

THE ASPECTS OF QUALITY MANAGEMENT SYSTEM IN ENTERPRISE OF AUTOMOBILE SERVICE

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Abstract. Due to the aspects of the new European Union (EU) competition rule according to automobile service of automobile distributor enterprises, the requirements to development of unified criteria for quality system has turned up. On the basis of situation analyses and feedback of the customer's satisfaction there are cognized specific quality criteria for the sector. The effectiveness of implementation of standard ISO 9001:2000 for certification of automobile service is evaluated.

Key words: automobile service, quality management system, certification.

Introduction

Number of cars in Latvia increases more than for 10 % a year and in the beginning of year 2008 the amount of cars approaches 905000. In presents variable economical situation only in the first month of this year there are entered 2242 new cars in the country [1].

Flying upgrowth of car park originates interpellation to complex and dedicated enterprises of automobile. Along with approximately 500 existing enterprises of automobile service (EAS) there will be necessity for new enterprises with modern equipment, but numerical increment does not resolve whopping problems in the area.

Very often insurers receive grievances from masters of cars that repair works are not made very quality, and with petitions to countervail casualties what are arisen during service operation [2]. Complaints are received also about a long time to wait for a service and about long files what engendered by a low capacity of EAS. Performance of the works of one and the same enterprise sharp diverge as from costs as from quality of performed works. In addition there are not observed correlation between quality and tariffs, namely: high price does not guarantee for a quality and vice versa. This problem affects not only to interests of potential customer. According to rules, in case of damage of automobile insurers have to reimburse causalities arisen, renovating car as it was before wreck.

Alignment of technical service with the European economical space designate, that EAS also have to initiate in their actions quality management system according to requirements of the standard LVS EN ISO 9001:2000. Introduction of the system will impact to assuredness about quality of the kindness and the certificate will function as one of the guarantor of the quality [3].

There are a couple of certified EAS according to requirements of the standard mentioned above as, for example, Adam Auto SIA, Autonams SIA, Rīgas satiksme SIA, Cata AS, Nordeka AS etc.

Materials and Methods

The objective of the research – standard LVS EN ISO 9001:2000 adapted in the Latvia and its influence in introduction it in EAS of the Latvia.

Aim of investigation – to substantiate the necessity of the introduction of the quality management system and to impart concept about particularity of realization and problems of the system.

Goals of investigation:

- to ascertain factors that affects to the quality of the action of EAS;
- to develop aims and politics of the action of EAS;
- to describe the organization of the serving clients of EAS;
- to develop methods of the research about contentment of the clients and to perform monitoring.

For the solving of the problem following scheme is used: awareness and particularization of the viewpoint of the interrogatory, organization of the diagram of the reasons – aftereffects of the problem (according to Isikava K.), detection of the probable variants of the solutions.

Methodology used in the research – theoretical research with methods of abstraction, induction and analysis. In the requirements of the standard ISO 9000 there are included principles of improvement, all-embracing quality (TQM) where great accent to provision of the client is told [4]. That is demonstrative shown in spire composed by authors for the administration of the contentment of clients (Fig. 1).

The main criteria of the quality of service of EAS – contentment of client, its monitoring has to be never-ceasing, from first visit of client and has to be continued find out in next visitations (client cards, service book of client visitations etc.) [5].

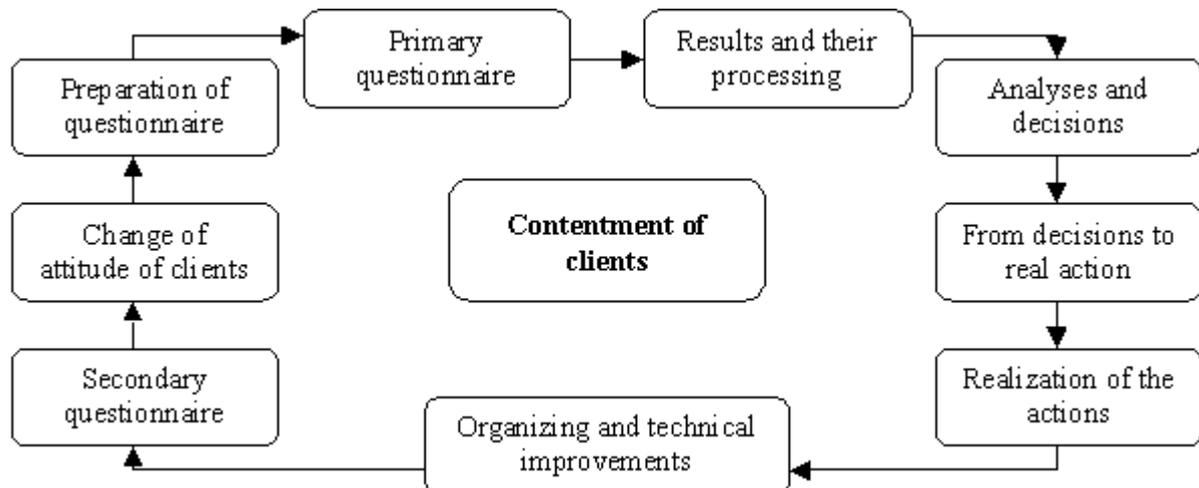


Fig. 1. Level of contentment in EAS

Level of contentment of clients in kindnesses of the EAS is safeguarded by three nuts and bolts: material-technical basis, certified knowledgeable specialists and up-to-date technologies. Not less important is attitude to client: to furnish kindness as operative and quick as possible, with optimal costs.

In Fig. 2 there are given affecting elements of quality system, main attention has to be worth on them. Introduction and management of such system gives manifest meaning in the occupancy of the competitive position in the market, especially in time, when it is necessary to widen range of clients as well as for achieving of economically legitimated proceeds, finding out of desires of clients as well as to penetrate and effectuate them, improvement of processes, accurately solving of the problem and acceptance of strategically accurate decisions.

Results

When quality management system is initiated according requirements of the standard ISO 9000, it is necessary to penetrate what does it mean: contentment of the clients? – It is net result which is acquired on receipt of kindness as well as appraisal of received kindness from client side. Standard explains: organization has to demonstrate potency to deliver kindness consequentially what coincidence to desires of client and problems of accordant area [6].

Accordant to the requirements of the standard ISO 9001 it is obligatory necessary to reflect comments of clients and it is necessary to give changes what could affect to action of organization as well as recommendations to improve it.

In the delivery of judgment as a goal and category of investigation are attitudinized qualitative or measurable quantities (Table 1).

Results obtained in polling of clients have to be processed according to prevalent statistically methods [7].

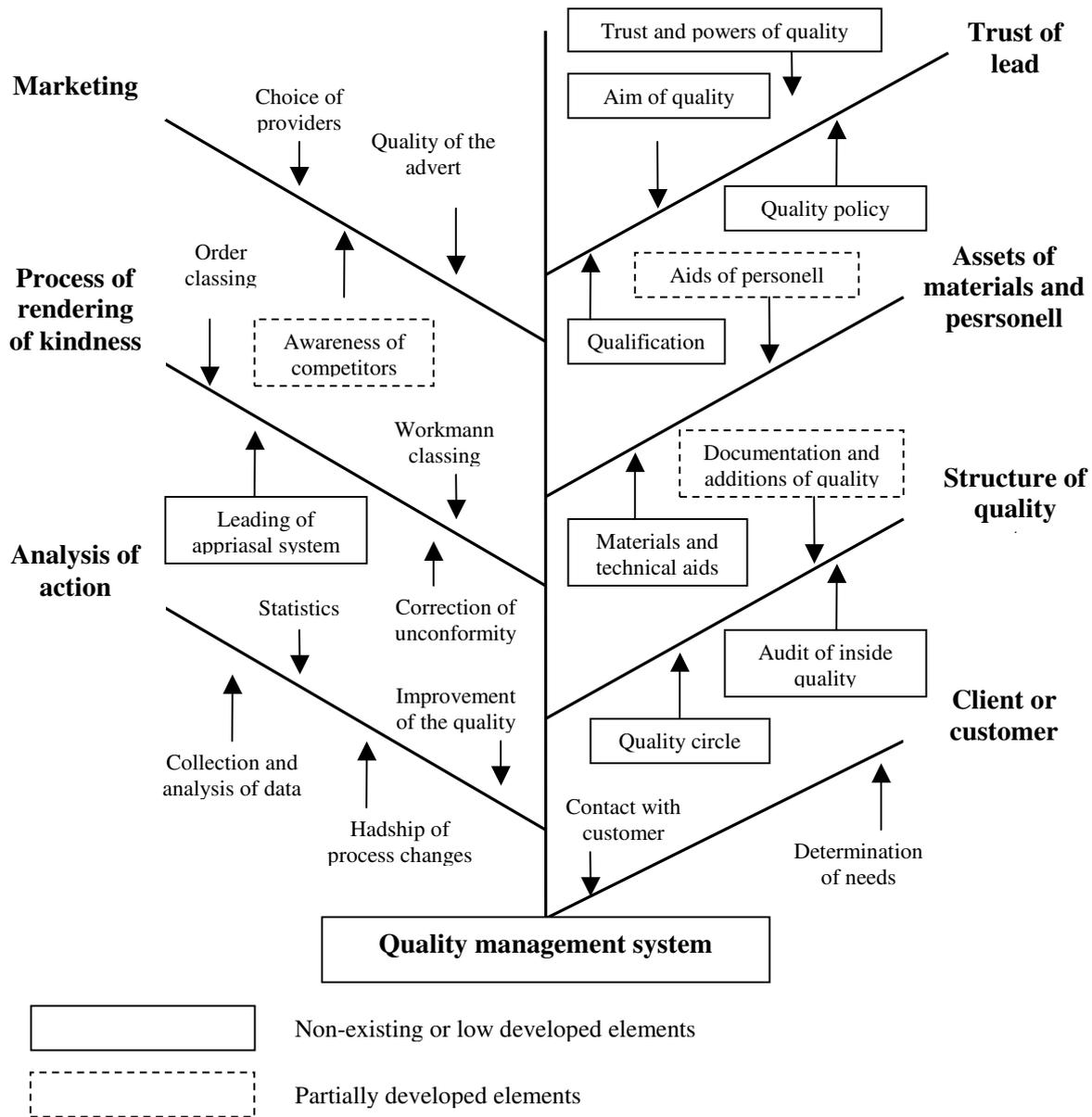


Fig. 2. Possible quality system of EAS [5]

Table 1

Four research categories of contentment of clients [7]

Indicator	Overall status	Transaction (deal)	Reliability	Safekeeping, diagnostics
When to perform?	Periodical	For definite transaction	After period of deposition or after definite stage	When feed-bask is good or trashy
Overlay	Number of clients as possible	Clients of transaction	Paragon	Clients who need to be checked
Appraisal results	Global results	Fragmentary results	Overall safety, periodical audit	Orientation to perception

One of the tool what we are used is Confidence interval where assessments groups around normal value. This value is appreciated in units of scale according following equation:

$$CI = \bar{x} \pm \frac{S}{\sqrt{n}} \cdot t, \quad (1)$$

where CI – confidence interval;
 n – number of data in the group;
 t – confidence level (adverts how much parameters of paragon reflects quality of population);
 S – standard deviation [5]:

$$S = \sqrt{\frac{1}{n-1} \cdot \sum_{i=1}^n (x - \bar{x}_i)^2}, \quad (2)$$

\bar{x} – arithmetical mean.

Allowable mistake is desirable preciseness. Error of pick-up of paragon at given confidence level:

$$AM = \frac{t \cdot S}{\sqrt{n}}, \quad (3)$$

where AM – allowable mistake.

Paragon quantity can be calculable using metrical data:

$$Pq = \frac{Z^2}{\left(\frac{CI}{2}\right)^2} \cdot S_x, \quad (4)$$

where Pq – quantity of paragon;
 Z – assessment and desiderated quantity level [5], for example, if desirable level of confidence level is 60 % than $Z = 0.84$, if desirable level is 99.5 %, than $Z = 2.81$;
 S_x – standard deviation of the assessment.

Volume of paragon can be calculable using comparative data:

$$Pq = \frac{Z^2}{\left(\frac{CI}{2}\right)^2} \cdot (P[1-P])^2, \quad (5)$$

where Pq – paragon quantity;
 CI – coincidence interval (± 0.5);
 P – measurable characteristic value.

From paragon results they have to be extrapolated to data basis of all clients. After summarization and manifestation of the results it has to be worked out possible ways of improvement.

Standard ISO 9001:2000 predicts that higher leadership has to look through system to provide its aptitude, accordance and efficiency [6].

One of the usability criteria of research is comparison of EAS and specific positions. That means that identical measurements have to be performed about client conjectures about fellow creature competitor.

In the research object – in the auto service X – clients are divided into two parts: discretionary clients and new clients. Work of EAS by both groups is appreciated positively. One of the attenuate points in the serving of clients appears – it is operativeness of solving of problems and terms of performance of the service.

Discussion

Each employee which contact with client creates impression about EAS that is why it is important let the professional impressions becomes created in each level and during any procedure. Leadership of the enterprise have to demonstrate decisions to provide quality and to perform desires of client introducing the standard ISO 9001:2000. Insight about desires of client is necessary to provide the accomplishment of requirements with minimal costs, and it has to be recalled that each one is potential client in the future; it is required to treat accordingly against them.

For certification of EAS it has to be worked out Quality handbook as evidence about adequacy of quality system to desires and protective efficiency.

Table 2

Summarization of questionnaire of independent clients of auto service

	Independent clients				
	Very bad	Bad	Average	Good	Very good
Working hours	0	0	0	18	12
Communication	0	0	2	10	18
Serving by telephone	0	0	2	18	16
Favors offered by service	0	0	8	10	14
Co-operation of bureau employee	0	0	8	10	20
Terms of performance of work	0	0	10	14	6
Operativeness of problem solving	0	0	4	10	14

Conclusions

1. It is established main effected factors to the quality of EAS.
2. Basic of the quality management is introduction of the standard ISO 9001, what provides philosophy orientated to clients and focused to management, provides management of employee, teaching and unitary work of command, as well as motivation non-stop improvement of EAS labour process.
3. It is definite preconditions that for successful working of EAS it is necessary:
 - to initiate quality management system (ISO 9001);
 - to provide accordant materially technical basis;
 - non-stop improvement of qualification of employee;
 - advert and information.
4. It is proven necessity of introduction of non-stop monitoring-system of clients.
5. It is needful to fashion labour performance technology according to flow of demand and qualitative performance of work.

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