

LOGISTICS SERVICE QUALITY AND LIVING AND WORKING ENVIRONMENT

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Abstract

Logistics networks that make up various manufacturing, trade, service, transport and shipping companies, logistics operators and providers, logistics centers, working terminals, distribution and storage systems have in their structure logistics services on whose quality depends the level of meeting users' requirements. For an effective improvement of the quality of those services, it is necessary to perform the structuring of activities. From the social aspect, the quality of logistics service needs to meet three essential functions: environmental protection, protection of life and health of the people and protection of service users and product consumers. If the logistics market is won by the service quality with respecting essential functions of environmental protection, protection of life and health and protection of service users, it becomes a significant assumption of a long-term market survival of the company.

In order for today's company to be successful in their business, they primarily need to identify the interest of organization and interest parties. The company aims to adjust basic management system to the requirements of a particular standard and principles of integrated management system (IMS). Logistics services themselves are directly and indirectly linked to the environmental protection, ensuring safety at work. By system integration, we can significantly influence the increase of the quality of logistics service within a company.

The aim of this research paper is to point out certain specificities of the entities and processes in logistics activities of services, upon which the quality of the process in logistics network depends, as well as the dependence of the problems of ecology and living environment, the state and capacity of the transportation infrastructure, transport regulation, technological progress and development.

Key words: logistics service quality, logistics service features, integrated management system (IMS).

INTRODUCTION

Logistics service quality comes from the quality of performing logistics processes and the quality of logistics systems functioning. When the logistics systems are functionally capable and when the processes are well done, without flaws, weaknesses, mistakes and setbacks, at a high organizational and technological level, then the service quality is satisfactory as well.

Logistics process can be defined as a set of interrelated and regulated activities that receive the inputs and convert into outputs. Logistics processes are mostly related to the movement and stillness of material goods and resources. The logistics itself is a result of a series of synchronized and harmonized processes linked in a logistics chain. The quality of service depends on the quality of logistics processes and activities. Logistics processes are performed at various levels, ranging from global processes in logistics networks and supply chains, to the elementary

operations and activities in micro logistics systems.

Consideration of process quality in the network represents a macro level of observation and it is based on defining and analysis of the global performances of quality. Namely, today the economic and market integrations are taking place through global business and logistics networks that integrate different structure of entities, connections and processes. In that way, for example, logistics networks regularly consist of: various manufacturing, trade, service, transport and shipping companies; logistics operators and providers; logistics centers; freight terminals; distribution, storage and reload systems; telematic systems etc. Between and within the mentioned entities, there are very complex logistics and business processes taking place, from whose quality directly depends the efficiency of logistics flows and the level of meeting users' requirements. One entity can basically be found in different logistics

networks at the same time, i.e. one company can have more different logistics networks through which it realizes the supply and delivery of goods. Entities, processes and connections in the networks have their specificities, different requirements, interests, objectives and business strategies. They are usually spatially displaced in various regions, states and continents. All this clearly indicates the potential conflict situations, extreme complexity when managing the quality of business and logistics processes and activities. In order to successfully meet the complex requirements and tasks of the economy and market, the logistics systems apply various conceptions and strategies of managing logistics chains and processes. Depending on the adopted strategy, the logistics systems develop: different structure of functions, tasks and objectives; different management and marketing concepts and different value and knowledge systems. The structure and quality of the processes in logistics network are greatly influenced by the factors such as: continuous expansion of the global economy and business; issue of ecology and environmental protection; state and capacity of transport infrastructure; transport regulations; technological progress and development; consumer society etc. For an effective determination and improvement of the quality of processes in logistics network, it is necessary to perform decomposition and structuring of the very processes and activities [5].

LOGISTICS SERVICES AND LIVING AND WORKING ENVIRONMENT

From social aspect, quality in logistics needs to satisfy three essential functions [6]:

- Environmental protection against: the air pollution, water pollution, noise and dust, solid waste etc.
- People's health protection against: poor working conditions, health and life danger, bad working environment etc.
- Protection of users and consumers against: abuse, unprofessional, uncultured, immoral actions, etc.

Environmental protection is one of the most significant and the most frequent topics of modern society and it attracts wide attention

of all the developed countries, in all the fields of development and prosperity. This issue is particularly expressed in the field of traffic and transport as significant sources of environmental pollution, both in the aspect of gas emissions, as well as in the aspect of noise. Caring about the environmental protection implies the use of logistics technologies and technological and transportation means that: do not pollute air and water; do not make noise and dust; do not block the traffic; do not spend sparse natural energy sources; do not create solid waste etc. (*Green Logistics*). It is known that the issue of environmental pollution caused by transport cannot be completely eliminated, but by introducing ecological standards and regulations, it is possible to significantly reduce negative consequences of transport and other logistics processes on living environment.

By establishing the open unique international and global markets, administrative and customs barriers are replaced by quality barriers. In that way, in European Union, there are significant constraints in providing logistics services, which refer to environmental protection, safety, transport security etc. Package and material for packaging of the products, which are frequently used due to cost-effectiveness, can very negatively influence the living environment. When they are discarded, they take a lot of time to decompose. When providing logistics services, the logistics companies very frequently face the conflicting requirements of service users and environment. Buyers of the products, i.e. service users are not ready for certain change and higher prices at the expense of environmental protection, despite the benefits that they will have, but they are primarily interested in meeting their logistics requirements. Challenge for a logistics manager is how to satisfy the users and lessen the negative impacts on the environment at the same time.

Quality of logistics service implies the protection of health and life of the employees, directly or indirectly engaged in realization of logistics processes and activities. It is necessary to apply technical, technological and organizational solutions that minimize the

dangers and harmful effect on the life and health of the people. Negative impacts, which can be caused by: particular properties of goods or inadequate procedures of handling, transport, storage, packaging etc; working conditions and safety of logistics processes, represent a significant factor of choosing particular logistics strategy and technology. Particular logistics processes, such as transport, reload and storage, are followed by significant risks in the aspect of: injuries, health and life threats to employees, environmental and safety threats of the working environment, fire, explosions and other dangers. As the employees, and especially the users, are not always familiar with the dangers and all the consequences that may arise when providing logistics services, it is necessary to determine the measures and manner of protection by certain standards, regulations and legal regulations. It is necessary to adequately emphasize particular instructions and warnings linked to logistics processes and service providing and to improve the quality in logistics in this way.

Apart from the above-mentioned, the quality also implies the ethics of the working environment, which is reflected through: high moral, respect for the employees, mutual trust, work pride, motivation, consistency, honesty, professionalism etc. Logistics activities have to be performed without pressuring the employees, frequent firing from work and threats, cynicism and other negative impacts on the working ability and commitment of the labor.

Quality of logistics service is also directly linked with the relation towards service user, i.e. consumer of material goods. The user, through logistics requirements, tends to express all the important determinants of logistics service quality. However, due to the lack of knowledge, experience and informing, it can occur that he does not precisely define all the requirements or to be deceived, manipulated and misled. Logistics service quality also implies the protection of user in respect of the rights to: security, information, complaint, response and compensation. Quality does not imply that only the requirements and desires of the users are fulfilled, but also that the interests are

protected. The user should also be protected against: possible abuse of market power or monopolistic behavior of service providers, adverse contractual clauses and parity of delivery, transfer of costs, liabilities and risks in commodity flows. A particular example of poor quality may be a fraud (deception) and misuse of economic promotion and promotional activities of the provider. The user needs to have a right to response („user's voice“), through appeals and complaints and, of course, a right to compensation for damages suffered, justified complaints and unsatisfactory service.

Logistics service provider has to be a socially responsible entity that respects ethical, moral, cultural, religious and social norms and thus acquire a positive social and economic image. Actually, it is necessary to respect the golden ethical rule – which says: “act in the same way you expect that the others will treat you“. Social responsibility and profit are complementary. In developed economies and regulated markets, the high-profit companies are simultaneously the most responsible companies in the social aspect. This can be explained by a simple fact: if the confidence of users is obtained through responsibility, i.e. if logistics services are provided in compliance with logistics requirements, social and other norms, then the long-term profit growth is guaranteed.

QUALITY AND LOGISTICS SERVICE FEATURES

Logistics service quality is a crucial tool for meeting market requirements and expectations. It can be said that logistics service quality begins and ends in the market. The user firstly defines the quality logistics requirements, and then, when using the services, he evaluates and assesses the level of their quality. On the level of meeting user's requirements and expectations, the market success of logistics service providers depends. Quality is a tool for winning new and keeping the existing markets and users. Quality is the strongest „weapon“ in free and open market. The majority of authors point out that the market is not won anymore by low prices but „high“ quality. If the logistics market is won by the quality of service, it is the only

significant assumption of long-term company's survival. The prices and deadlines for the realization of logistics services are largely the subject of agreement between users and providers, but service quality frequently cannot be the subject of agreement. For a particular service, it can be said that the quality exists or does not exist, i.e. that it satisfies or does not satisfy the requirements and expectations of users. Unlike material products, whose quality was constantly improved in the past, logistics services were not paid the necessary attention. That especially refers to our economy, where the quality of logistics services is significantly lagging behind the quality of material products. However, it is necessary to have in mind that material product and delivery of that product are an integral value for the buyer and end user. At the time when material products are more similar according to their design and quality, the logistics service quality becomes a key factor of market competitiveness of various products. Difference between more offers of material and service products, the buyers and consumers often make precisely on the basis of the quality of delivery service. Logistics services are directly linked to the realization and transformation of commodity, transport and information flows. It can be said that logistics service represents a product of various logistics systems focused on shipping and delivery of material products, according to the concept „7P“ [10]. The right goods; Right place; Right amount; Right situation; Right packaging; Acceptable costs – prices. The user requires and expects a complete logistics service (by the system „door to door“, Full service packet). That is the result of all the individual services in logistics chain, ranging from the services of packaging and labeling the goods, formation and dissolution of the cargo units, storage, inventory, reloading, transport, servicing of transport vehicles and personnel, information, to the advisory, administrative, marketing and research-designing services.

Each service, including logistics service, can (must) be considered from the aspect of the user and the aspect of provider (logistics system, carrier, and administrator).

The users link the logistics service to the shipping and delivery of material products to a certain place at a certain time and under certain conditions. In that case, two typical situations can be distinguished. The first situation is when the user views the material product and logistics service as a unique offer (material product + logistics service = integral value for the user). When making decision on purchasing material products, the user together (inseparably) evaluates the material product and logistics service linked to the delivery of that product. It means that the final decision is based on the characteristics of material and logistics product. The second situation is when the user views the logistics service as a service product of the logistics system, separately from the material product. The decision on buying and using the service is made primarily on the basis of the character of logistics offer. The first situation is characteristic when buying material products, while the second situation is more frequently encountered in the phase of selling and placing the products [11]. *For logistics systems*, the logistics service is a product and a means of gaining revenue and profit in the market. Profit of logistics services can be acquired only through meeting and satisfying the requirements of users, i.e. if an efficient flow of material products from the place of offer (sender, deliverer) to the place of use (recipient, consumer) is provided. Logistics service, as a product, is characterized by a series of special features by which it is significantly distinguished from the material and the other service products as well. Those are the features linked to: intangibility, transience, simultaneity of production and consumption, impossibility of standardization, absence of ownership etc (see Table 1). Mentioned specificities significantly influence the measurement, monitoring and improving the quality of logistics services.

Table 1: Specific features of logistics services [6]

Specific features	Description
Intangibility	- Intangibility („inviolability“), i.e. the absence of the material character in case of logistics services causes certain problems both for the user and the logistics system. The user of services has difficulties linked to the perception and measurement of the quality of realized and offered services, and logistics system has a problem to represent and promote the quality of its services.
Transience	- Logistics services cannot be produced in advance and „stored“ in order to alleviate the deviation and variation of the requirements, as it is the case with material products. Logistics requirements are of transient character and unless an appropriate structure and service quality are offered and provided at the time of the requirement, that service is „lost“.
Simultaneity of production and consumption	- Production process of logistics services is inseparable from the process of use (consumption). Interaction between the carrier and user of services is of essential importance for the formation of user's satisfaction. Logistics system has to cooperate „closely“ with the users in all the phases of implementation of logistics services.
Impossibility of standardization	- High degree of heterogeneity of services in logistics mostly complicates the process of standardization, determination and monitoring of quality. For those reasons, the users are forming the expectations and perceptions, in the aspect of service quality, on the basis of the standardized elements of a logistics system.
Absence of ownership	- Unlike the material products, where the buyer after buying becomes the owner of the product, in case of service products, the users have only a right to use the service in a limited period.

NEEDS OF INTEGRATING LOGISTICS SERVICES IN MANAGEMENT OF THE COMPANIES

In order for today's companies to be successful in their business, they primarily need to identify the essential interest of the organization. One of the main tasks and interests is that all of its stakeholders are satisfied with what the company provides, i.e. with the fields that are the subject of their interest. However, it seems reasonable to ask the question: who are usually the stakeholders and what is the subject of their interest? Most certainly, those are [12]:

- The users, who are interested in a complete satisfaction of their requirements and expectations and that the products and services do not endanger their health and safety in any case. If the organization satisfies the requirements of the standard ISO 9001:2000 and HACCP, the users can expect for their requirements to be fulfilled;

- Employees, whose interest can be observed through motivation for performing daily tasks, improvement of one's own work and commitment to the organization. The requirements of the employees are realized through a good internal communication,

corresponding earnings, training and advancement, working conditions, safety and health etc. These requirements can be fulfilled only if the organization introduces: quality management system (according to ISO 9001:2000 Occupational Health and Safety Management System (according to OHSAS 18001), financial management etc.

- The owners, who are interested in gaining profit, growth and development of the company and constant capital increase. It is certain that the owner are, in normal circumstances, also interested in the commitment of the employees, as well as the fulfillment of legal and social norms and standards;

- Social community, which, basically, has the interest for the success of the organization, but also for those segments of its business that can satisfy or endanger the interests of society and individuals. The society pays a special attention to the ecology, food safety, safe use of the products, financial indicators of business, etc. The company expresses the protection of its interests by legal regulations.

- Suppliers, who are interested in the operations of organization and its stability. Their interest is that the organization satisfies the requirements of all previously interested parties because it is a guarantee for the realization of their interests.

Each interested party requires only particular management systems. Thus, for example, the users are directly interested in QMS and HACCP, the employees in OHSAS, and the social community in EMS. The company tends to adapt the basic (existing) management system as simple as possible and to adjust it to the requirements of certain standards. The observed interests of various interested parties can frequently be conflicted. In order for them to be fulfilled simultaneously, in a way that will guarantee a right for everyone to accomplish their interests and expectations, it is necessary to fit all of that into a unique business system of organization. That task is most easily done if all the necessary management systems are integrated into one unique integrated management system (IMS).

Introduction of integrated management systems requires many changes in the company, starting from the changes in processes and procedures to the change in the entire business philosophy and overall culture of organization. Integration of the management system is a rational and natural way, which formally satisfies various standards and simultaneously raises the level of organization's ability and its approaching to the goals of excellence.

The principles of establishing IMS are completely compatible with basic logistics principles. Logistics is, as a scientific discipline and business philosophy, precisely based on integration, comprehensive observation of all the relevant subsystems and entities.

Observing the performance of the logistics processes and their mutual dependence, it can be concluded that the implementation of IMS in logistics will lead up to significant progress. The very logistics activities are frequently directly or indirectly linked to the environmental protection, ensuring safety at work (frequent injuries of the workers in storages, reloading terminals, traffic accidents during the transport of goods, etc), but also the satisfaction of the regulations that refer to provision of the healthy food, which must not lose its characteristics during the realization of logistics processes. By the integration of the systems, we can significantly influence the increase of the quality of entire logistics activities within the companies.

The first question that imposes itself is: What should be integrated? Absolutely everything that influences the business results must be a part of a management system. For that reason, IMS should integrate all the formalized and informal systems that are focused on the quality, health, safety, environment, personnel, finances, security etc. Integrated management system most frequently includes [9]:

- QMS –Quality Management System, according to the standard ISO 9001:2000;

- EMS – Environmental Management System, according to the standard ISO 14001 : 1996 ;

- OH&SMS - Occupational Health and Safety Management System, according to the standard OHSAS 18001 :1999;

- FMS – Food Management System and HACCP - Hazard Analysis Critical Control Points, according to the standard ISO 22000 : 2005;

- CSRMS – Corporate Social Responsibility Management System, according to the standard SA 8000 : 2001;

- ISMS – Information Security Management Systems, according to the standard ISO 27002;

- ITSM – Information Technology Management Systems, according to the standard ISO 20000;

- DMS – Dependability Management System, according to the standard IEC 60300.

Quality management system (compliant with ISO 9001) cannot be observed as a separate and isolated whole. It is obvious that this system is closely related to the systems for: food management system (compliant with ISO 22000:2005), environmental management system (compliant with ISO 14001) and occupational health and safety management system (compliant with OHSAS 18001).

By the environmental management system, we accomplish to provide a constant monitoring of the influence of the working process on the environment. The system implies preventive reaction to the accidental situations, by which the undesired impacts on the environment are prevented with high probability, but also, the safety at work is provided. By implementing this system, the company demonstrates its seriousness and tends to keep and improve its market position. The fulfillment of these standards is a proof of satisfying the interests of a wider social community, which is a significant comparative advantage in development and operations of a company. This management system is focused on: products, processes, waste, emission of harmful materials and other undesired effects. It is the precondition for gaining the confidence in the ability of organization to satisfy the needs, expectations and requirements of the society and other relevant

interested parties. ISO 14001 requires that the organizations formulate the policy towards living environment and goals related to the living environment.

Occupational health and safety management system is very compatible with quality management system, to which a particular number of management elements, which are completely or partially common, points out. Those elements are: health policy and safety of the employees; managing the documentation and records; review by the management; resources; tasks; responsibilities and authorizations; monitoring and measuring of performance; evaluating the compliance (internal audit); managing the inconsistencies; corrective and preventive measures. Implementation of OHSAS 18001 requirements implies the change of the existing and development of a certain number of new documents, as well as the system check and certification. Improvement is reflected in the fact that the organization, by integrating the requirements of the standard OHSAS 18001 in management system, clearly declares the management's concern about the safety and health of the employees. In that way, it indicates to its users that it takes care of the employees, by which it contribute to the stability of its business. At the same time, it strengthens the confidence of users that it will not, by its concern about employees, come into conflict with the legislator (state) because OHSAS 18001 relies on legislation and commits its respect. By introducing the system, the company provides a positive example for the other entities in social community, by which the interest of the state as an interested party is realized. Preventing the undesired accidents at work enhances the stability in the functioning of the working processes and achieves the desired quality of products/services.

Integrated systems represent „system of the system“ in which individual systems lose independence, while maintain identity. All of this can be illustrated with the following fact: management for a satisfactory eco quality of the products offered is equally a part of quality management, as it is a part of environmental management. The same situation is when we speak about occupational health and safety

management, because the characteristics of safety and healthy working environment are at the same time the characteristics of quality. The connections between quality, living environment and safety are extremely numerous and important, even to such an extent that it is difficult to distinguish them in many cases.

CONCLUSION

The quality in logistics is a complex and multidimensional term that needs to be observed from various aspects:

- User and logistics markets require a complete and quality logistics service,
- Complete logistics service is a set of interdependent partial services. Production, providing logistics services are realized through a regulated series of processes and activities,
- In production/ providing logistics services, a larger number of logistics systems and service carriers take part. Processes of production/service providing are realized in different markets and market environments.

Three typical fields of quality in logistics are:

- Quality of logistics service that refers to meeting the requirements and expectations of the users,
- Quality of logistics processes and systems,
- Quality of living and working environment, i.e. social aspect of quality.

Establishing IMS is completely compatible with basic logistics principles. The very logistics activities are directly and indirectly linked to the environmental protection, providing safety at work, but also satisfying the regulations that refer to logistics services

and their quality. For this reason, IMS should integrate all logistics systems that are focused on the quality, environment, safety, personnel. By introducing this system, the company demonstrates its seriousness in preservation and improvement of its market position.

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