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QUALITY MANAGEMENT TOOLS IN PUBLIC TRANSPORT

Abstract

Public transport sector play a very important role for the prosperity of the whole European Union. The inhabitants' demands for the public transport can be met only by acceptance of such quality principles and practices that offer the customer services satisfying or exceeding their expectations. The public transport quality enhancing is more and more connected with competitiveness that is necessary to be increased towards constantly expanding automobile transport. The paper presents some known quality management tools that enable better understanding the quality conception in public transport and processes of continued improving. The effort of the organization should concentrate on the fact that the quality perceived by the customer is approaching as much as possible the quality expected by him.

INTRODUCTION

Public transport plays an important role in the future transport system especially in term of natural environment sustainability [3]. The actual huge development of individual automobile transport brings negative impacts on the quality of natural environment in towns. In Slovakia as well as in the adjacent countries the ratio of urban public transport to individual automobile transport was in the past approximately 80% to 20% in favor of urban public transport. But in the last decades development of transport in economically developed countries is characterized by comprehensive growth of using personal motorcars and fall in using urban public transport. Development of an automobile transport in these countries gradually changed the previous ratio to actual 30%:70% or 20%:80% that is accompanied by all known negative impacts on natural environment, continuity, safety and functionality of transport system and subsequent displeasure of inhabitants and visitors of these towns.

Public passenger transport supports achievement of various social-economic objectives and its advantages can be defined from more aspects [4]:

- ecological – considerably fewer exhaust emissions is produced in comparison with motor car transport for individual usage,
- social – inhabitants pay for travel to schools, work, health care institutions, authorities, etc. acceptable price,
- regional – its availability considerably contributes to balanced regional development and enables to avoid of rural areas displacement,

- spatial – it is less demanding for the space (parking areas) in comparison with individual motor car transport, especially in the city centers individual motor cars parking is spatially limited,
- safety – it indicates considerably lower accident rate in comparison with individual motorcar transport. The railway transport is the safest transport because it operates on reserved transport line.

The public transport sector is very important for the prosperity of the whole European Union. In the last years the European Commission published many documents where the conception of the public transport quality, that should play an important role in the future systems of public transport, is emphasized.

1. QUALITY IN PUBLIC TRANSPORT

The word quality is a very well- known notion that is defined by plenty of definitions. In the laic community quality is often used to indicate exclusiveness of goods and services. In the quality management systems the terminology is defined by standard STN EN ISO 9000:2005/Quality management systems -fundamentals and vocabulary that defines quality as: “degree to which a set of inherent characteristics fulfils requirements“ [6]. Quality is a relative notion that depends on the relation between the objectives, means and results. In term of the public transport quality is not able to be defined by simple and short definition because as well as in other public services the objectives are not always exactly defined. The results depend on the user’s perception and the service delivery is never at the level which would be sufficient for all users [1]. Quality improvement is more and more connected with competitiveness that public transport needs to increase towards continually increasing individual motorcar transport.

The principal elements of quality in public transport include [2]:

- Accessibility.
- Comfort.
- Service quality by well qualified personnel.
- Frequency.
- Information.
- Integrated Services.
- Punctuality.
- Regularity and Continuity.
- Safety.
- Security.
- Adaptability to customer needs.
- Technical and service innovations.
- Speed.
- Tidiness.
- Value for money.

From the view of increasing the public transport share as a mean for ensuring mobility of persons in towns and regions the public transport sector should focus especially on applying these principles [1]:

- Change from product to customer management.
- Applying the quality management systems as a tool of change for obtaining contribution for all stakeholders in public transport sector – contact personnel, customers, shareholders, managers.
- Development of innovations and effective dissemination of best practices.

- Increasing general use of public transport by facilitating the services of intermodal transport where the customer has option in competitive environment.

2. QUALITY MANAGEMENT TOOLS APPLICABLE IN PUBLIC TRANSPORT

Tools and methods used to perform quality management and aimed to facilitate better understanding of the quality concept in public transport and processes of its continuous improvement include: quality loop, self-assessment methods, benchmarking, standardisation and certification and the CEN quality framework.

Quality loop

The quality loop is a customer oriented dynamic process leading to quality improvement. It is based on four basic quality dimensions that for the public transport field include: expected and perceived quality from the customer point of view and targeted and delivered quality from the service contributor point of view (see Figure 1).

Expected quality is the level of quality anticipated by the customer. Perceived quality is the level of quality perceived by passengers in the course of their journeys as well as from information obtained from other sources. Targeted quality is the level of quality that the operator aims to provide to passengers, it is the target of its service. It depends on the customers' requirements, external and internal conditions. Delivered quality is the level of quality that is achieved on a day-to-day basis in normal operating conditions. Service disruptions, whether or not they are the fault of the operator, must have to be taken into consideration.

Analysing differences among these four dimensions helps them who are responsible for decision making to improve the quality of public transport:

- the gap between perceived quality and expected quality expresses the degree of customer satisfaction with supplied service,
- the gap between expected quality and targeted quality expresses ability of the service contributor to concentrate on the issues important for customer,
- the gap between targeted quality and delivered quality expresses ability of the service contributor to achieve defined targets,
- the gap between delivered quality and perceived quality expresses ability of the service contributor to approach the customer thinking.

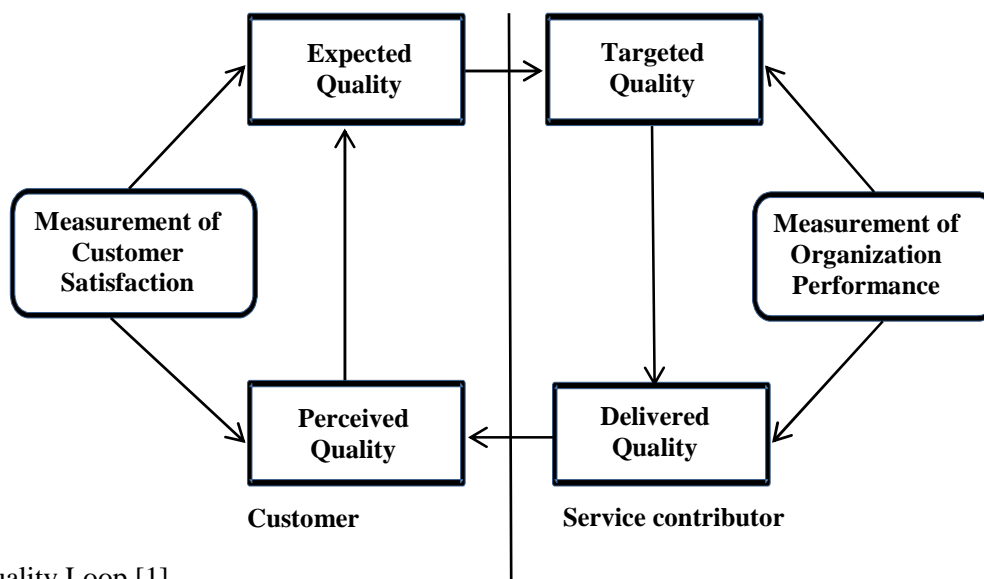


Fig. 1. Quality Loop [1]

But it is important to keep in mind that the “over-quality” is not always contribution because it can mean also non-quality since it meets so requirements that are not interesting for the customer. The effort of the organization should concentrate on the fact that the quality perceived by the customer is approaching as much as possible the quality expected by him.

Self-assessment methods

Self-assessment approach is based on the concept “to measure and to improve” that provides organization possibility to measure its performance and helps to identify fields for improvement and innovations. The results of the self-assessment are the strengths and weaknesses of the organization and the level of management system. These self-assessment results are also good inputs for management review. The well-known self-assessment model is EFQM model. The EFQM defines self-assessment as “taking a hard look at your organisation and scoring it against an ideal or model (the EFQM model in this case). The results indicate the organisation’s strengths and areas for improvement and provide the basis for future strategy and improvement plans...” [1]. The methodologies of self-assessment and processes improvement are also given in Annex A, B of the standard ISO 9004:2000.

Benchmarking

Benchmarking is realized with intention to implement improvement. Its main objective is to build on the successful experience of the others. It is manifestation of effort of the learning organisation to keep up with the latest best practices in its field. We distinguish internal and external benchmarking.

Internal benchmarking means systematic comparison of the enterprise performance from the view of enterprise departments or branches. External benchmarking means systematic comparison from the view of other enterprises, competition or head organizations in the sector. Internal benchmarking is not specific to public transport. External benchmarking in public transport can be defined among operators, among authorities or benchmarking at regional, national and international level. External benchmarking among operators is not common especially for the reasons of confidentiality, the lack of efficient tools to identify comparable practices, and secretiveness due to fear of weaknesses disclosure. Benchmarking among authorities can be considered from the views of authority behaviour during a transition period, authority relation to operators, authority involvement in management system and sharing of responsibilities between authorities and operators [1].

Standardization and certification

Standardization and certification are the parts of the quality assurance process. Quality assurance consists of “all the planned and systematic activities implemented within the quality system and demonstrated as needed to provide adequate confidence that an entity will fulfil given requirements for quality” [1]. The ISO 9000 family of standards help to implement and realize effective systems of quality management for organizations of all types and sizes. At present the actual ISO 9000 family of standards in Slovakia are:

- STN EN ISO 9001:2008 - Quality Management systems. Requirements.
- STN EN ISO 9000:2005 - Quality Management systems. Fundamentals and Vocabulary.
- STN EN ISO 9004:2009-Managing for the sustained success of an organization. A quality management approach.

Certification proves achieving an adequate confidence that duly identified product, process, qualification of staff, quality system are in accordance with a specified standard or other normative document. The purpose of the certification is verification of conformity of certified object with respective regulations or standards in so way that the results of this

verification can be acknowledged not only in the country where the verification was realized but also in other countries that accept the certification principles.

In September 2002, the French national organization for standardization published standard NF EN 13816 „Transportation - Logistics and Services - Public Passenger Transport - Service Quality Definition, Targeting and Measurement“. This standard was accepted in Slovakia under STN EN 13816 and is focused especially on increasing the quality level in public transport operation. This standard defines framework for formation of service quality criteria offered to passengers in public personal transport. Measuring and evaluation of these criteria is given by standard STN EN 15140 - Public passenger transport. Basic requirements and recommendations for systems that measure delivered service quality.

The European Committee for Standardisation (CEN) quality framework for public transport

The CEN has developed comprehensive framework for analysing both functional and technical quality determinants in public transport. It is expected that this matrix will become the common European recommendation for identification of the quality elements in public transport (see table 1).

Tab. 1. Quality framework for public transport [1]

Availability	network, timetable
Accessibility	external interface, internal interface, ticketing
Information	general, normal conditions, abnormal conditions
Time	length of travel time, punctuality and reliability
Customer Care	commitment, customer interface, staff, physical assistance, ticketing options
Comfort	ambient conditions, facilities, ergonomics, ride comfort
Security	safety from crime, safety from accident, perception of security
Environment	pollution, natural resources, infrastructure

CONCLUSIONS

Public passenger transport supports achieving various social-economic objectives. Its advantages can be defined from ecological, social, regional, space a safety point of view. Increasing the attractiveness of the public passenger transport is possible to achieve only through increasing the quality of transport services offered to passengers. Quality assurance of public passenger transport means to offer the services that meet or exceed customers' expectations. Customer satisfaction should be the main priority. Sustainable mobility development, based on satisfaction of continuously growing transport demands in a required time and to a desired quality with simultaneous decrease in the negative impacts on the natural environment, is the global aim of the Transport Policy of the Slovak Republic until 2015 [5]. In the field of public transport the Slovak Republic has defined these priorities: ensuring economic competition in acquisition of transport services, modernization and development of transport infrastructure, ensuring sufficient sources for financing of public transport, decreasing negative impacts on natural environment, increasing quality of services in transport as well as increasing security and security protection [4].

REFERENCES

1. *Benchmarking and quality management in public transport. Portal. Transport teaching material.* 2003, [cit. 2012-05-06] Available at: http://www.eu-portal.net/material/downloadarea/kt1a_wm_sk.pdf
2. European Union Committee, European Transport Workers' Federation: *The proposed*

- Green Paper on Urban Mobility*. January 2007, [cit. 2012-05-06]
Available at: <http://www.itfglobal.org/files/extranet/-75/18287/UITP%20ETF%20statement%20Green%20Paper%20EN.pdf>
3. ICLEI European Secretariat: *Better Urban Public Transport for Europe*. [cit. 2012-06-06]
Available at:
http://www.increase-public-transport.net/fileadmin/user_upload/Procurement/SIPTRAM/Making_a_commitment/Making_a_commitment_English.pdf
 4. Ministry of Transport, Construction and Regional Development of the Slovak Republic: *Development of public personal transport prior to individual transport*. [cit. 2012-06-06] Available at: www.telecom.gov.sk
 5. Ministry of Transport, Construction and Regional Development of the Slovak Republic: *Transport Policy of the Slovak Republic until 2015*. [cit. 2012-06-06] Available at: www.telecom.gov.sk
 6. Slovak Standards Institute: *STN EN ISO 9000:2005 Quality management systems. Fundamentals and vocabulary*. Bratislava 2005.

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