

THE CURRENT STATE AND DEVELOPMENT POTENTIALS OF ROAD HAULAGE IN HUNGARY

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Abstract

Having entered the 21st century, we can note a growing role for logistics. As a consequence of the political, historical and economic changes taking place in the 20th century, companies are moving their production units to several countries thereby dividing up the production processes. The strengthening of this process would not have occurred without the creation of the single market of the European Union since the elimination of borders and European integration have been of fundamental importance in this process. This territorial realignment and the subsequent growth make it necessary that the raw materials and matrices used in the manufacturing processes as well as the semi-finished and finished goods reach the factories and warehousing centres located in different countries at the right time and in the required quantity and quality to satisfy the needs of production processes and customers. Expectations towards the reliability of transporting processes have been continually on the rise, therefore companies specialised in this sector have also had to continuously improve the quality of their services. These developments and endeavours have spurred companies involved in transport and forwarding to constantly reassess the utilisation level of their capacities and urged them to find optimum involvement of their resources in the processes of the supply chain.

1 Introduction

1.1 Role and importance of road haulage

Road haulage makes up for more than 72% of the entire product flow inside the European Union (European Commission, 2014). Compared with rail transport (17%), it is still faster due primarily to the more widespread public road networks. Though the European Union allocates significant funds for the development of the defined nine major rail corridors, these improvements of railway infrastructure will guarantee that goods trains can use them with the same technical conditions in 2030, the earliest. Considering these data and planning schedules, we cannot project a scenario where road haulage will be radically pushed into the background in the near future. (Karmazin et al. [7]) On the contrary, it cannot be completely eliminated as it is far more flexible and faster than rail transport. (Navigátor [13])

In Hungary, transport and haulage generate 6% of the GDP, and the value of transportation infrastructure accounts for one-fifth of the country's wealth, consequently it is very important to pay due attention to the development of transport. (Karmazin [5])

The commercial performance of the national road network grew by almost 40% in Hungary between 2000 and 2010. This has caused a significant deterioration in the quality of the road system. While earlier financing for development was secured from internal sources, in recent years exclusively EU sources could be used to cover the costs of renovation. Therefore, proper maintenance of the road network meant a serious problem for the national budget. (Szabó [16])

The aim of the organisation and road haulage to provide a fast and flexible service satisfying the needs of the shippers with a better utilisation of the loading capacity of transport vehicles and keeping a minimum level of empty freight runs. (Szegeci and Prezenszki [18])

Trends are pointing to a growth in the field of transportation which will provide adequate number of orders for both types of freight transport in the future. „The number of transport processes per product unit due to the continuous decrease of production within the company is on the rise. The distance covered by particular product units (in km) is also steadily growing. Without the continuous increase in transport activities the benefits resulting from the regional division of labour could not be reaped.

The consequences of this phenomenon are as follows: the average size of shipments decreases, the frequency of shipments between two points increases, keeping minimum stocks is possible only when transport service providers are available, holding/warehousing costs are down, transport services have to meet individual needs which differ from client to client. (Szegeci [17])

According to Komáromi [8]) the most important change in the course of the past one-and-a-half decades concerning the concept and functions of logistics has occurred due to a reassessment of relations between companies. Relationships characterised by short-term transactions are being replaced by long-term partnerships based on mutual benefits.” The formation of long-term partnerships can be also evidenced with large corporations settled in Hungary as well. In many cases, they manufacture only one type of component which they transport to another factory located in another country for assembly or the reverse way of the process. Analysing the activities of car manufacturing plants operating in Hungary, we find that practically all components are produced in different countries and then the vehicles are assembled here. It is this types of manufacturing processes that forwarding firms and logistics service providers are supposed to support with their specialised services. Involving forwarding agents into the manufacturing process offers the following benefits: speeding up goods transport by choosing the most appropriate transport routes and vehicles, enhancing the safety of goods transport by providing different types of insurance and security measures, reducing the costs of goods transport by choosing the optimal transport routes and means, applying special transport means like container, refrigerating and dry trailers. (Körmendi and Pucsek [10])

2 Introduction of the HU-GO road toll system

When Act LXVII/2013 entered into force on 1 July 2013, a usage-proportionate electronic road toll was introduced charging tolls proportionate with the distance covered on the motorways, expressways and main roads in Hungary. **The toll applies to a total length of 6,513 km of the domestic road network and its rate is determined by a number of factors, like the distance of kilometres covered on the expressways and main roads, the environmental classification of the vehicle's engine and the number of its axles. The toll-bound stretches of the road system and the applicable rates were stipulated in the National Development Ministry Decree 25/2013 (V.31.)**

Monitoring of the vehicles on toll road stretches is conducted by devices stationed by the State Motorway Management Company, assisted by 74 fixed gates and 45 mobile units deployed in vehicles. An advantage of the system is that the monitoring is conducted without stopping the transport vehicles. Payment of the toll can be facilitated through an on-board unit so these vehicles can be checked anywhere and anytime irrespective of the fact whether there is a checkpoint in their vicinity. (Krausz [11])

In the system dubbed HU-GO, the payable road toll is proportionate with the number of kilometres covered and must be paid in advance in any case. The rate of the toll commensurable to the distance covered varies with the type of road used (motorway, expressway or main road),

and also depends on the category of the vehicle (J2, J3, J4) and its environmental classification. The classification of the vehicles depends on the number of axles. Category J2 refers to biaxial vehicles, J3 includes triaxial ones, while J4 incorporates all other vehicles having four or more axles. Environmental classification is also based on three groups. Group C includes vehicles belonging to the EURO I environmental protection category. Since these vehicles pollute the environment most, the highest toll rates are paid after them. Group, B includes the EURO II category vehicles. The most preferential rates are charged for vehicles belonging to Group A with EURO III or higher category classification. (Oláh and Rónay-Tobel [16]) Table 1 shows the road tolls depending on road type and environmental classification.

Table 1 Gross toll rates for vehicles by road types and environmental classification (Ft/km)

Vehicle categories/Road types						
Environmental classification	Category J2		Category J3		Category J4	
	Expressway	Main road	Expressway	Main road	Expressway	Main road
>= EURO III.	44.54	18.95	62.49	32.80	91.04	56.78
EURO II.	52.40	22.29	73.52	38.59	113.80	70.98
<= EURO I.	60.26	25.63	84.55	44.38	136.56	85.18

Source: Transport Coordination Centre, 2015.

It is also clear from Table1 that the introduction of the electronic road toll resulted in a significant increase in the road toll rates payable. It is evident that there is a significant difference between the rates of expressways and that of the main roads. In case of expressways, the rate per kilometre can even be double of the main road rate. This difference gets smaller with the increase of the number of axles. In case of Category J2 and J3, EURO I class vehicles pay 27% higher road toll than vehicles belonging to EURO III class. In case of Category J4, this ratio grows to around 35% both in the use of expressways and main roads.

As a result of the introduction of the e-road toll, the relevant expenses of haulage and forwarding companies increased several fold..In this sector price competition is characteristically tough while the level of service fees is relatively low, consequently the question of how to build in the additional costs encountered into their pricing policy became an important issue for haulage companies.. It was considered evident that the extra costs had to be passed on to the customers. The problem was, however, that customers were not willing to take over the increased costs in all instances and it was necessary to carry out prolonged negotiations to reach acceptable agreements for each party involved. Eventually, the price hike was carried out successfully, in most cases the transport companies were able to pass on the costs to their customers. However, the organisation and optimisation of haulage tasks demanded plenty of time and energy since new quotations had to be prepared and existing agreements had to be renegotiated. Another issue to be solved was the requirement to pay the road toll in advance at its introduction which meant a great appropriation when haulage charges were generally paid only within 1-3 months after fulfilment. (Cziráki [2])

To certain carriers this caused temporary liquidity problems resulting partly from the fact that at its introduction the road toll had to be paid in advance and small companies were not able to ensure pre-financing for it. Therefore, the National Road Toll Payment Servicing Company (NÚSZ) that succeeded the State Motorway Management Company from January 2014, created the conditions for post-payment of road toll for customers deemed to be reliable enough. This arrangement makes it possible for companies with stable financial background to pay their bills at a time convenient to them – either biweekly or monthly settlement – after they have used the toll-paying stretches of the roads. Furthermore, the government has worked out a state-subsidised current asset credit line for haulage companies. SMEs registered with the State Motorway

Management Company, (and later with NÚSZ), can apply for a maximum 1 million forint revolving credit for their vehicles compelled to pay road toll after, which means that in case of repayment it can be used repeatedly, even several times under the Road Toll Credit Scheme. The credit arrangement helps to bridge the time gap creating liquidity problems between the pre-payment of the road toll and the inflow of freightage arriving sometimes only after 90 days. (Kovácsné Álmósy [9])

Since price competition is very tough in this sector and service charges move at relatively low levels, the trade took a unified position with respect to the new costs (usage-proportionate road toll) being made out in a separate line in the invoice and passed on completely to the customer. (Duma and Karmazin [3]) Although great emphasis was given to ample communication, the acceptance of the price hike did not go down smoothly. The mid-year introduction of the system also caused problems with customers claiming that these charges had already been built in the prices applied for 2013, on the one hand, and requesting exemption from the passed-on charges until the following year's price negotiations, on the other. Eventually, the freightage hike was successful, more than 80% of haulage companies were able to pass on the cost increases to their customers.

3 Results

3.1 The impact of developments in technical and IT applications on goods transport

Nowadays we witness a speedy development in technology and informatics. Perhaps the two concepts have become inseparable. Globalisation, the integration of markets, the rapid technological development paired with the continuous changes all increase competition; new rivals are appearing day by day. The logical conclusion is that only those actors can survive in the market who are capable of giving quick and flexible responses. In order to achieve efficient operation in the organisations we need informatics solutions by which we can ensure the best price, performance and quality. There is only one way to do this when resources are aligned to their best utilisation. In this way costs will be optimised which has become a matter of survival these days. Businesses that want to save costs on these developments will be left behind in the constant competition going on also between transport companies. Today informatics is indispensable in the area of competitiveness, organisational efficiency, effective value creation, allocation and utilisation of resources, preparation of decisions, identification of different-term objectives and the control of their implementation, the assessment of organisational performance, the recognition of new business opportunities, the integration and dispersion of organisational knowledge and several other areas. (Heteyi [4])

Goods transport also requires the application of modern, up to date technological solutions. (Karmazin [5])

The info-communication technologies applied in the sector go beyond the physical limits of service providing companies. In the process of resource allocation it is necessary to know and see the actual location of the transport vehicles since they serve as the basis for planning. Consequently, the fleet management systems (FMS) and the systems responsible for resource planning are built closely on each other. The aim and task of a logistics information system is the management of internal and external information required for the direction of a company's internal and external logistics chain. (Körmendi and Pucsek [10])

The recent advances in info-communication technology can be divided in two groups. One assists keeping contact with the transport means ensuring the acquisition of fast and accurate information about them while the other supports the effective utilisation of resources based on the information acquired.

The findings of a survey conducted by NRC Marketing Research and Consultancy Ltd. in 2012, show that managing directors at 61% of companies employing less than fifty workers do not consider informatics a strategic area. In the cost-structure of Hungarian small size companies, spending on informatics development accounts for only 2%. With businesses employing over fifty workers, one in eight managers believes that their company applies advanced information technology solutions. They survey also found that 58% of businesses employing less than fifty

workers use computer hardware older than five years, and this applies to software as well since they were bought mostly together with the machines. (Márton [12])

A great innovation in keeping contact is the general introduction of mobile phones ensuring easier and more reliable contact with the vehicle drivers. Furthermore, the application of smart phones makes it possible to take photos of the shipping documents right after the unloading was completed and e-mail them to head office. In this way a completed delivery can be invoiced immediately since the shipping documents can be attached to the electronic invoice.

Tracking the drivers' movements is made possible by a system operated by Qualcomm, which has already been installed to over ten thousand trucks in Europe. The on board unit of the system is capable of receiving messages about shipment tasks and store them as well, so they can be retrieved repeatedly and the addresses supplied with them can be set as destinations. The driver can also send messages via the on board unit, which comes very handy should his mobile phone be out of order. The system sends updated information every five minutes on the position and speed of the vehicle, the quantity of fuel available, and the state of the driver's driving and resting periods in daily, weekly or biweekly breakdown.

Currently, information flow between co-operating companies is conducted in the most various channels (by phone, traditional mail, e-mail or fax). Some companies employ advanced corporate management systems and are directly linked to similar systems of other companies, but it has not become widespread yet.

In Hungary, simultaneously with the introduction of the electronic road toll, we saw the installation of the On Board Unit (OBU) device which can assist the payment of the usage commensurate road toll. The OBU can detect whether the vehicle uses a toll road, and through the registration setting of the vehicle (completed on the www.hu-go.hu web site) the shipper can automatically pay the due amount. The application of OBU is more advantageous than the directional note, which can also be used to pay the road toll, since the charges are deducted from the balance only after the stretches of the toll roads actually covered. The Electronic Data Interchange (EDI) – that is the electronic exchange of data – ensures the despatch and receipt of business documents (e.g. orders, invoices, etc.) between the computers of business partners in specific forms. These are strictly structured messages between computers without human contribution. EDI can be interpreted as a standard for the despatch and receipt of electronic documents between business partners. We can conclude that the application of the systems described above ensures a more accurate, more cost-efficient and faster flow of information which, in the long term, improves a company's competitiveness, too. (Oláh [14])

4 Conclusions

In the era of rapid information flow, the IT development level of companies has a significant impact on their competitiveness. Unfortunately, our conclusions show significant arrears in this field. The development and maintenance of informatics and technical equipment necessary to ensure high-standard services would be important though they bring additional costs and the return on this type of investment takes some time.

To keep pace with steady competition and development, businesses need a corporate structure that is capable of giving a quick and effective response to challenges. Besides a well-functioning organisational structure, another indispensable requisite of holding one's ground is the application of the most advanced technology and the latest achievement of information science.

Considering the trends in developments and investments, most companies tend to see the potential in measures that bring higher cost-efficiency and improve the quality of the services provided. In an ever tightening competitive situation, where clients make more prudential calculations than previously and request several quotations for one transport job looking for the most favourable offer, reducing costs can lead to strengthening our market position. Besides being cost-efficient, companies will be able to distinguish themselves from the others by providing higher quality services.

A possible trend for future development can be the connection of communication means with corporate management systems as well as the widespread application of electronic data

interchange, which enables the client to receive continuous report on the position of the shipment at specifically given intervals without human contribution.

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