explore the countermeasures of lorry road user charging scheme for road haulage sector. In doing so, it predicted the possible impacts of such scheme on the trucking industry, including the influence on the trip distance, vehicle types and transport mode, as well as the effect on the composition of trucks-the percentage of green and the UK registered vehicles would rose. Then the main body highlighted on some practical solutions to accommodate such changes and further analyzed three of them in detail with typical case study instances. The ITS technology has been popular in goods transportation for several years and will continue to play an essential role under the new circumstance; Inter-modal transportation also been applied in last few decades, and the convenience of converting transport modes make it an increasing importation operating practice; The new tendency of enterprises collaboration would enable considerable use

of the resources. In addition, re-planning delivery and depot sites, lightening the products and package as well as raising the productivity of relevant nearer regions were all feasible measures, given the situation of lorry road user charging.

However, the lorry road user charging scheme, which will be implement by April 2014, might not be the final charging system. This system is based on distance, varied by vehicle weight and size and established on general roads in Britain, with a series of measures to encourage the UK freight drivers; while the Europe expected a more sophisticated lorry road user charging system, which might combine time- and distance-based methods and include external charging, like congestion, accident and pollution fees (Transport and Environment, 2010). The current system, being utilised in the UK, is functioned as an interim scheme, due to the techniques are unfeasible, policies are imperfect for all vehicles and the great appeal from the UK drivers of to be charged fairly as foreign operators (McKinnon, 2005). In views of this, during the period of intervening, much more work will be done by the British government-- researches on time varied charging will be undertaken, models will be set up to forecast the trend of demand and supply. At the same time, road haulage logistics providers have to take the new changes into consideration. Many new countermeasures would be taken to adapt to the successor scheme, for example redesigning the time and route to avoid peak time and congestion.

The possibilities to extend this research are almost endless due to the lack of current investigation and the partial understanding of this issue. Much deeper research is needed to understand the impacts of lorry road user charging in the UK and more working measures will be provided.

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