ELECTRONIC FRIGHT EXCHANGES PLATFORMS AS A TOOL SUPPORTING THE MANAGEMENT AND MOVEMENT OF INFORMATION AND LOADS IN SUPPLY CHAINS

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Abstract

The purpose of this article is to assess the usability and security of electronic fright exchanges as a tool supporting work in transport, shipping and logistic companies. Most companies from the TSL sector use electronic fright exchanges platforms, which is why they exert a significant impact on the efficiency of the flow of information and goods in the supply chains.

The main research problem of the work is to determine the range of usability of electronic platforms in the context of not only finding a free load space or the load itself, but also improving communication between the commisioner and the contractor as well as the transporter himself. Thanks to modern technology, it is possible to track vehicles in real time, monitor phisical condition of the load and maintain continous communication with both customers and drivers. The modern solution allows to increase the flow of information in the supply chain and faster response to unforeseen situations, which translates directly into a sense of security among cooperators. The security of cargo is an important element of the entire supply chain, therefore the systems that checks the optymization, reliability and integrity of users of electronic fright exchanges will be analyzed.

The research method that was used in the article is primarily economic analysis and the synthesis of available scientific materials such as: books, monographs, articles, scientific and industry magazines.

Keywords: Electronic fright exchange platform, supply chain, supply chain management, optimization, flow of goods and information.

1. ADMISSION

The supply chain covers all activities related to transport - from the initial stage, which obtains all kinds of raw materials to the final that provides the final product to consumers. Moreover, in order for the entire process, including the processing of goods, to be carried out efficiently, the flow of the information during the entire process is neccesary[1]. The use of systems based on the Internet and information systems supports the coordination and integration of effective delivery of products from manufacturers to the target recipient, bypassing unnecessary intermediaries. Thanks to the possibilities of online work supporting tools, only information regarding the load and the demand for it circulates between the participants of the supply chain, while the product itself usually bypasses the magazine and goes to the direct recipient. From the moment of production to the destination, the goods are still in motion. It is not stored and does not go through wholesalers or distributors. Thanks to this, the added value is generated, because the goods reach customers faster. Electronic fright exchanges are a helpful tool in such a model of the flow of goods and information. With their help, it is possible to obtain up-to-date information from the current situation on the market of transport services, to the location of a vehicle with a load itself. The flow of information between contractors is smoother, which in turn translates into the possibility of eliminating intermediaries. Electronic transport platforms are an inseparable working tool for most of the links in the supply chain.

2. CHARACTERISTICS OF ELECTRONIC FRIGHT EXCHANGES PLATFORMS

High costs of own fleet maintenance caused by increased fuel prices, empty mileage, increased wages, insufficient information flow between entrepreneurs forced companies to reduce costs associated with the

delivery of goods. This difficult step has become possible thanks to electronic fright exchanges. First of them were created in the 80's of the last century. Their main task was to strive for better use of the vehicle fleet, and therefore to reduce the number of empty runs. Today, electronic transport exchanges operate using the Internet and are called a virtual market - constituting a specially dedicated internet platform. In addition to the original task, they are an ideal tool to increase the flow of information between interested parties. This translates directly into greater possibilities for carriers to find free loads, thus limiting empty runs. On the other hand, fright exchanges create possibilities for manufacturers or forwarders to deliver goods more quickly to the desired place [2].

Fright exchanges have become an indispensable part of the majority of enterprises from the transport shipping and logistic sector, permanently inscribing in their strategies as well as logistic concepts. All exchanges offer sale of goods and vehicles ready for transport processes. In most cases, they operate as a website with the required access authorization. Websites function like electronic bulletin boards. Users place their ads on fright platforms[3]. It can be concluded that electronic online exchane platforms are based on a brokerage model. The operator of a given platform is a broker. The users, as mentioned above are carriers, forwarders and producers. Through the online / broker platform, they report the need for transport at a given time, date, place and using a specific type of vehicle. The broker connects users and allows parties to enter into transactions. His reward is a monthly subscription paid by users [4].

The most popular Internet transport platforms are:

- TimoCom & Cargo,
- Tran.eu,
- Teleroute.

All of them have both - a large number of registered users and a satisfying volume of transactions made with their help. It also results from the fact that they are a tool that improves everyday work, because it is possible to use them, for:

- cargo management,
- collecting transport orders,
- controlling dispatchers,
- monitoring of vehicles and goods,
- minimizing working time thanks to simultaneous communication with many people,
- improving the company's external communication,
- global freight management.

All of the above are only a few added values that electronic fright platforms generate. It should be noted that all of specified benefits affect a more efficient flow of both information and cargo throughout the supply chain. First of all, thanks to electronic fright platforms, it is possible to deliver a load directly from the manufacturer to the final destination, without having to stop the load on intermediate stations, such as warehouses or distribution centers. This requires precise transport planning. It is related with the need to obtain detailed information on transport capacity on the market, and these in turn are best shown on electronic frights platforms. It can be stated that electronic transport platforms are a reflection of the transport market, because only a few companies do not use transport exchanges at all, therefore it can be assumed that most of them post information about the current situation, and therefore about their possibilities and transport needs. The analysis of two selected platforms, TimoCom and Tran.eu, will show the size and scale of the impact of electronic fright platforms [5].

3. FUNCIONALITY ANALYSIS OF ELECTRONIC FRIGHT EXCHANGE PLATFORM TIMOCOM

The TimoCom Truck & Cargo platform has been operating since 1997. It was created on the initiative of the German fright forwarding agent Jens Thiermann. He was looking for a tool that would be a pan-European reflection of the current demand and supply for free freight in transportation. His product, thanks to its functionality, quickly gained on popularity and over time increased by additional modules such as: TCeBid, TC Profile, TCeMap or TC Transport Order. Today, the electronic fright exchange TimoCom is by far the most popular fright exchange on the European market [6]. Operating about 750,000 international freight offers and free spaces daily, with over 516 million tons of cargo offered on the market during the year. It has over 127 thousand users from all over Europe. You can find all kinds of cargo on it, from small to over-sized. TimoCom is an international platform, its website is available in 25 languages, and all offers are automatically translated. This is a unique added value, because thanks to this foreign contacts become more real and public. It affects the increase of transport possibilities in international supply chains. Finding transport outside the state borders becomes much simpler and less labor intensive, which in turn allows you to limit valuable time spent on looking for contacts. At the same time, this translates into lower costs of unnecessary work and possible delays [7].

The electronic platform TimoCom has introduced to its system several additional modules, which aim is to optimize the work of its users. One of them is TC Transport Order. This application allows users to carry out transactions in fully digital form. Previously, users wishing to outsource a given entity had to attach their own separate order separately in the mail. TC Transport Order unifies documents and after completing necessary data it generates all necessary documents that are easily sent to contractors. This allows you to save time to fill your own printed orders, or sometimes to translate foreign ones. The unification of the circulation of documents and the translation of the websites indicates a large internationalization of the freight market. The time saved optimizes the work of all users and generates added value for the whole platform. In addition, TC Transport Order automatically notifies users by an e-mail of all inquiries received. This is to reduce the likelihood of missing a favorable offer and the possibility of cooperation [8].

An interesting feature of TC Transport Order is the possibility to search for the desired offer at many partners simultaneously in real time, and what is important based on current prices. Users get a preview of all orders and their current status. An additional possibility is to add contractors from outside the platform to the list of orders. This minimizes the possibility of an error and prompts you to use this tool to centrally manage all orders in one place [9].

TCeMap is another application that has a direct impact on both information and loads flow. This module is useful when calculating the cost of transporting cargo on the basis of a specific order. Thanks to this, it is possible to compare the prices proposed with the actual costs. In addition, the application allows you to choose the optimal route by using the current digital map of Europe. It can monitor traffic and track the current position of all vehicles. Until now, the possibility of monitoring the vehicle was available when the carrier provided a login and password for the tracking system of a specific manufacturer. This involved the risk of leakage of confidential information. TCeMap integrates 214 telematics systems, that allow vehicle monitoring within one interface and map. The application also makes it easier to search for freight using the vehicle locator. By just selecting the desired vehicle from the list, the system immediately assigns its current location as default measure when searching for offers. The search radius can reach up to 200 km. Above mentioned possibilities of one of the systems application reflect the idea of logistics 4.0 and so-called "Internet of Things". TCeMap is another example of increasing the flow and quality of information in the supply chain without the need for additional time-consuming activities. Just a few clicks, and the program will find the vehicle, load, route and calculate the cost of transport. The ability to track the vehicle in real time increases the security of goods and allows more efficient management of possible unwanted events between successive links in the supply chain.

With electronic fright exchanges platforms analysis comes the question of their safety. They operate in a virtual market in which the direct contact limits to just an e-mail correspondence, less often a phone call.

Unfortunately, as in the traditional market,numerous attempts of fraud and extortion occur. The TimoCom operator, in order to reduce the likelihood of fraudulent users, inspects them. The control and verification system is as follows [10]:

- Before the potential client gains access to the platform, his / her financial situation and possible debts are analyzed. The date of business registration is checked, which must be at least 6 months prior. The references and reputation of the entrepreneur among existing contractors are also verified.
- The next step is the assessment of exchange users. The components in this case are the quality and reliability of the client's work subjected to periodic analysis.
- TC promotes among its users independent control of future partners, through shared verification with a checklist. There are points on it that you should pay attention to before you start working. These are, for example: ID number on the platform, the same contact details in the order and profile.
- Index of companies that provide access to their documents proving the legality of their business. These include: the decision to assign an tax identification number and REGON identification number, an appropriate license for transporting or for intermediating in the transport of goods, a Civil Liability Carrier's / Shipper's Liability, an entry to CEiDG (Central Registration and Information on Business) or to the National Court Register. The index has nearly 40,000 proven companies from all over Europe. The data being shared is checked and updated on an ongoing basis, therefore, entities with outdated information can not be seen there.Cooperation with companies with the TC Index is actually a guarantee of reliable and honest cooperation.
- The department of debt collection and legal advice as well as the possibility of collection of receivables.

The above examples indicate that great effort is made to ensure that the flow of goods and informations that takes place through electronic fright exchanges platforms is safe and secure. The fact that any prospective contractor has already been thoroughly inspected by the platform operator and freely discloses his own data is evidence of the transparency of his business. Thanks to this you can save time, look for information about a given subject among your contacts or on the Internet.

Analyzing the modules available in the TimoCom system, it can be stated that their main task is to optimize the working time of all its users. Each application allows you to save time and transparency of the business. In addition, TC focuses on the unification of certain activities, and this in turn eliminates possible errors or misunderstandings both in the circulation of documents and in communication between co-operators. Analyzing the above in terms of optimizing the flow of information and goods in the supply chains, it should be emphasized that all system modules are built in such a way that information about loads, current demand and supply is quickly and easily communicated to other users. Thanks to this, it is possible to manage fleet and cargo more efficiently, which directly affects management optimization throughout the entire supply chain.

4. FUNCIONALITY ANALYSIS OF ELECTRONIC FRIGHT EXCHANGE PLATFORM TRANS.EU

The most popular transport platform is Trans.eu. It was launched in 2004 by the Polish company Logintrans. Despite numerous competition on the market, it quickly gained the trust of many entrepreneurs. Moving with the times, the platform has expanded its core business with additional modules. Alike TC it does not only provides fright offering services, which complement the whole creating added value across the platform. Trans.eu is used in 45 mainly European countries. The website is available in 25 languages. The system uses 37 thousand. subscribers. In 2017, there were 3.9 million completed transactions via the platform. However, the total annual number of freight offers was around 112 million in the previous year [11].

Given that all activities are carried out via the Internet, the platform operator took care of the safety of its users' data and implemented the Information Security Management system obtaining the ISO / IEK 27001 certificate. This system is based on a well-thought-out action taking into account protection and data security on every typeface. Taking into account the new Regulation of the European Parliament and of the Council (EU)

2016/679 of 27 April 2016. on the protection of individuals with regard to the processing of personal data and on the free flow of such data, the decision on certification was an ideal representation of the operator's efforts for the safety of its users [12].

The main task of Trans.eu is the ability to offer freight and search for available vehicles. In addition to the standard search panel, the platform offers a number of auxiliary functions. One of them is TransOrder. It mainly involves the automatic generation of a transport order. In the application database, you can choose the appropriate template for both orders and transport conditions, which you can give a specific system of sending consecutive numbers, so that they are identical to internal documents. The order is generated both by downloading data from the system and a specific offer, but also it is possible to read data from its own contractor database. Monthly, with the help of this tool, an average of 400 orders are issued.

The Trans.eu electronic platform introduced a module for quick contact with drivers. With the help of TransTask from the office position, you can quickly send the order along with the necessary details to the driver on their mobile devices. It eliminates additional tasks related to the necessity of transcribing or ordering orders, as well as the possibility of mistakes resulting from insufficient communication between the office and the driver [13].

When analyzing the Trans.eu electronic transport platform in terms of safety of the flow of goods, it should be noted that, similarly to TC, the verification system of potential users is conducted. The financial capacity of the entity, reputation, length of functioning on the market, basic documents allowing to conduct business are checked. In addition, Trans.eu audits the Owners and Contractors Protective insuranse policies. It checks and translates them into 16 languages, thanks to which they are understandable for foreign partners. After registering on the platform, scans of the above-mentioned documents are publicly available on the user's profile. In addition, a rating and opinion system operates on the platform in which users inform and evaluate cooperation. The feedback and evaluation system is the best source of information about the reliability of the user. All this aims to maximize the transparency of operations, which in turn reduces the risk of unsuccessful transactions.

Considering the number of subscribers and the annual volume of completed transactions, it can be seen and analyzed in terms of optimizing the flow of goods in supply chains, it can easily be seen that this is a basic tool for freight forwarders, carriers and producers. They, on the other hand, are the main links in each supply chain, because it is actually up to them to perform the service of moving the cargo. Introduced standardization and obtained data security certificate additionally allows to reduce the risk of leakage of confidential information, while all users of the platform are extremely transparent, because the necessary information is generally available. In addition, the possibility of quick contact with drivers, other users and limiting time to unnecessary activities, thanks to the extended function, leads to liquefaction of information and goods not only between partners, but more broadly it can be said that it directly translates into more efficient management of the entire supply chain.

5.   CONCLUSION

Electronic fright exchanges platforms have been optimizing the operation of basic cells in the supply chain for years. Thanks to the new solutions introduced, the basic and time-consuming activities are being successively reduced. In addition, taking into account the number of users on only two platforms, the source of orders can be easily varied. In the past, companies were based on long-term contracts with selected enterprises. It naturally had the advantage of a proven contractor, however, it was often more expensive and did not solve the problem of empty runs. Currently, entrepreneurs are using more than one fright exchanges, which allows them to reach the most advantageous offer in a relatively short time. Additionally, it eliminates the problem of empty runs. Such a model of functioning gives the opportunity for more reliable and precise planning of transport in the supply chain. The risk of delays in transport is minimized because you have access to thousands of offers per day. Electronic transport platforms together with their additional functions optimize the

users expenses, as they reduce the likelihood of overpaying for the service. The level of demand and supply and prices are generally available, so users can quickly calculate the cost of the service, and thus, it is possible to set the budget more precisely and eliminate errors.

To sum up all of the above, apart from optimization in the management and flow of goods, the flow of information is also important. They are actually made available in real time and each user can see the current situation. It can itself analyze the demand and supply for specific loads or vehicles in specific locations. The annual number of offers made available may be the basis for analyzing the most popular directions of goods flow, and thus it may be the basis for setting new targets in the company. Analysis of all these data and proper management of this information can also affect the supply chain management. It is possible to more accurately predict the most desirable directions of development. Summing up, electronic fright exchanges platforms are used to optimize transport, and this in turn allows to optimize the entire supply chain, because transport covers the most important stages, such as delivery of materials for production, transport of cargo to intermediate stations, and then to the final recipient, which can be a retail store. Therefore, optimizing transport and reducing its costs directly translates into lowering the costs of the entire supply chain.

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