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**THE INTRODUCTION OF FLEET MANAGEMENT SYSTEM (FMS) AT BI-KA
LOGISTICS LTD. THE IMPACT OF FMS ON THE COMPETITIVENESS OF
MARKET ACTORS**

György Karmazin

Introduction

In order to improve, stabilize and increase efficiency in the operation **BI-KA** LOGISTICS Ltd. launched the Transics Fleet Management System in September 2009 which is considered to be the most up-to-date solution in the European market. The fleet management system can be associated with the Belgium-based Transics NV which is available through the Trans-Automat Ltd in our country. Their headquarters are in the town of Ieper. The company started its operation in 1991 as the research-development division of a company which has developed various software solutions primarily within the forwarding industry. In course of the first five years the operation of Transics was limited to the local market, then by the expansion in the European market it has become the leader of its own market in Europe since 1997. Today Transics – besides its headquarters in Belgium – has liaison offices in France and in the Netherlands. The employees of Transics make considerable efforts even in the German, Swedish and Spanish markets and recently in some of the Ventral-East European markets as well. The company is one of the greatest European competitors on the market of fleet management solutions which is proved by the fact that they have over 1,000 clients and almost 70,000 board units have been installed in vehicles. The idea that continuing IT developments might be an important step through introducing a reliable fleet management system, has been set up in the life of **BI-KA** LOGISTICS Ltd in autumn 2008. The choice of Transics was preceded by serious preparation, gathering information and consideration on behalf of the company which – just like in case of every IT investment – was one of the essential prerequisites of successful introduction even in this particular case. In course of preparing the final decision a key aspect was the international character of the given solution, the spread of its application and the available references, furthermore, the chance that certain surfaces of the system could be directly available for external utilizers (clients), too. Based on the above aspects Transics seemed to provide by far the most suitable solution among different choices. Another argument in favour of Transics was the rich international experience of the developing and distributing company. At the same time the international character is reflected even in the fact that the Transics system provides communication with the drivers in several languages. When the drivers registrate in the system through their personal cards, the system changes to the language which was previously fixed in the card. This function makes it possible for the logistics service company to flexibly shape their driver's staff even regarding the languages spoken by the drivers. Another important aspect was in course of the selection how the owner of the system supports the process of introduction and testing at the user, but also further essential importance was the aspect of high-scale R+D activity of the developing company. Transics has a very serious research-development division on both software and hardware sides, accordingly, companies purchasing the system shall receive updatings very soon and this secures that always the latest solution is available for users. In course of the decision process every aspect of the evaluation and selection spoke in favour of the solution of Transics. The first meeting took place in 2008. and obviously it was followed by numerous conciliation discussions and negotiations.

The representatives of the management of the using **BI-KA** LOGISTICS Ltd. also took part in a „benchmark” visit in Slovakia where the application could be followed for real at one of the reference companies. The introduction of the system started in August, 2009 step by step. First the vehicles were equipped with the adequate hardware instruments, but almost simulatenously the installation of the software also took place on the user’s side. Since using the system requires quite much expertise, the training concerning the operation of the systems was also of utmost importance.

Description of the system

The Transics tracking and fleet management system provides a full-scale data register, quick and reliable communication and a wide-range of supervision and control related to the above mentioned things between the vehicles of the applying company being under way and equipped with the adequate equipment and the dispatcher at the central office. Furthermore, it provides definite information to the owners of goods to be forwarded. Of course, the appropriate hardware and software elements are necessary for the operation of the system. On the side of hardware facilities the on-board computers have to be mentioned first of all. These on-board computers were made to perfect the working conditions of drivers, provide the traceability of the performance figures of the truck and satisfy the wide-range of information demands of any active forwarding company. The on-board computers accurately fix the position of the vehicle. This is basically approached by a GPS-GPRS based contact. The computer automatically registers the speed and distance data of the vehicle, the rotation per minute and its fuel consumption, but the precise and detailed activity of the driver shall also be fixed by this and navigation shall also be performed in case of need. Exact driving, loading, and waiting time is continuously being registered including the rest time of the driver. It is important to note here that all the information connected to the driving and resting time prescribed by the law is available for both the driver and the office monitoring his job. The role of the communication unit is also performed by the on-board unit thus the driver doesn’t need to send and receive messages primarily by phone (in words, or in SMS), but with the help of this unit. These messages are very important in both the determination of tasks of the driver and managing problematic situations. The **BI-KA** LOGISTICS Ltd. uses the Quattro Plus type on-board unit. The on-board computer includes the so-called Black box unit taking part in the transfer of signals and transmissions.



QUATTRO PLUS type on-board unit

The on-board instruments include, furthermore, the driver's smart card, the task of which is the detection of the driver since the registration of the driver into the personal computer happens by using this card. At the same time this card stores the information regarding working hours and provides the opportunity to install the linguistic environment of the operator's surface of the on-board computer.



Driver's smart card

The system realizes the real-time data flow between the vehicle and the office through high-speed data communication instruments. This data flow contains, among others, the text messages between the driver and the office, the real-time transmission of all the activity reports, warning messages, for example when the driver exceeds the allowed driving time. The **BI-KA** LOGISTICS Ltd. uses the server of the Belgian Transics for data storage. Information from the trucks arrives in Belgium. The data flow is very fast, messages are updated in every 10 seconds, it means that every message arrives in the office practically within 10 seconds. From the software side, part of the system is the Transics Fleet Monitor software, which makes the vehicles equipped with the adequate hardware traceable. By the assistance of the program package the employee of the forwarder – in case of permitting access – and the owners of the goods to be forwarded (shippers) may have a direct control over the fleet. This kind of control is supported by the fact that thanks to this program the vehicles appear on the office computers, digital maps and products shipped on such vehicles become easy to be traced. It can also be thanked to this program package that the driving and resting times can be followed as well as the other times used for various activities of the vehicles. Of course, the monitoring of the consignment itself becomes also continuously traceable and displayable and the software supports the visual appearance of warning signals and alerts, too. This latter includes the so-called „geofencing” with the help of which a signal can be requested in the system through marking a virtual area – a maximum of 100 km radius circle can be marked on the map - about whether the vehicle in question has reached this „fence” at the expected time or not. Such kind of help may be very important for the forwarder to inform the shippers and to treat unexpected situations, to avoid problems and occasionally to redesign the production process. The solution of Transics enables – as I have already mentioned – also that the tracking of vehicles with certain licenses should become possible not only at the forwarder's office but also for the shipper who is thereby in the position to follow the actual performance of his assignment of tasks and the momentary situation of his products.

This opportunity is especially good for the driver, because it has the message for the customer that he may trust him that the logistic service provided by him is transparent, can be followed

and is of high standard. The other software element of the system is the Transics Management Software, which – based on the introduced instruments basically supporting the archiving and communication – ensures the efficient control and management of the fleet. With the help of this a clear and detailed wage calculation, road report can be made, but through the program fuelling and fuel-consumption reports can also be performed just like speed and rotation statistics, analysis connected with driving styles as well as statements in connection with special events and deviations. The **BI-KA** LOGISTICS Ltd. equipped the trucks of the vehicle fleet of his own subsidiary with the necessary hardware instruments first. After this the vehicles of sub-contractors were in turn which receive their forwarding tasks from the company practically in 100%. This is naturally a serious investment, but indicates commitment to the sub-contractors for a long-term cooperation, which is today one of the key elements of competitiveness.

Advantages realized through the introduction of fleet management and the impact of introduction on the competitiveness of market actors

Through the introduction of the fleet management **BI-KA** LOGISTICS Ltd. could realize the short-term advantages which are typically associated with the introduction of such a system, and through the application, improvement and the customization of the controlling system results could be achieved which can be the basis of a long-term efficient and economical operation. First of all, the monitoring of vehicles and with this the logistics processes can be mentioned. Tracking the vehicle is an important thing not only because of occasional crimes (the stealing of the vehicle) but tracking also makes the rapid treatment of emergency cases possible. The reduction of transport organizer's costs as well as the costs of communication between driver and office are also relevant when we speak about the advantages of fleet management. This reduction was radical at **BI-KA** LOGISTICS Ltd as well. The new way of communication ensured by the on-board computer made communication not only cheaper but also more reliable. In course of the traditional communication via telephone misunderstandings might frequently occur simply due to the linguistic wording or the poor sound quality. Now the text messages are clear. However, it is a great advantage compared to SMSs that longer messages can also be sent at the same time. Earlier a longer or more complicated message or job instruction could be transmitted by several SMSs and this inevitably impaired the quality and clarity of the message. The driver had to respond to the freight organizer's message, confirm its receipt which used to be the evidence to the forwarder about receipt and acceptance of the message. The communication now is constantly archived, so the problematic issues can be looked back and the reason for problems can be explored. After evaluation the process can be developed in order to achieve the situation that such a problem should not occur again. Another benefit of the fleet management systems is that the operation of vehicles can be made more cost efficient. As already mentioned, the speed, rotation, fuel consumption and the distance covered are continuously registered in the system. The fuelling report can be completed through processing these data which contains the most important data and information concerning the driver, the vehicle and provides an aggregate of these data, the analysis of which may lead to considerable savings on costs. Training the drivers, the improvement of driving styles, but sometimes the feedback itself about information concerning driving may bring essential savings on costs.

Tracking the actual service processes itself include essential saving opportunities, but thanks to the developments of the manufacturer the circle of advantages due to this system is constantly expanding. In total the competitiveness of the service provider can be improved step by step if the information received in course of tracking is adapted and applied in business processes. In case of the **BI-KA** LOGISTICS Ltd. the route report is an essential

element of controlling, which precisely contains the most important data of the operation of the driver and the vehicle as well as their time consumption. Analysing these operations the activities can be explored which are unnecessary in terms of the customers' value creation. By ceasing the reasons the unnecessary capacity booking can be reduced and finally a higher rate of vehicle exploitation can be achieved. Besides the continuous tracking and monitoring of the fleet members the orders assigned to the vehicle can be treated in a more flexible way, be it the capacity planning of complete consignments or scheduling the transport of partial consignments. The optimum route planning is one of the most important sources of competition advantages ensured by fleet management systems on the long term.

The competitive advantage ensured by the fleet management hides further opportunities in the utilization of archived data, information and business development. The fact itself that the **BI-KA LOGISTICS** Ltd. applies a fleet management system of this kind shows a certain kind of professionalism and contributes to an increased prestige and reliability of the service. The fleet management supports the submission of offers, provides the suggested route for that certain forwarding job and the necessary turnaround time and thus provides a solid basis for the kilometres or cost based pricing. The future service fees can be further be refined by the analysis of waiting times and the costs related to this in case of regular forwarding tasks.

By the support of the Transics fleet management essential savings can be reached in fuel consumption, too. In the past couple of years **BI-KA** Trans Ltd, a subsidiary of **BI-KA LOGISTICS** Ltd. could reach a remarkable saving on diesel fuel costs: by the entire use of the system the company achieved a reduction of 3-4% of fuel consumption.

Savings on fuel consumption	
Average run of a truck per month in km	11,500
Average fuel consumption at 100 km (litres)	30
Average diesel price (net HUF)	271
Average savings (%)	2
Formula: # average run of a truck per month in km x (average consumption /km) * average diesel price (HUF) * average savings (%)	
Total savings per month per truck (HUF)	18,699

If system utilisers make use of the chances necessary for this return in an efficient way, then a reduction of costs in the amount of 18,700 HUF/month can be achieved per truck, which – considering the 15 trucks of **BI-KA** Trans Ltd. equipped with fleet-tracking may result in a total saving of 280,500 Ft per month. Due to the expected reduction of parasite kilometres about 11,900 HUF/month savings per truck can be approached in case the opportunities offered by the system are used efficiently by drivers and forwarders as well. This would mean a saving of approximately 178,605 HUF per month for the 15 member fleet of **BI-KA** Trans Ltd. equipped with Transics.

Related to the reduction of costs due to the control of the driving time and driving style the Transics system has the following opportunities: the control of driving and resting time (the vehicle driver is in the position to continuously observe where he is about with the given activity). The forwarder may follow this information and receives an automatic alert when a driver approaches the set maximum driving time or exceeds it. In reports about the speed of the vehicles the speed overshoots become visible. On the basis of these pieces of information and thanks to the measurements taken in order to avoid future deviations the extra costs due to overshoot of driving times and speed limits can be reduced. Prior to introducing the Transics

system the telephone costs of the company depended on the fact in which countries and what type of forwarding tasks were to be performed. In the Transics system the differences between communication costs of shipments directed to various countries disappear. It is to be known that roaming costs within the system cannot be ceased, since there may be a situation in every month that the driver has to call to or from abroad. However, significant reduction of costs could be observed even in the first month after its introduction (56.11%) compared to the average figures of the previous period. It has been experienced that further reductions might be achieved by the full utilization of the system.

Part of the data fixed by the system and the information to be extracted from this are available for customers, accordingly they are always in the position to obtain a realistic picture of the actual position of the vehicle responsible to carry out their forwarding tasks. Using the fleet management system it will be easier for principals to prepare for the receipt of vehicles and ensure staff for over-time loading. **BI-KA** LOGISTICS Ltd. makes every effort to ensure that his customers receive the highest level of services and contribute to supporting an optimal and cost efficient logistics system for his partners with its services. The utilization of the Transics system doesn't solely provide help for **BI-KA** LOGISTICS Ltd. but also for its partners highlighting the followings:

- it is based on real-time communication, therefore information about the place of the actual transport equipment can be realised promptly and clearly;
- since the localization on the digital map (e.g. the determination of loading sites) is not performed on the basis of street names but coordinates, the danger of failing to find the correct address on behalf of the driver can be avoided and deadline slips can accordingly be avoided;
- it provides a clear and detailed route report (e.g. about closed roads) which submits information not only for the driver but for the partners of the mandating partners, too, who in such cases may be informed about the reason for delays or changes of routes of the vehicles as well;
- the status of the actual transport task can be followed, i.e. it is visible whether the process is according to the plans or not;
- the driving and resting time belonging to each individual driver can be followed by the system which can promote predictability and computability;
- the fleet management reports the extraordinary events and circumstances in a rapid way, so the partner may immediately be informed about occasional changes in matters connected with the consignment involved;
- the fuel consumption, speed and rotation per minute statistics are available, which stimulate the drivers to an environment-conscious driving, accordingly the customers can indirectly also do much for environmental protection if they place orders with **BI-KA** LOGISTICS Ltd.

Summarizing the above, it can be confirmed that the Transics fleet management system – due to its prudent introduction and application – contributed to the considerable reduction of costs, the improvement of the standard of customer care and the development of the efficiency of internal processes at **BI-KA** LOGISTICS Ltd.

