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# TRANSPORT EXCHANGES AS TRANSPORT AND FORWARDING MANAGEMENT SYSTEMS

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## ABSTRACT

Changes taking place in the economy affect the emergence of innovations. It is primarily technological progress that influences the creation of new solutions. Logistics is one area where innovations and improvements are needed. New solutions are primarily process improvements, the implementation of autonomous vehicles, solutions that help to supervise transport processes, and the effectiveness and costs of their implementation. The greatest benefits of technological progress are the provision of knowledge and information about the journey, the efficiency of a given car and driver, and changes in the market (e.g., information about the demand and supply for given services). This article aims to identify the possibilities of using freight exchanges in transport and forwarding management. It is based on a literature analysis and statistical data from systems dedicated to transport and forwarding, as well as surveys conducted by the author. The article uses analyses of demand, supply and prices based on data from transport exchanges. Possibilities of obtaining information for better management of a transport company were presented. Possibilities of obtaining information for better management of a transport company were presented. The article presents the relationship between the use of the transport exchange and the size of the company, fleet and the number of countries served as part of transport services. The possibilities of using transport exchanges and the possibility of replacing software dedicated to transport and forwarding by the discussed programs were indicated.

## KEY WORDS

**transport exchanges, transport management, transport and forwarding, IT systems**

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## INTRODUCTION

Technological progress significantly affects the development of the economy. It also affects enterprises on a micro-scale. Innovations and new solu-

tions are the driving force of the developing economy. They affect individual sectors. Globalisation and the influence of the Internet are other factors influencing its development. All these factors also affect the transport and forwarding sector.

Currently, we can observe great technological progress in the industry and logistics. Automation in

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production halls or warehouses is becoming a common solution today. Two aspects of its activity can be improved in transport and forwarding: cars and transport supervision. In the first instance, prototypes of autonomous vehicles are being created, moving on autopilot and, in more advanced technologies, without the driver's intervention. Thus, a new solution would be a car that moves on the road independently and does not require human service. Such solutions require IT systems that will actually supervise and drive autonomous vehicles. These systems are being created at the current stage of economic development. However, IT systems currently available on the market offer great opportunities and solutions to improve and increase the efficiency of transport and fleet management. Such systems are transport exchanges and telematics systems that indicate the location and current costs of the transport service. This article identifies possibilities for using freight exchanges in transport and forwarding management. It is based on a literature analysis and statistical data from systems dedicated to transport and forwarding, as well as surveys conducted by the author. The possibilities and available solutions offered by transport exchanges were presented, which can be used to analyse the market and the services offered.

## 1. LITERATURE REVIEW

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Currently, the functioning of enterprises is based on information systems to a greater or lesser extent. Industry 4.0, including automation, will significantly impact the economy's sustainable development (Richnák & Fidlerová, 2022; Saniuk et al., 2022; Szpilko & Ejdys, 2022). The impact of the market structure and IT systems is crucial in the mobile industry (Jeanjean & Houngbonon, 2016). The future is about urban, delivery and individual transport innovations, affecting intelligent traffic (Balog & Knapčíková, 2016). According to research by the American Council of Logistics Management, transport is the leader in the use of the Internet in supply chains, with a share of 56.2 % (Lancioni et al., 2000).

The Internet has undoubtedly contributed to the development of the economy. One effect is the ability to quickly send various information, including on demand and supply (Rayport & Jaworski, 2002; Beynon-Davies, 2004). In addition, it strongly influenced information technology and new software development for various economic sectors. It gave rise to

electronic marketplaces, also used in transport, e.g., electronic exchanges (Kovács & Grzybowska, 2011, p. 2).

Transport exchanges are “platforms for exchanging information on offers for the transport of products, goods, materials, etc., as well as loads between market participants” (Sosnowski & Nowakowski, 2015, p. 12). These platforms provide a great opportunity for those with free capacity on the way back to find an offer among many freight and warehouse offers (Kovács, 2011). B2B relationships use websites, instant messaging, and mobile applications that replace mailing lists, faxes, or offline databases (Witkowski et al., 2020). Freight exchanges evolved from dealing only with transport services to using optimisation up to the automation of the transport management system (Baron et al., 2017). Transport exchanges also allow long-term relationships between participants in supply chains (Witkowski, 2019). This is also reflected in the creation of agile supply chains, which are mainly based on networks, process integration and virtual activities (Grzybowska & Kovács, 2012; Christopher, 2000; Lee, 2001; Bohács, Frikker, & Kovács, 2013).

Two types of open and dedicated exchanges can be distinguished (Sosnowski & Nowakowski, 2015, p. 12). Transport exchanges are also becoming a determinant of e-logistics (Polkowski et al., 2014). Freight exchanges in the European Union are becoming more common, with growing competition between them (Jain et al., 2019; Miller, 2020; Fohring & Zelewski, 2015). It is an ideal tool in the transport orders market to increase the indicator value of the cargo holds' space use while carrying out full transport orders, i.e., the indicator of transport efficiency (Mieszaniec & Ogrodnik, 2010). This indicator is approximately 55 % in the Member States of the European Union. Exceptions are Germany with 65 % and Spain with 80 % (eea.europa.eu, 08.02.2023). Freight exchanges are also a solution to seasonality in logistics (Gmys, 2018; Pędziwiatr & Kaczmarek, 2018). The former are the most popular and form the basis for the modern operation of freight exchanges (Fuks et al., 2015). Due to the increasing freight rates in logistics, new and more effective transport solutions are constantly being sought. Transport exchanges create price competitiveness and the possibility of eliminating the so-called empty runs (Föhrling & Zelewski, 2015; Kupolova, 2022). These include exchanges such as TimoCom, Trans.eu, Teleroute and others. Dedicated exchanges are used by a group of companies based on an extranet. They have limited access only to a given

team or a group of companies. The purpose of transport exchanges is to post information about offers by all companies that join and subscribe to a given exchange.

A transport exchange allows for:

- issuing transport offers,
- looking for transport offers,
- posting loads for transport,
- searching for loads to be transported,
- issuing offers for the lease of warehouse space,
- looking for offers for renting warehouse space,
- participating in tenders regarding transport and storage,
- checking contractors.

Freight exchanges have three main areas: transport, freight and storage, as shown in the figure below.

Each area has two “listing” and “searching” possibilities, meaning that each user can list and search for transport services. Thus, transport exchanges are a meeting place for people offering transport services and people looking for these services. The situation is similar to the warehousing offer. Here, similarly, the warehouse space can be listed for rent. The continuous development of the economy and competition also means the continuous development of transport exchanges. Therefore, companies keep offering new services, solutions and packages that improve and make their exchanges more attractive. Among them, the following can be distinguished:

- the ability to track the car in real-time,
- automatic calculation of the rate per km,
- automatic calculation of the fare for the entire route,
- route planning,
- indication of alternative routes depending on traffic jams and road conditions,
- indication of tolls,

- speed and tonnage limits,
- list of debtors,
- legal assistance,
- assistance in collecting debts, etc.

Exchanges can save companies time, provide access to a wide offer and make it easier to set prices and negotiate (Lewandowski, 2014; Maruszczak, 2019).

Teleroute, based on the Minitel system, was the first freight exchange established in France in 1985 (Lee, 2018). Currently, there are many transport exchanges on the market, and the most popular in Europe are TimoCom, Trans.eu, Teleroute, Cargopedia, LKWonline, 123Cargo, and Wtransnet. The main features differentiating freight exchanges are the number of offers, users, and prices. However, these exchanges also differ in specialisation. In most cases, they are focused on specific countries or regions. Specialisation and price are two conditions that determine the number of users and the number of offers available as a result. The network of the current market leader, TimoCom, has 127 000 users, translating to 750 000 offers per day (Maruszczak, 2019). In recent years, freight exchanges have evolved from the basic function of presenting cargo and unit offers to a highly developed tool with additional functions. Currently, they are real-time contractor communicators; they are also an efficient document flow channel. In addition, freight exchanges allow for the optimisation of routes and the calculation of costs. Through the tendering platform, companies can raise the best price. Moreover, in addition to traditional transport services, freight exchanges publish offers for renting warehouse space (Starkowski, 2015).

Changes in the economy generate new solutions and innovations in logistics, process automation, and solutions, such as work in the cloud (Adamczak et al.,

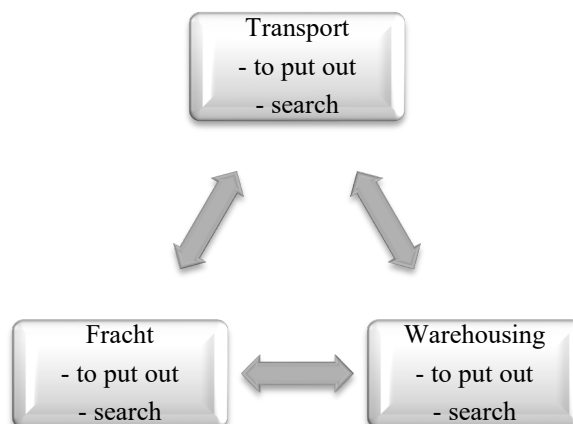


Fig. 1. Areas of freight exchanges

2022; Richnak & Fidlerova, 2022; Danko & Straka, 2022; Loucanova et al., 2022). One such solution is transport exchanges, which are new to the implementation of transport transactions. Undoubtedly, they compete with forwarding, although forwarding uses transport exchanges in its activities. Nevertheless, many companies relinquished forwarding companies because they use transport exchanges directly.

The relevant literature discusses the functioning of transport exchanges, pointing to their benefits (Witkowski et al., 2020), environmental impact through oil consumption, CO2 impact on the economy, etc. (Tiwari & Singh, 2011; Tánzos & Török, 2008; UNCTAD, 2015; Caplice, 2007). However, there is no analysis of the impact of transport exchanges on transport companies in times of economic crises, linking them with other systems dedicated to transport and forwarding. Some studies strictly show the possibilities of the basic form of exchanges and their operation, e.g., in the cloud (Grzybowska, Kovacs, & Lenart, 2013) or Agent-based Freight Exchanges (Föhring & Zelewski, 2015); however, no description exists of the possibility to use data on supply, demand and prices, which are to some extent a learned effect of the operation of exchanges. Therefore, this study will discuss the possibility of using data from transport exchanges and merging this system with other systems dedicated to transport.

## 2. RESEARCH METHODS

This study uses statistics on demand, supply and prices of transactions concluded on Trans.eu transport exchanges, presented in the Metrix system. The

article also presents the author's study of the transport services market.

The Metrix system was used for the analysis, which collects data from Trans.eu transport exchanges and presents them as line diagrams. This program is based on three main data (<https://metrix.trans.info>, 20.05.2020):

- demand analysis,
- supply analysis,
- analysis of freight prices.

In 2020, the author conducted survey research on the use of IT systems in the transport-forwarding-logistics industry. It covered 200 enterprises, divided into two groups: transport and non-transport. The table below lists companies that participated in the survey. This division was used for a comparative analysis between transport and forwarding companies and other organisations. The sampling method was random. A questionnaire was divided into four parts: the metric, the common part, the part for transport companies, and the part for non-transport companies. It was sent to the respondents electronically and on paper. Table 1 below presents data on the respondents. This division also includes a distinction between transport and non-transport companies.

The table shows the number of companies broken down into transport and non-transport companies, i.e., 60 and 140, respectively.

The research comprised two parts: (1) the statistical frequency analysis into specific aspects of systems supporting transport management using the simple rate index and (2) the creation of the probit model.

The model was developed to explain the main factors determining whether the telematics system is or is not used by the transport and forwarding com-

Tab. 1. Classification of surveyed entities

		OTHER COMPANIES	TRANSPORT COMPANIES	TOTAL
SIZE (NO. OF EMPLOYEES)	micro (1-9)	20	8	28
	small (10-49)	32	24	56
	medium (50-249)	48	16	64
	large (>=250)	40	12	52
	TOTAL	140	60	200
ROUTES (RANGE)	local	8	4	12
	regional	8	12	20
	country-wide	24	0	24
	international	84	36	120
	global	16	8	24
	TOTAL	140	60	200

pany. For this purpose, the statistical probability probit model was created to calculate a company’s probability of using a telematics system. The probit model was chosen for the analysis because of the two-level output. In this specific case, the two outputs were (1) the company uses a telematics system (the dependent variable’s value equal to one) and (2) the company does not use a telematics system (the dependent variable’s value equal to zero).

The following formula (1) for the probability of occurrence of the event in the probit model (Greene 2011) was used to calculate the probability:

$$p_i = prob [Y_i = 1|X] = \Phi(x'_i\beta) = \int_{-\infty}^{x'_i\beta} (2\pi)^{-\frac{1}{2}} \exp\left(-\frac{t^2}{2}\right) dt, \tag{1}$$

where:

$\Phi$  — distribution function of the normal distribution,

$x'_i\beta$  — linear combination of independent variables:

$$x'_i\beta = \beta_0 + \beta_1x_1 + \dots + \beta_kx_k. \tag{2}$$

The interpretation of  $\beta$  coefficients obtained in the model is limited. It can only be used to indicate the relationship’s direction. The marginal effect for changing the value of the  $x_k$  variable when other variables remain constant was calculated to assess the strength of the dependence. The following formula was used (Greene 2011):

$$\frac{\partial p_i}{\partial x_{ik}} = \varphi(x'_i\beta)\beta_k, \tag{3}$$

where:

$\varphi$  — probability density function of a standard normal variable.

Gretl software was used to compute the model. Its output depended on three independent variables, i.e.:

- *fleet* — this variable can take the following values: 0 for no fleet, 1 for one vehicle owned, 2 for 2–5 vehicles, 3 for 6–10 vehicles, 4 for 11–20 vehicles, 5 for 21–40 vehicles, 6 for 41–100 vehicles and 7 for a fleet of 101 and more vehicles;
- *countries* — the range of activity is measured by the number of countries where the entity operates. The values for this variable in this specific model range from 1 to 22.
- *size* — the size of the company can have four different values: 1 for micro, 2 for small, 3 for medium, and 4 for large company.

### 3. RESEARCH RESULTS

#### 3.1. FUNCTIONING OF TRANSPORT EXCHANGES AND IT SYSTEMS IN TRANSPORT AND FORWARDING ACCORDING TO SURVEYS

Companies were also divided by size (considering only the number of employees) and the activity area. The chart below shows the number of vehicles owned by the companies.

Most of the surveyed companies had 3 to 5 vehicles. Only 10 % of respondents indicated owning a fleet of more than ten vehicles.

Respondents were asked about the use of IT tools in their business. The table below presents the results indicating the use of these tools, broken down by transport and non-transport companies.

The vast majority of transport companies use IT tools in their daily activities. Almost half of non-transport companies use IT tools dedicated to transport management.

The analysis also looked into the types of IT systems used by the surveyed enterprises. The obtained

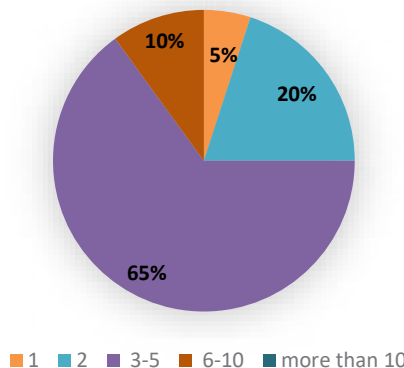


Fig. 2. Percentage of companies using the indicated number of vehicles of certain brands in their fleet

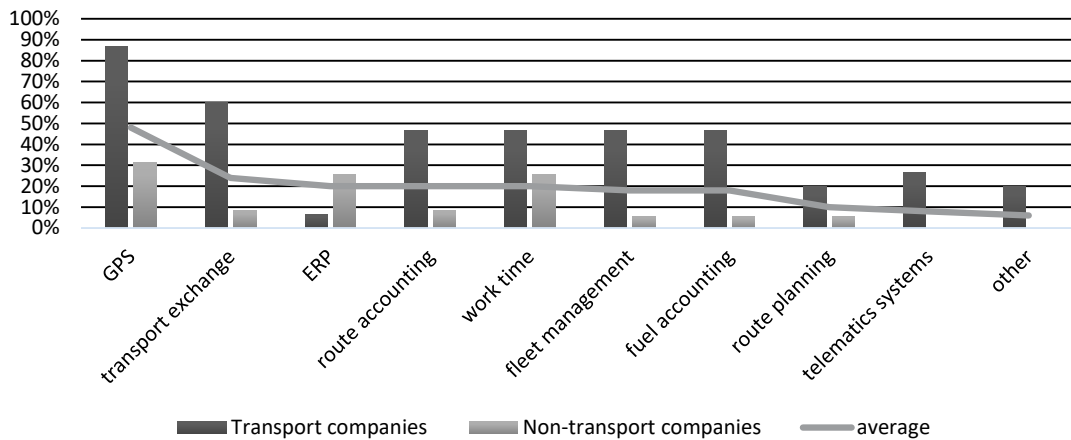


Fig. 3. Use of systems supporting transport management

Tab. 2. Use of IT solutions supporting transport management

	TRANSPORT	NON-TRANSPORT
<b>Used</b>	92%	44.9%
<b>Not used</b>	8%	55.1%

Tab. 3. Problems and challenges in the transport market

PROBLEMS	PERCENTAGE
Low rates on the transport market	56 %
Problems with documentation flow	48 %
Low demand for transport services	36 %
The lack of qualified employees	28 %
Dishonesty of drivers	28 %
Problems related to the management of vehicles and drivers	16 %
High labour costs	16 %
Improperly planned routes and transports	8 %
Compliance with drivers' working hours	8 %
Problems with the identification of cars on the route and/or the actual course of the route	8 %
Problems with matching the system to GPS in cars	0 %

results are presented in the table below. The analysis was carried out considering the division into transport and non-transport companies.

The analysis of the IT systems used by transport companies demonstrated that vehicle location systems using GPS are the most popular, followed by freight exchanges. Other systems used by transport companies control the drivers' driving and manage other work. Non-transport companies primarily use ERP systems and those using the GPS signal to control working time.

All companies use IT systems tailored to their needs. However, the management staff faces challenges that will determine their further development. The table below shows the problems and challenges identified by the respondents.

Solutions to all the presented problems can be found in transport exchanges. They provide a wide range of solutions that help manage transport more effectively. Low rates (price) and the lack of demand for transport services were among the most significant problems. This is a problem for many transport companies, associated with failure to adjust to the current market situation. Transport exchanges, apart from the very place of concluding transactions, provide a rich database of transactions and their prices. The next part of the study will analyse demand, supply and prices for transport services based on transport exchanges.

The study employs the probit model to check the dependence of transport exchanges use on the company size, its fleet, and the number of countries in which the companies provide transport services.

According to the results of the probit model developed for this study, the size of the fleet and the number of countries in which the company operates positively affects whether it uses freight exchanges. Both effects are statistically significant. Increasing the fleet to the higher class specified in the study increased the probability of implementing a freight exchange by 8.93 percentage points. Expansion to one country increased this probability by 2.02 percentage points. No statistical significance was identified for the variable describing the size of the enterprise. Thus, company size has no bearing on whether a company uses freight exchanges.

Tab. 4. Probit model — values describing the implementation of telematics systems in transport and forwarding companies

	COEFFICIENT	S. DEVIATION	P-VALUE	Z STATISTIC	MARGINAL EFFECT
const.	-2.53113	0.667225	0.0001*	-3.794	
fleet	0.355020	0.111191	0.0014*	3.193	0.0893507
countries	0.0803853	0.0364862	0.0276*	2.203	0.0202312
size	0.331879	0.292806	0.2570	1.133	0.0835264
McFadden R <sup>2</sup>					0.389097
Predicted correction					90.0 %

\* statistical significance level of  $\alpha = 0.05$

### 3.2. KNOWLEDGE AND INFORMATION IN TRANSPORT AND FORWARDING MANAGEMENT USING TRANSPORT EXCHANGES

Transport exchanges are mainly a platform for exchanging information on offers for the transport and storage of goods. In addition, it is a database of the number of transactions, demand and supply, and average fares. The two largest exchanges used on the Polish market — TimoCom and Trans.eu — were analysed. Both exchanges offered databases to their clients. They mainly present data on transport services that can be filtered by destination and period. This study analysed only data from Trans.eu transport exchanges. In addition, data are limited to the COVID-19 pandemic period, which shows the market trends. The data comes from January to May 2020, when the greatest restrictions were identified, affecting the reduction of transport to other countries. At that time, the greatest increase in cases was recorded in Italy, Spain and Germany, and access and entry of transport was limited. There was also a general decline in shipments and deliveries around the world. Statistical data from the Trans.eu platform are presented in three categories:

- demand for transport services,
- supply for transportation services,
- differences in freight and transport prices.

In addition, two types of transport have been considered, which are marked on these charts ([www.timocom.pl](http://www.timocom.pl), 20.07.2023):

- FTL (in blue in the diagrams) — full truck loads, where a truck carries one load and is, therefore, fully loaded,
- LTL (in red in the charts) — less than a truckload, bulk transport, the deadline for the partial truckload. Usually, if the truck is not fully loaded, further partial loads are consolidated to make

transportation profitable. Group loads are an alternative to the transport of partial loads.

The chart below presents data on the demand for transport services from Poland to Germany. These are transport offers from Poland to Germany, considering the demand for FTL and LTL (Fig. 4).

Based on the figure above, the demand for transport was stable. The first fluctuations were recorded on 13 March 2020, and there was a drastic increase in this type of service. Then, a decrease was seen in transport needs, directly related to the restrictions introduced by governments of analysed countries (i.e., closing borders or limiting the activity of certain industries). The situation began to improve in mid-May when a significant increase in demand for transport services was observed. Fig. 5 below provides data on the demand for departures from Poland to Italy using the same methodology.

As in the case of the demand for transport services from Poland to Germany, in the case of Italy, a decrease in the number of offers for the transport of cargo was recorded in January. There was a significant decrease in the willingness to transport goods in this direction, with the highest number of cases after China. The next two diagrams (Figs. 6 and 7) present the supply of transport services from Poland to Germany and Italy.

From mid-March, a decrease in supply could be observed in all directions. Decreases to zero mean holidays when no offers for transport services were issued. The decline in offers for transport services was a fear of entering countries with many cases detected. A decrease was seen in LTL and FTL transport.

The next two charts (Figs. 8 and 9) show the rates for wired services from Poland to Germany and Italy.

The diagrams above show price fluctuations, especially Italy-bound. The trend has been rather stable for Germany. In the case of Italy, however,

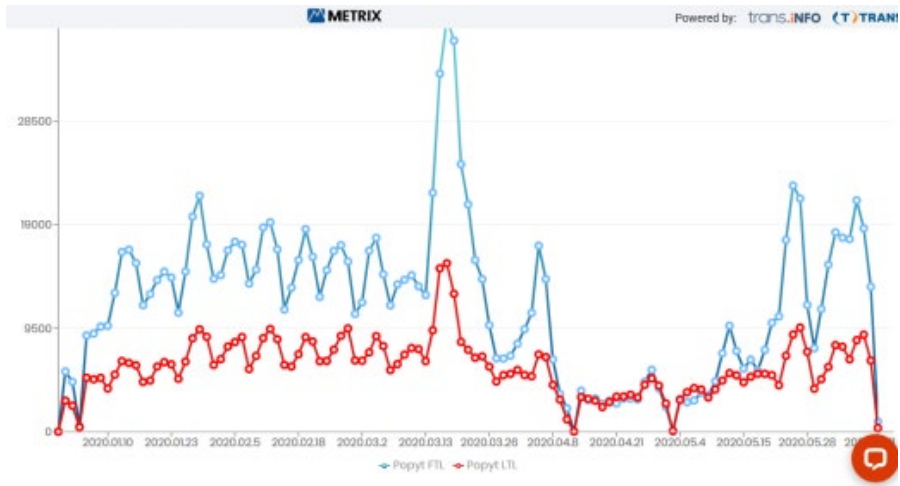


Fig. 4. Demand for transport services from Poland to Germany  
Source: Metrix.

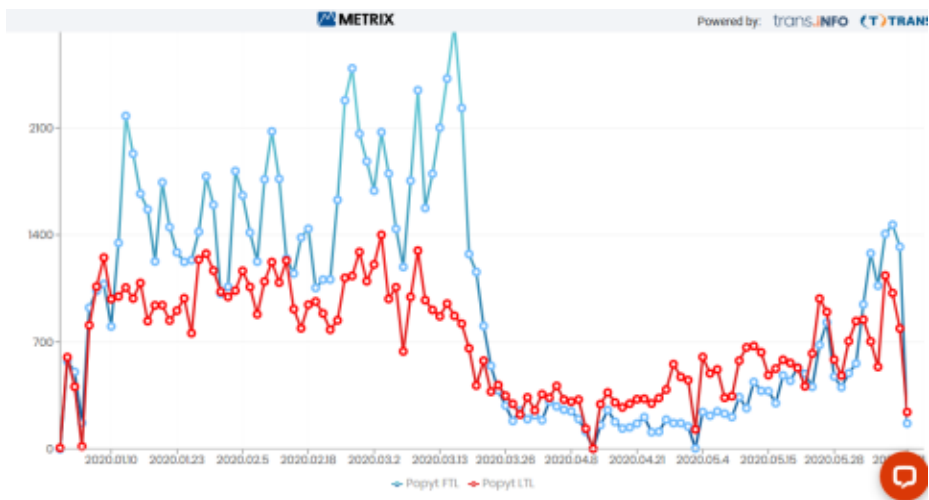


Fig. 5. Demand for transport services from Poland to Italy  
Source: Metrix.

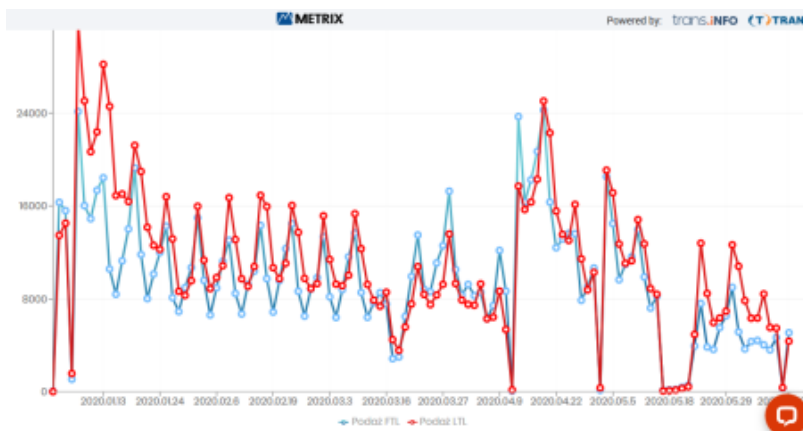


Fig. 6. Supply of transport services from Poland to Germany  
Source: Metrix.



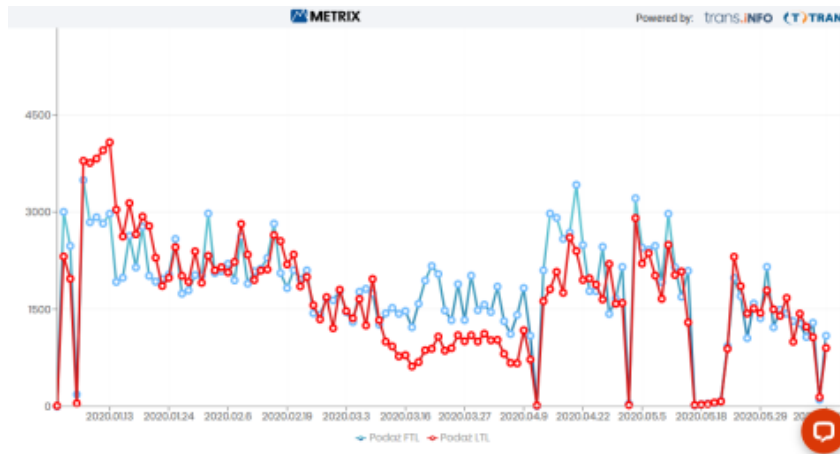


Fig. 7. Supply of transport services from Poland to Italy  
Source: Metrix.

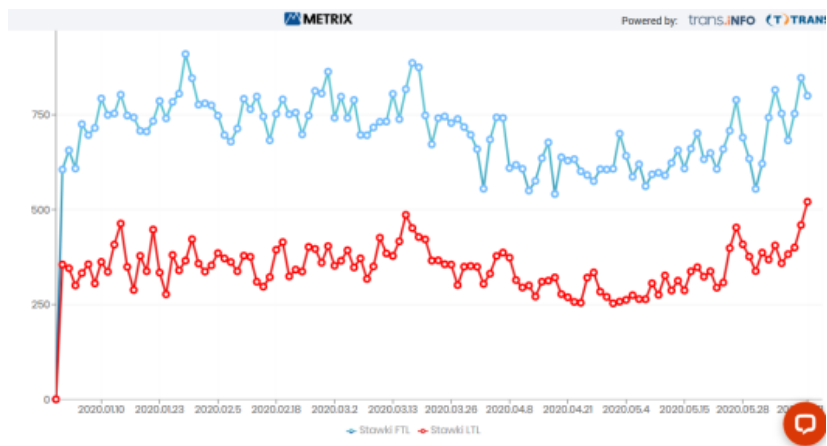


Fig. 8. Freight rates for transport services from Poland to Germany  
Source: Metrix.

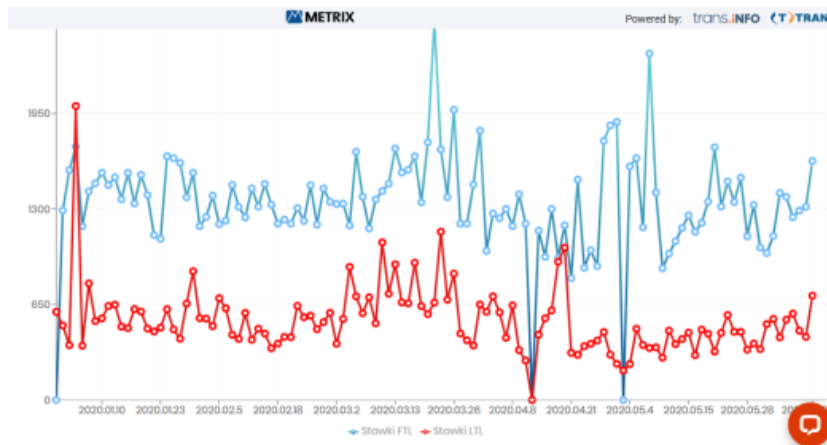


Fig. 8. Freight rates for transport services from Poland to Italy  
Source: Metrix.

prices fluctuated significantly. The diagram shows factors that disturbed price stability. The information also shows that transport travelled to the analysed countries at much higher rates.

Data on demand and supply and average prices for transport services are necessary for companies that want to adjust their capabilities to the prevailing market conditions. The above diagrams were consciously presented from the period two years ago, during the pandemic. This period is the best for showing fluctuations in the transport services market as well as the opportunities and potential of the collected data. It facilitates survival in such a turbulent environment under fluctuating economic and political conditions and flexible adaptation to the prevailing market conditions. Therefore, the analysis of data on supply, demand and price can help the management of transport companies adapt to changing conditions. Analyses may indicate a gap in the supply or the choice of other profitable transport directions. Data analysis can also contribute to establishing permanent cooperation with contractors. Unfortunately, there is still a noticeable tendency to not use this data or to be unaware of its existence. However, this is the

direction of changes in the field of IT systems in which transport managers should start analysing data on transport services on the market and flexibly manage their resources.

## 4. DISCUSSION OF THE RESULTS

Freight exchanges have a wide range of tools and instruments for transport and forwarding management. The above research shows that the industry needs them to perform various activities. The use of the tools in individual entities depends on their fleet size (number of vehicles) and the number of serviced countries. Increasing the fleet by one vehicle may result in the need to use exchanges, amounting to almost 9 %. This shows that stock exchanges are necessary for companies operating in the transport industry. Many freight exchanges exist in the world market, so they “race” to provide the best offer or enrich their program with new modules. Currently, exchanges take over many utilities from other programs dedicated to transportation. However, they are

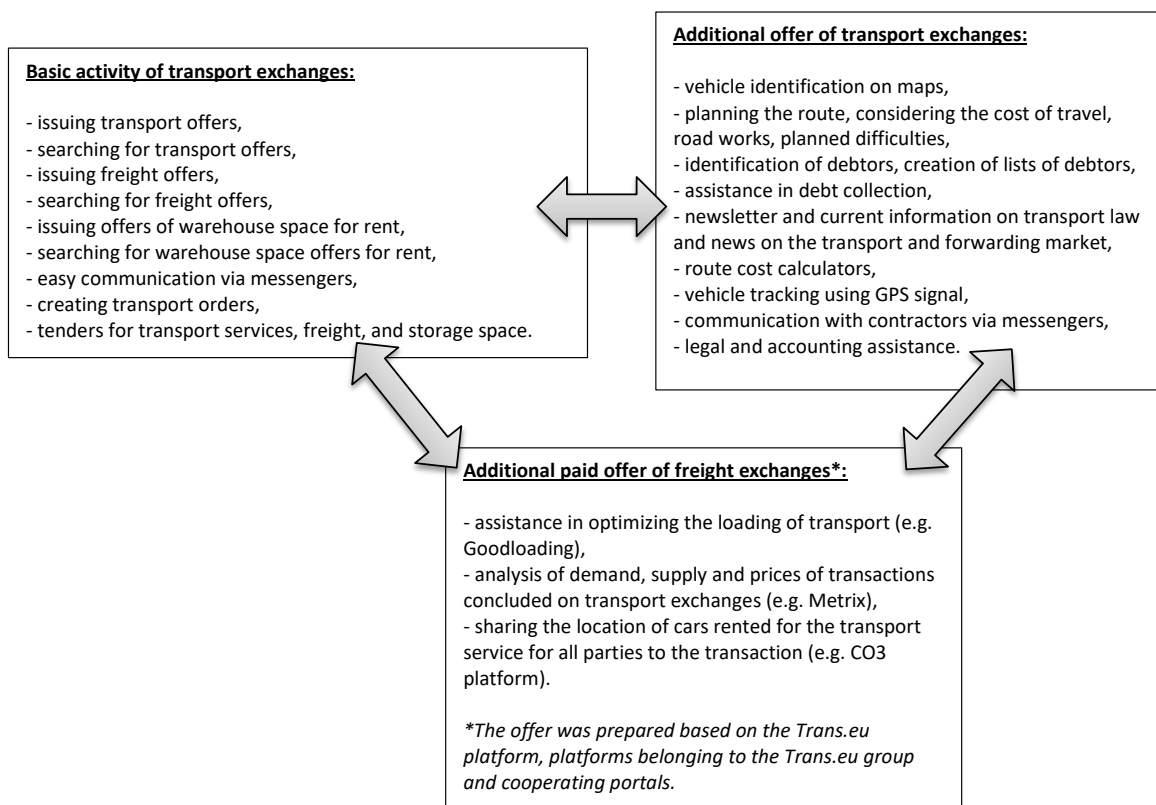


Fig. 9. Possibilities of transport exchanges

Source: elaborated by the author based on (www.timocom.pl, 20.07.2023; Trans.eu, 21.08.2023).

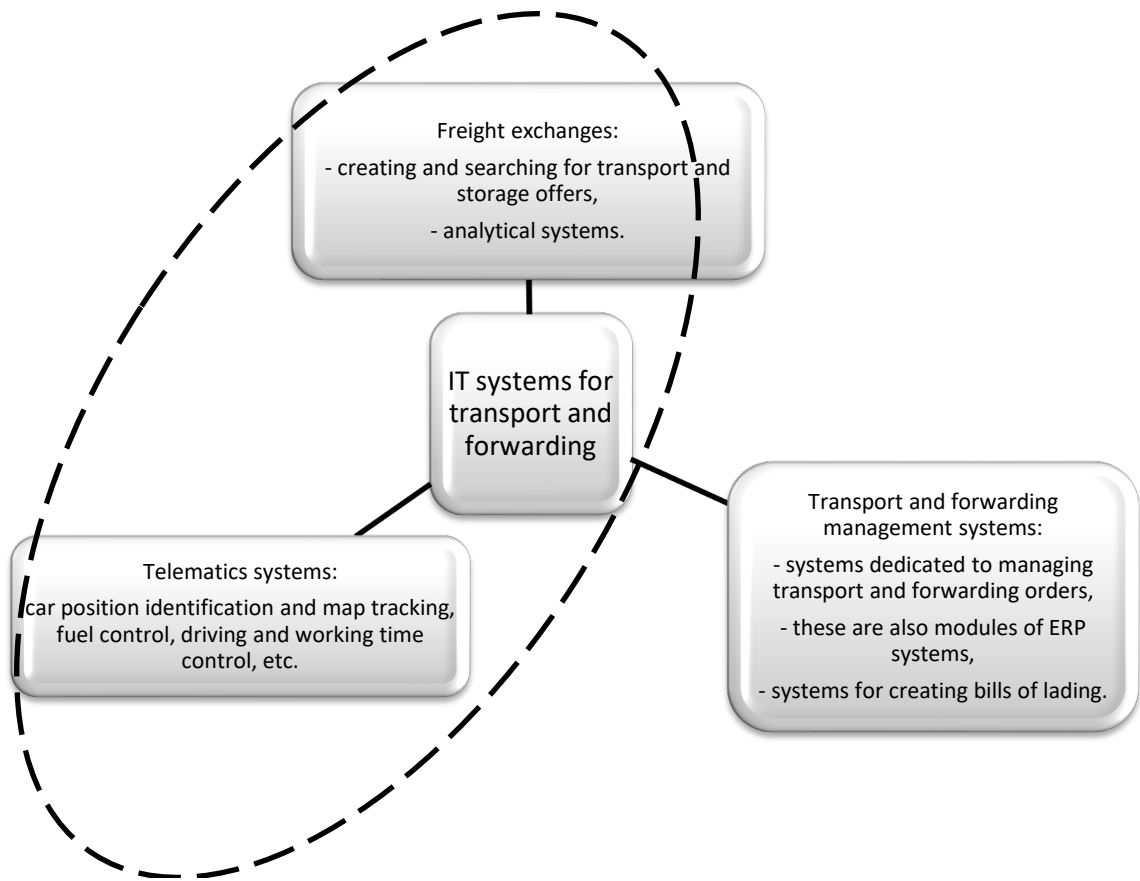


Fig. 10. Groups of information systems for transport and forwarding

not yet fully replacing these tools to become the only program used by the company. Enterprises currently need to use various types of software to obtain information and manage the transport services or their assets effectively. The diagram below (Fig. 9) shows the possibilities of operation of freight exchanges and additional modules. They have been presented using the example of the Trans.eu group, which in its offer, apart from the transport exchange, offers other programs to optimise transport services.

The presented solutions go significantly beyond the basic activity of freight exchanges. This is undoubtedly a response to changes and growing competition in the transport exchanges market. Another problem faced by transport and forwarding companies is the unification of software. Currently, new possibilities should be provided to control employees or routes, optimisation of loading, etc. This is another program that the forwarder must operate. So, as technology evolves, so does the need to engage employees who are already under a heavy workload. However, freight exchanges do not have important functions improving forwarders' work. The missing freight exchange functions are:

- management of transport orders,
- management of the transport fleet,
- management of employees-drivers (assigning routes, calculating holidays and working time, assigning vehicles, etc.),
- creating transport documentation, including contracts and bills of lading).

The following diagram (Fig. 10) presents IT systems dedicated to transport and forwarding, divided into three key groups.

Transport exchange creators introduce new modules borrowed from other IT systems aiming to improve the operation of transport and forwarding companies and strengthen their offer. They mainly borrow modules from telematics systems, such as vehicle tracking or location sharing. However, there are no modules that would support the management of transport orders and forwarding. However, the solution may be to refer to the exchanges in the transport management program and automatically redirect. The downside of the exchanges is also such modules as the one for optimising the loading area or the statistics of transport orders in separate portals, which require creating an account and another login

to a separate system. Thus, improving the operation of IT systems for transport and forwarding should begin with standardising and integrating the systems belonging to the entire group and then coordinating their operation with transport and forwarding management systems as well as telematics, where transport management systems would be superior. This is undoubtedly a problem for many transport and forwarding companies that have to use many systems and have many accounts, which is very laborious for employees jumping between systems. This also discourages using other systems, such as Metrix, which offers great opportunities to gain knowledge about the transport market. The biggest problem seems to be the lack of time and discouragement of employees from constantly using subsequent programs.

## CONCLUSIONS

The world has entered an era of digitisation, globalisation, modern technologies, and the ability to use information and data. Currently, IT systems are able to acquire and store various information. The flow of information streams is also one of the main ideas of effective supply chain management. In logistics, the need for information management can be seen in all areas. This study analyses transport and forwarding in terms of demand, supply and prices. Information on these economic parameters was obtained from transport exchanges. Although the idea of transport exchanges is to exchange information about transport and warehousing services between the parties, they have additional benefits, such as massive databases on demand, supply and prices for these services. The article presents data from the period of the COVID-19 pandemic to highlight the trends that occurred in the transport services market and show the essence of using these databases. It should be noted, however, that the two most popular transport exchanges on the Polish market, Trans.eu and TimoCom, have such databases made available to their customers.

Unfortunately, few companies currently use these databases although this is one of the solutions to respond to the unstable situation on the transport services market. These databases can support the analysis of demand and supply and flexible adjustment to the existing conditions and change of strategy, e.g., in terms of price or directions served by a company.

The article also discusses the use of IT tools for transport and forwarding. It showed the possibility of replacing a part of this software with freight exchanges and indicated the potential of this software.

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