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QUALITY DEFINITION OF LOGISTIC SERVICE

Abstract: *The logistic service has to satisfy the increasing demands of the users, by being attractive, speedy, safe and the generally quality. In that sense, the main goal of this paper is to contribute to defining the logistic services as a complex phenomenon influenced by many circumstances and particularities of the market. This paper defining the theoretical quality guidelines of logistic services, as well as the basis for the definition, assurance and management of the transport service quality. A special analysis is carried out of the criteria and specific demands of the logistic service users, since the definition of the basic prerequisite conditions and goals for effecting an increasing quality and competitive level of the logistic services are directly conditioned by these criteria.*
Keywords: *quality, logistic service, criteria.*

1. INTRODUCTION

Market of logistic services becomes more demanding and open competition from organizers and perpetrators of logistic services request retention of defined quality with the intention of improving. That is a reason why definition of quality transportation logistic services is considered like a basic prerequisite of competitiveness. In accordance with a defined problem in research in this paper, related to the quality of transport logistic services, appointed the basic hypothesis, which states: success in the market of logistic services can only be achieved by ensuring lasting quality, which should assurance the minimum level of services offered by competitors and participants in the creation of logistic services.

In the paper analyzed in detail the concept and meaning of the observed quality of service, standardized ISO base as a framework for defining, assurance and management of the quality of transportation logistic services. Special emphasis gives to the expectations of service users, as only filling out the application and possible exceeding users' expectations can yield positive results, and implement high quality, and thus the competitiveness of transport logistic services.

2. THEORETICAL DETERMINANTS FOR QUALITY OF TRANSPORT AND LOGISTIC SERVICE

To fortify importance of service quality for the route to competitiveness and define basic concepts of the qualitative criteria by which it is possible to analyze the "value of service" on certain traffic routes in relation to alternative routes, the following paragraphs define the term and the possible aspects of defining quality, the concept of quality of transportation logistic services and quality grades.

2.1 The quality concept of transport and logistic services

In accordance with the definitions of terms transport and trade, these terms can be defined separately as follows:

• "quality of transport services" is the totality of the performance characteristics of the transport infrastructure, superstructure and traffic conditions of transport of goods (goods, material goods), people and energy of which depends on their ability to meet the explicit or the expected (assumed) requirements and customer needs,

• "quality of transport services" is the totality of features characteristic of transport service and operations related to transport of goods, passengers (people) and the communication of which depends on their ability to meet the explicit or the expected (assumed) the requirements and needs of its users.

It should be noted that in the quality of transport services can be distinguished: quality of transport infrastructure, the quality of traffic of the superstructure, the quality of transport conditions in a particular direction, and in the quality of transport services to the above can be distinguished: the quality of transport infrastructure, the quality of traffic of the superstructure, the quality of transport conditions on the transport route, and quality operations in relation to transport (quality of loading, unloading, transshipment / handling, sorting, stacking, loading, cataloging (labeling), and the quality of many other additional logistic activities that increase the value of services and an argument according to which the quality of transport services can be called "quality of transport and logistic services.

The quality concept of transport services can be in all stages of transport (preparation, execution, completion) to consider the totality of the value of all services in the process. Determining the quality of transport services can be assumed, and evaluating a number of important sub-systems whose parameters are not always equivalent, which means that much of a variable feature. Due to these characteristics, the definition of qualitative features of transport and can be mathematically represented as a vector [1, pp. 55]:

$$\overline{F}(Q) = f(Y_1, Y_2, Y_3, ..., Y_i, ..., Y_n).$$

Therefore, the transport properties would be dimensioned aleatory variable whose
characteristics of the basic values of individual subsystems $(Y_1, Y_2, Y_3, ..., Y_i, ..., Y_n)$.

Quality of transport and logistic services, a key factor in the competitiveness of transport routes and all those parties involved in creating an transport services on these routes (transport operators, carriers, railroads, logistic operators, inland terminals, cargo distribution centers, etc.).
Quality of transport and logistic services include [5]:

• External Quality
• Internal Quality
• General Quality (Ext. + Int. Quality).

External quality is the quality that define the end-users through market segmentation and qualitative indicators, while the Internal quality is the quality which is defined and realized by participants in the creation of transport and logistic services and their strategies. General quality of transport and logistic services is a product external and internal quality, where external quality should be based upon and analyzed in relation to market segmentation - qualitative indicators of a user different due to different segments of the transport market, regarding to specific quality requirements and needs of different segments.

Internal quality should be based upon and analyzed in relation to the transmission potential - the concept of transport services must reflect the diversity of the market and develop a wide range of

solutions-oriented customer.

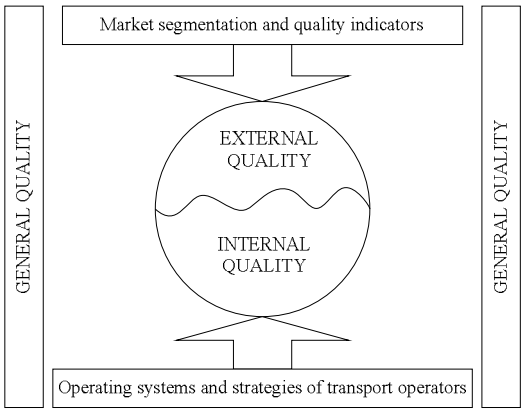

Figure 1- Internal + external quality = overall quality of transport and logistic services [5]

Depending on the dynamics of service quality in the transport and logistic services there are:

• quality development and project activities - quality of creating new service due to technical and technological capabilities that meet market demands, a transport company allow cost-effective and economical operations,

• quality of implementation of transport and logistic services - manifested as a reliability that can be expressed as a probability of transportation subsystems according to predefined parameters and superior internal and external conditions and influences.

The specificity of quality in the field of transport is that it can not be ambiguous or misunderstood. In other words:

• Transport of goods done on time or delayed,

• Services or do or do not meet requirements,

• goods are delivered damaged or undamaged.

The quality is so visible in transport that any logistic operators tried to define its own method of calculating the cost with allocate some basic areas related to the quality of services, such as eg.: general operating efficiency, administrative procedures, relationships between people/ communication, direction and profile tariffs. The importance of quality in transport is evidenced by the common transport policy of the EU, which defines three priorities are still valid, namely [6, pp. 153-168]: security, • environmental protection and customer service, improved quality of transport services.

The quality and orientation to services is a key factor for success in the market in the area of transportation services, for which local transport and logistic companies need to ensure its strategy following the practice of European transport and logistic company with a view to establishing, maintaining and continuous improvement of the quality of its transportation logistic services.

2.2. Standardized base for defining, assurance and quality management of transport services

Standards represent prescribed quality, but also a measure of actual quality. This means that no quality without clear and understandable quality standards. Quality must be a constant and continuous. Witness is the ISO quality certification (ISO 9000, 9002, 9003 and 9004) verified certification issued by institutions, which have a "limited lifetime", that are valid for three years and checked every six months. Participants in the creation of transport and logistic services must be carefully designed and implemented a strategy for assurance quality services in a transport direction. Establishing, maintaining and continuously improving the quality of transport and logistic services including fulfilling two basic conditions, namely:

• defining quality of service and

• establishing a system of quality assurance for services.

The definition and implementation of quality systems in transport services is a specific task, given the absence of

appropriate standards. For this reason it is very important to define the methodological basis for the achievement of the primary prerequisites for establishing, maintaining and improving the quality of transport and logistic services, where available ISO 9000 standards, whose definition and adoption in the field of transport services requires certain professional efforts.

One of the main decisions in ensuring the quality management system is the adoption of the model system of quality transport services, which can be done based on the ISO 9001 standard In accordance with the basic activities of transport and logistic operators, the system of ISO 9002 is the right choice. ISO 9002 is identical with ISO 9001, except that it does not contain the requirements of design and development. However, it is more complex in relation to ISO 9003 which is designed for organizations that require only a final inspection and testing of their products and services. With acceptance of this, implementation of quality systems should be implemented in accordance with 19 standard elements of the system of standards ISO 9002 These standard elements should be documented in the quality of rules, the basic document of the applied system according to ISO 10013 standard. In addition to selecting a system model, the application requires an adjustment to the specification of qualitative terms related to transportation and logistic services, which should be based on the ISO 8402 system, which includes a glossary of terms and definitions. After selecting a system model to determine the elements and structure of quality systems in a way that fits the specific activities suistem company or her best to adjust. In fact, the system helps in 9000-1 following three aspects:

• gives the principles of quality that can be practically the principles of quality systems of each companies including transportation,

• contains principles how to select and implement a system of quality standards for its own internal quality objectives of the organization and

• determines the goals of external quality.

As the basis defined next principles of implementation of quality systems in the field of transport and logistic services:

1. The determination and regulation of major parts and accountability in the relation of quality.
2. Research and meet the requirements and expectations of the organization
3. Taking into consideration several groups of products (hardware, software, materials, services) and their characteristics
4. Defining the four elements of quality (marketing, planning, control, use)
5. The recognition process orientation, quality management system should be approached as a process, meaning the orientation process is that each process has its own inputs, transformations, outputs
6. Network Principle (processes create a network)
7. Recognizing the fact that the quality system is itself a network, and should be harmonized
8. The quality system should be researched and checked continuously
9. The value of products includes both: quality, price, since price is not an element of quality
10. Customer other than the qualitative characteristics taking into account the additional value elements:
    - market position and strategy of the supplier,
    - financial situation and strategy of the supplier,
    - the situation on human resource strategy of the supplier.
11. Aspirations should be directed to:
    - meet all customer s expectations
    - determining the objectives and duties in relation to quality

- development of possible risks and benefits

Defining the basic elements of quality systems can be done based on the principles of the ISO 9004 standards, which represent these elements. Characteristics of transport and logistic services should take account of the service, assurance services and control services as more elaborated in ISO 9004-2 standard in fields of management, resources, documentation and operational subsystems. Finally, the regulation of inspections and monitoring quality systems which are detailed in ISO 10011-1, can serve this purpose and for transport and logistic services.

3. ASSUMPTIONS AND QUALITY ASSURANCE OF TRANSPORT AND LOGISTIC SERVICE

Success in achieving desired results in the creation of quality transport and logistic services required: marketing approach, idea, concept and its development and operationalization of the idea. In this sense, defined method for the planning quality of transportation services with respect to basic principles and goals that a quality system must meet.

3.1 Assumptions of the Quality Assurance

Processes whose realization occurs transport services employ human and technical resources must be continually modernized. This means that a uniform development of transport infrastructure, superstructure, technology and human resources are a prerequisite for a good marketing approach, creativity in design, presentation and economic acceptability of transport services. In addition, it is necessary to determine:

• basic actions that significantly affect the properties of defined transport services;

• choice of properties and methods of conducting the analysis, actions and procedures that ensure defined quality;

• methods to evaluate selected properties;

• means by which to influence the properties and manage properties within the established limits.

The basis for the development strategy of quality transport and logistic services can be used "Triangle for assurance quality system" (Figure 2), centered services to users, and the final customer or a participant in the creation of services. The second part of the triangle are three elements which need to be balanced. Among them is an important element of loyalty to management as the main policies of transport-logistic companies (image, goals, strategies) within which the policies determined by the quality of future success and qualitative position of the organization.

The quality of transport services as a complex cycle (Figure 3) should include the implementation of the following tasks: quality planning, quality assurance, control and evaluation of quality and quality improvement.

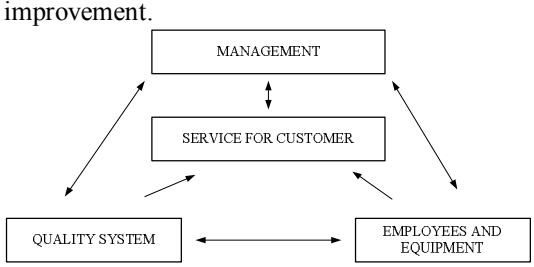

Figure 2 - Triangle for Assurance Quality of transport and logistic services

Phases of planning and quality improvement falls within the domain of management, based on experiences from practice (quality assurance) and new knowledge (research) management works out a way to improve quality and to enter into a new plan quality. This cycle repeats quality of transportation services since it is

based on constant improvement. To ensure the quality system, quality planning with the ultimate goal of effectively convincing end users of transport services, and thus the increased volume of work in passenger and freight transport should be conducted with the technical, technological, economic and market aspects.

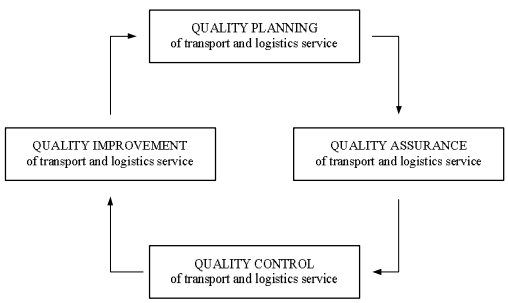

Figure 3 - The cycle of quality transportation and logistic services

Quality systems assurance in general, as well as in the case of transport and logistic services is a continuous process since the user requirements are constantly changing in terms of seeking more and better. It should be said that the offer itself influences the formation and modification of their demands and desires. In connection with the offer should be mentioned that the presence of competition among users increases freedom of choice. Durability of activities required, given the interdisciplinary problems, trained staff and quality structure of employees to ensure quality. All these activities are in vain if you do not realize the pleasure and confidence of users of transport services. Customer needs expressed level of required services, to achieve general analysis of effectiveness and efficiency of the process, the changes made by new modern technologies, as well as optimization of costs associated with quality, should form the backbone of each activity, since only a systematic approach can eliminate potential mistakes.

For these tasks for the implementation of quality systems, it is evident that access to quality has evolved from the concept related to production and concept related to management, which is confirmed by the definition of Total Quality Management's (TQM). Starting from the meaning of "quality" (Qualitas - Lat. Quality, capacity, excellence of a thing, value, quality, competence), meanings of the term "total" (totus - Lat. Entire, all, entire, complete, total, complete, comprehensive) and the meaning of the term "manager" (manager - engl. manager, entrepreneur, manager), the concept of Total Quality Management - TQM can be translated as "managing the entire (total) quality." Guided by user services and fully oriented on the market, TQM is a system improvement, increased flexibility, effectiveness and efficiency of operations. Based on the concept of continuous improvement and continuous improvement processes in quality, teamwork, resulting in continuous improvement. Defining the level of quality necessary to take into account the cost of quality related to the costs of quality achieving and maintaining, and can be divided into two main groups [4., str. 81-95]:

• internal quality costs - marketing costs, costs of planning, costs of design products and services, the cost of the planning process and preparation of specifications (standards), cost of living causes of failures and errors, control costs of materials, products and services, the costs of quality improvement, educational expenses, and al.

• external quality costs: cost of replacement products, fails because of poor quality and others. costs that can be measured and recorded in the company.

But the biggest, immeasurable losses in transport and logistic services to the following external costs: the lost reputation in the market, the loss of trust of customers, reduced competitiveness, loss of markets, lower costs, less income and so on. Specifically, defining the level of

quality it is necessary to objectivity the cost of quality, and usefulness of transport and logistic services. Optimization of these values is obtained by the resultant technical-economic and market acceptable quality level.

Efficiency and effectiveness in meeting customer needs requires knowledge of all those sub-processes, elements and factors that determine the process of production of transport services, which are interlinked and intertwined. Only so can achieve a quality system, quality management according to established target levels and satisfactory business results that do not come by themselves but require adequate management strategy and planning of all activities for competitiveness in the market of transport services.

3.2 The goals of quality assurance

Those characteristics of the system of quality transportation and logistic services and the possibility of valorization of a particular transmission direction on transport market predetermine the future of business and objectives to be achieved by introducing a quality system should be given special attention. According to the scale of priorities, there are three main objectives:

- user satisfaction,
- continuous improvement of transportation

and logistic services, and supporting,

- environmental protection and the requirements of the community.

As the most important goal in the first place stands out user satisfaction, which is understandable since the creation of transport and logistic services is not an end in itself, but is mandated to meet the needs of transport market, ferrying passengers and cargo to the intended destination within a certain period, offering a wide range of background logistic services. User transport and logistic services to name a central place, since it is precisely their satisfaction or dissatisfaction with (directly or indirectly) defines and determines the level of quality transportation services. In other words, the final score determines the quality of the relationship of realized desire and the actual needs of users and the final product - transport and logistic services. In accordance with the obtained score, we can expect a favorable or unfavorable result with all the repercussions that it generates. Second place on the list of priorities takes a continuous improvement of transport and logistic services. Achievement of quality control is implemented through function whose main task is to determine the correspondence designed and implemented transport services.

Protection of environment and the demands of the community are next quality objective. Bearing in mind that environmental protection and management of the environment are dominated area not only in the broadest notion of quality, but also for the survival of the human species, the activity in the area of environmental protection is a task that should be accepted as one of the main factors of the basic quality of human kind and quality of life. The future of security systems and quality management based on establishing firm links with environmental and safety criteria as a logical assumption for achieving total quality management. An appreciation and realization of this objective tendency obliges carriers and all other entities involved in the production of transportation services for permanent control and continuous improvement of environmental impacts at all stages of preparation and implementation of services, which creates conditions for the assurance of quality services with maximum preservation of natural resources.

In relation with the above we can conclude that the main objective of quality assurance systems in the creation of transport and logistic services in a

particular direction of increasing the value of services. It should be noted that product or service does not meet the quality if the danger to the environment or health, unless it is safe and if they do not comply with the terms specified in the contract (about transport or transport and logistic service). All these requirements together with the qualitative requirements can be defined as "the value of transport and logistic services". At the same time if all quality requirements do not meet the promised level of service quality that define the quality of transport and logistic service. Therefore, the main goal of quality assurance system is achieve the highest value of services. Mentioned the value of transport and logistic services is determined by the relevant qualitative criteria, which can be divided as:

1) criteria for transport

- reliability
- meet the time constraints
- accuracy
- flexibility
- accident prevention
- monitoring
- information about transport
- preventing damage
- availability of transport capacity
- timely delivery / shipment

2) criteria for services:

- qualification
- motivation
- sensitivity
- helpfulness
- qualification for public negotiation
- reliability
- impression
- responsibility
- market knowledge
- rules of marketing
- speed of delivery
- ease of survey
- presence of scale

3) logistic criteria:

- delivery of the first-hand
- the possibility of selling / buying
- transport chain
- clearance
- cargo insurance
- monitoring
- consultation
- added logistic services
- availability
- logistic operators

When planning the quality of transport and logistic services necessary to take into account the "preference structure of qualitative criteria, or the structure importance (weight) of individual quality criteria in terms of user services, and in terms of individual modes of transport [7, pp. 47-64]. So, to keep users satisfied becomes a task of great importance in quality assurance of transportation services, as yet another reason which is related to overcapacity in the transport industry, because of carriers and other participants in creating an transport services more and more expected.

4. CONCLUSION

To make the transport route and entities in the creation of transport and logistic services in this way retain their place in the market of transport services, must ensure efficiency, focusing on service users, rationality, environmental acceptability and quality of the dominance of the services offered. Focus on customers and flexibly to market demand creates the preconditions for organizing a modern and attractive transport route and transport and logistic service companies who participate in the creation of transport services in that direction. Valorization of the transport direction of the market of transport services implies and requires a different behavior, acceptance and adherence to standards and new standards of quality transportation and logistic services.

Quality management has become an

integral part of strategy planning and evaluation of the competitiveness of the transport direction. Quality system should be implemented gradually step by step "implementation of tasks relating to: the achievement of quality control, quality assurance and quality management. One of the main decisions in assurance quality management system transport and logistic services is the adoption of model quality system. The above model can be conceptualized using a standardized database to defining, assurance and quality management system (ISO), according to all the assumptions and objectives of quality assurance for specific transport and logistic services. As the most important goal in the first place the user satisfaction, which is understandable since the creation of transport and logistic services is not an end in itself, but is mandated to meet the needs of transport market and the demands, needs and interests of service users. Not having the customer or user of the service means offering a service that nobody needs. Accordingly, the development of the transmission line is questionable if the basic rule of business is not based on retaining existing customers and attracting new ones. When it is primarily necessary to know the current and future needs, desires and expectations, to be on the ground that could realize the fulfillment of the request and possibly exceeding users' expectations. Only in this way can yield positive results in attracting users of transport services and cargo flows to the transmission line, which causes an increase in transport volume, revenue and the valorization of the transmission line.

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