THE ROLE OF INFORMATION SYSTEMS IN TRANSPORT LOGISTICS

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Abstract
The information can be a "good" or "phenomena" without which, the proper functioning of the company, would not be possible. In the era of today's solutions for the acquisition and transmission of information, information systems play an increasingly important role in the enterprise's processes realization. This paper presents the role of the information system, it plays in the implementation of transport processes in the enterprise.

Keywords: information, transport, enterprise, telematics, DIS

1. Introduction

Due to the versatility of this concept, the information does not have a single, uniform definition. The definition given by N. Winer, who determines the content of the information gleaned from the outside world in the process of our adjustment to it and adapt it to our senses (McGarry M., 2008).

Z. Messner defines information as data on economic phenomena and processes used in decision-making processes (Messner Z., 1991). And the information in the sense of things, is a product resulting from a process, it has a manufacturer (source of information) and the recipient, as the product, it may be subjected to operations such as transmission, processing, storage, exchange, purchase or sale (Lis T., Lapeta J., Nowak S., 2005).

Very often information is confused with the data, even in dictionary of polish language, definition describes information as data processed by a computer, and the concept of data is the term "information processed by the computer." It is misleading because, according to the concept,

presented by Sharma, the data are the first step in the pyramid of information DIKW Hierarchy (D – Data, I – information, K – Knowledge, W – Wisdom) (Sharma, 2005).

As follows from the presented pyramids, data are streams, that are being converted into information, through information we obtain knowledge, which translates into our wisdom and understanding.

In modern times and the realities of the market economy, information is considered as increasingly being as the one of the most important factors in the proper management and operation of the company (Dima, Skowron, Modrak & Grabara, 2010). At the same time, in contrast to the past, present progress and technological development allows for almost continuous acquisition of information, its rapid transmission and reception, but also causes the phenomenon of information "flood" . Currently, the role of the information, that it performs not only in the company but also in its environment, and its impact on business operations, causes that it to be a kind of company's nervous system, entwining their network all departments, divisions, subsidiaries, affiliates or employees (Dima & Vladuţescu, 2012). Without access to information, the company could not function properly in the market, what is more, without information, probably would not even arose. With the information coming from the environment, the company gains the knowledge about what society or the market needs, thanks to information company knows how to design and plan the actions or processes, and finally, the company has the knowledge of how to reach recipients of their services or products. This "nervous system" allows the company arise, act and continue to grow.

2. The essence of transport logistics

Effective operations of enterprises in almost every sector of the economy requires a well-functioning transport. The presented definition clearly ex(plain what transport is: "transport is a set of activities related to the movement of people and material goods by appropriate means. It plays a very important role in logistics, because of the goods movement of and the creation of ancillary services. Transport in the national economy enables the exchange of goods and services. Transport raw materials and semi-finished products for production (in industry, construction, etc.) and finished products for personal consumption" (Praca zbiorowa, 2008).

The primary function of it is transport, which covers the period in which the charge remains at the center of transport, traffic and during parking. Additional activities are held in the transport collection point: loading, unloading and storage of short-term or long-term loads. The transport along with the movement also includes additional services such as logistics, freight forwarding, control etc. These services are related to the organization and management of the processes of movement, so are services that are intangible (Neider, 2006).

Transport management is the most important logistics thing. Costs associated with transport are is often more than one-fourth of the overall logistics costs (Kisperska-Moroń & Krzyżaniak, 2009). Transport managers in the company are responsible for the decisions, whether to use own transport or external, in particular, are responsible for the choice of a particular carrier and the specific route of transporting cargo. The employee needs to know the cost of transport, the

applicable rules of law in terms of rules and regulations concerning the transportation, and also have the ability to manage human and financial resources. Managers should have regard to the objectives of logistics and general business (Dima, Man & Vlăduţescu, 2012). The essence of it, is such an organization of transport, which can increase production and sales. Management determines the choice of the branch, type and method of transport. The choice of a particular transport mode depends on the physical parameters of load (width, height, length). Weight load will decide about the selection of vehicles carrying capacity. Transport should be characterized by reliability - loads should not get either too late or too early. An important feature is the speed of the carriage. In particular, the realization of late orders, transport of live organisms or documents. For the transport manager is also important the ability to control and monitor the traffic, this applies particularly to shipments of high value (Rydzkowski, 2005).

The choice of transport mode or cargo carriage is only the first step, the next is an order specifying the type of cargo and its quantity, detailed definition of the term, type of transport, or special requirements. Another area of activity is the preparation of shipping documentation (the most important is the waybill and invoice for transport). Waybill is a document of the contract between the consignor and the carrier, determines the conditions and form of transport service.

In the past, the former economic system, transport management in the enterprise was treated very marginally caused by lack of competition. Currently, at the market are lot of competing firms producing similar goods, as well as companies engaged in the carriage of the goods, which led to the fact that companies try to invent newer and newer technologies, marketing tricks or techniques types of traffic (Dima & Man, 2013; Vlăduţescu, 2013).

In summary, it can be concluded that developing under the influence of transportation puts the national economy, prior to transport increasing challenges. They arise from the increasing integration of cooperative production. However, not meeting these requirements may result that transport will be limiting economic development in the future. This relationship is very important, because it has an impact on the future life of society. We should therefore seek to develop, both the national economy as well as to the development of transport and its components.

3. Information system in transport

As has been mentioned already, the information forms the “nervous system” encircles a specific company, while connecting it with the environment. The nervous system is most commonly referred to as the information system, at present, is an essential element in any operating company (BTRE, 2001). Information are related with all processes occurring within a single enterprise. Unless you can determine where the process begins or ends, in the case of an information system, it does not have neither beginning nor end (Vlăduţescu & Ciupercă, 2013). The steps of each process can be quite easy to distinguish, at least because of course, type and nature of the information that they acquire or generate. In contrast, information system acquires any kind of information as well as generate information addressed to all processes in the company. And that is what most reflects the character of the information system as a neural network girdling the enterprise.

At the beginning, in order to realize the transport process, the following information were necessary:

- Information on the selection of mode of transport (road, rail, sea or air),
- Information about loads (size, type, quantity, weight, height),
- Information about senders and recipients (name, organization name, address),
- Start and end time (the date of dispatch of the cargo and the date of receipt of the load),

And one should bear in mind, that before the transport process was focused on turnaround time (the shorter the better) (Siminică & Traistaru, 2013). Currently, the transport process must also satisfy the quality requirements of the services provided (the form of its execution has the same level of importance as the time of delivery).

This result, that in order to improve transport processes, many technologies in the preparation and transmission of information have been created. To ran the transport process smoothly, companies are increasingly using modern tools of information systems. This need led to the creation of "telematics", a term which is a combination of two words: "telecommunications" and "information technology", and in accordance with the definition given by the New Encyclopedia of Universal means telecommunications department dealing with the transfer, exchange or dissemination of information in the form of immovable property picture of alphanumeric text, logos, writing, drawings or photographs. (Kot, 2008) Telematics also means telecommunications solutions, computer and information and automatic control solutions used to meet the needs of supported physical systems - resulting from their jobs, infrastructure, organization, processes, maintenance and management - and integrated with those systems (Wydro, 2005; Smarandache & Vlăduţescu, 2014). In common usage telematics means devices and systems collecting data for the transmission of their distance using telematics and transform them into information for the final user (Müller, 2003; Traistaru, 2013).

Generally, telematics solutions can be divided in several criteria (Budzik & Zacharski, 2012):

- The ability to scale the system - simple devices and the software does not have any or have only limited possibilities to expand the scope of the data received,
- The scope of information collected - closed systems offer only the information from its own sensors such as GPS position, open systems allow for communication and information transfer systems trucks, and additional sensors,
- Interactivity - information transmitted from the vehicle to the control panel or the other way, interactivity has advantages from the point of view of the vehicle features and better contact with the driver,
- Other features - additional features such as music player, photo viewer and video, and other multimedia are built in to inventive drivers,
- Continuous transmission of information - from a single to continuous communication with the vehicle,
- Hardware and software - operating systems, working only on providers' platforms and those that can be installed on laptops or tablets,
- The possibility and scope of the data export for further information systems in the enterprise,

- The scope of processing the collected data - from systems that offer only the representation of the data by statistical comparison to systems that offer a comparison of the data with folded parameters such as lowering the vehicle assumed a geographical area

- Installation of central server of the transport company or access to data through the system via Internet - for systems, with access to data via the Internet, time of store data on servers plays an important role.

Most primary criterion when choosing a telematics system for the company is return on investment. Due to rising fuel prices, increased interest in the possibilities of savings towards this issue. (Ślusarczyk, 2010). Telematic systems with access to data from the vehicle computer allow for analysis of driving style, the degree of use of the engine torque by using the run thus ensuring the operation of the engine in the optimum rev range, avoiding rapid acceleration and excessive speed.

4. Conclusion

In addition to telematics, there are a number of more or less advanced information technologies, used in transport processes in the enterprise:

- Detectors or sensors, make possible to remote measurements of the state of means of transport,

- Systems of terrestrial and satellite communications enable the transmission of information over long distances,

- Electronic and wireless technology enables the exchange of information between vehicle and external devices,

- Databases and data warehouses make possible to store information, as well as their rapid processing,

- Recently used information systems also allow to send and receive information in real time.

In addition to the wide range of possibilities, information systems used in the processes of transport can bring tangible benefits in the form of:

- Increase transport efficiency,

- Better financial results,

- More efficient coordination in the exchange of information,

- Optimal use of transport and improving the quality of transport,

- The possibility of remote monitoring conditions along the route,

- A decrease in the percentage of so-called. incorrect deliveries (deliveries delayed or mistakenly shipped products)

- Less use of drivers,

- Optimize the timetable and plans of drivers,

- Adaptation of trips to the requirements of customers without incurring additional costs,

It can be assumed that in the field of information systems for transport, over the years, they will be still developing and their capabilities increase, improve their functionality and increase the number of offered tools and applications. Along with the continuous development of society, markets and companies will also develop. This will mean that with the advent of new requirements

or changes in current, as information systems will evolve in order to continuously improve the transport processes. It can be hypothesized that the development will also determine the development of transport processes in enterprises, since, as without information systems and the opportunities they offer, the company currently is not able to implement transport processes, in accordance with the requirements of today's economic markets.

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