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Analytical complex for company car-service quality assessment

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Abstract: This paper discusses an analytical complex of car-service quality assessment. The overall satisfaction, including estimation of a product, is related to service quality and forms consumers' preferences when choosing a new car. The system must help both the manager and the subordinate chain to determine key aspects influencing the quality assessment and consumers' satisfaction. The aim of this paper is to analyze the problematic issues determining the development of corporate service centers in Russia, with structure design of the analytical management development system of company service automakers network to meet the main current challenges. One of the main problems in assessment of service quality is a methodology for measuring it. The authors propose new criteria for evaluating the efficiency of services with the help of extensive analysis and comparative evaluation of different output criteria for assessing customer satisfaction with this service. As a result of integration of different instruments for measuring the work quality of car-care center enterprises, we have achieved a system which allows conducting the most complete work quality measurement of car manufacturers' corporate network.

Key words: Service quality; Analysis; Quality estimation model; Reliability; Consumers' satisfaction; Point estimation; Car

1. Introduction

The strong competition which has formed at the car market of Russia which has been observed during the last decade is the main factor determining the necessity to develop all fields of activities of car corporations in order to provide for full-range consumers' satisfaction (Nemtsev, 2001). It is the full-range satisfaction, including estimation of the product and related services, which nowadays forms the consumers' preferences when choosing a new car (Godlevskii, 2001; Godlevskii and Yunak, 2005; Kozlovskii and Stroganov, 2013). Using this knowledge, world leading companies, as they say, diversify all basic processes of the companies that have relation to work with clients this way or another (Bowen et al., 2014; Moeller et al., 2013). For this reason the service quality is becoming the most important objective, determining the strategic perspectives of the car industry.

One of the main problems in assessing service quality is a methodology for measuring it. For several decades the problem remains relevant, as there are always a lot of new factors, which significantly affect the measurement process and its results. Only one fact: the widest dissemination of mobile technologies and Internet has significantly expanded the possibility of measuring the quality of any service. There are many different methods of measuring quality of service, which in one way or another are used by different companies in our country. The analysis of these methods, e.g. article (Godlevskii et al., 2003) shows that the main thing in this issue is to choose an appropriate one for a given particular situation and a particular type of service enterprises.

2. Materials and methods

Currently, the most popular are the following methods for measuring the quality of service:

- Method of critical cases - for the first time this method has been proposed by J. Flanagan (Flanagan, 1954) in 1954 as a psychological method for the analysis of different respondents' behavior in different situations. Several authors (Bitner et al., 1990; Edvardsson, 1992) conducted significant research to assess the applicability of this method for marketing issues, as a critical case example, focusing on the "service interaction" fact - contact between consumer and employee of a company, providing services and a degree of consumer satisfaction/

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dissatisfaction with this interaction (from the point of view of a consumer);

- Kano method - the method proposed by Japanese scientists from Tokyo Rika University, led by Professor Noriyaki Kano in 1982 (Parasuraman et al., 1985) Application of this method is based on the interview with a set of service quality characteristics and is not predetermined, but is formed in the polling process;
- SERQUAL method was developed by V.A. Zeytgaml, A. Parasuramanom and L.L. Berri (Azman and Gomiscek, 29014) in the 80's of XX century by empirical studies conducted by authors of the focus group analysis based on the developed divergence model (GAP-model). The method is based on an interview with consumers, in which respondents should specify several characteristics rating (or attributes) of a provided service, grouped by main service measurements;
- SERVPERF method was developed by J. Cronin and S. Tayler (Cronin and Taylor, 1992) based upon SERVQUAL method, which allows avoiding negative experience of differential approach on data authenticity, received in the result of applying this method. In order to achieve it, authors have excluded the consumers' expectation measurement stage from a procedure of service quality measurement. SERVPERF method only measures consumers' perception of performed service quality, when 5 service quality measurements and 22 relevant attributes are left without changes.
- INDSERV method was developed by S. Gounarisom (Gounaris, 2005) for a corporate sector, as SERQUAL and SERVPERF methods have worked adequately and efficiently enough.

Some authors also try to assess the service quality through the assessment of internal processes. For example, to assess the maturity of the organization of technical services provision process (Bob Hayes, 29013) the models based on maturity model capabilities (Capability Maturity Model) are proposed. Another study was aimed at clarifying the relationship between the efficiency of internal processes and the perceived service quality, taking into account the trade-off between the two poles – company's profitability and service quality.

Assessment of service quality is inconceivable without establishing a clear link between the perceived services quality, such as customer service in a company, and the result of the service, which is reflected in customer satisfaction, and even more desirable to an organization, customer loyalty. Nowadays, most researchers are working towards multivariate analysis according to customer satisfaction based on the provided service quality. In their study, for example, Edwin N. Torres (Chen et al., 2014) argues in favor of a more comprehensive look at the quality, in particular high consumer demand, various internal factors, as well as the expert-based sources. According to the proposed structure, which is quality-oriented service, the author is guided by the ideal expectations, performance, value perception and other detailed criteria.

It is also important to understand how each factor influences the customer satisfaction with the quality of provided service. The thing is, each new factor will change this interconnection, and this influence can be different in nature - little influence can lead only to a correction of the original model, but some factors can significantly alter this interconnection, even the emergence of a new non-linearity. In a study by Slavko Ažman & Boštjan Gomišček (Azman and Gomiscek, 2014), for instance, they studied the functional form of the relationship between service quality, customer satisfaction and loyalty, typical for companies, carrying out technical vehicles maintenance. The authors have established that non-linear model of the functional connection of perceived service quality and customer satisfaction don't show that much better results in comparison with the linear model, while the interconnection between customer satisfaction and loyalty can be described best by a nonlinear model. Thus, from our point of view, it is important not just to try taking into account all possible factors, but to build a model, considering the most important factors due to their impact on the consumer evaluation results, as it is important not to forget about the optimal ratio between resources, efficiency and reliability of the analysis results.

Apart from a problem with taking into consideration various factors, which affect the interconnection between the internal processes, the service quality and such critical indicator as customer satisfaction, there is often a problem with an immediate evaluation methodology of all interaction parameters, i.e., a specific data analysis instrument that can be used by enterprises. It is not always simple tools (charts and graphs) that can help in monitoring and analyzing data according to the results of indicators control, and the reason is that these Fig.s are very difficult to control by these instruments. In (Berger, 1992) it is proposed a fairly well-known instrument for monitoring and analysis - checklists. For each data type authors offered their assessment model that helps

company management monitor promptly service of provided quality.

3. Results and discussion

We believe that there are several important aspects of determining actuality and the prospects of service development in our country, which by no means must be left without an attention. Among them, primarily it is necessary to distinguish a relatively undeveloped instrumental work base with consumer in our country in comparison with the world standards. Indeed, the main advantage of car service of the traditional Russian car brands until now is the low cost of spare parts and carrying out proper works. However, the existing advantage will probably vanish in the near future, and a process of gradual price equalization can be observed already today. However, is it necessary to make a comparison between qualities of customer service? Rather not. Here there is an issue that the company networks of the Russian car manufactures are very unstable in providing unified standards. That means that the distance between qualitative estimations of the leaders' and outsiders' work in the branch is so big that the consumers don't equally receive the high level of satisfaction with the service quality at different enterprises of one network.

The second important argument in support of the development of car service is that generally car-service companies are, as a rule, enterprises belonging to the category of middle business with the number of personnel up to 100 persons, executing the hi-tech spectrum of services. A car-care center has all the opportunities in order to be more flexible, focus on the service efficiency and react promptly on consumers' demands appearance, unlike large and usually inert car manufacturing enterprises. This advantage should be used at implementation of the improvement programs, which are periodically conducted by all car manufacturers (Vaerenbergh et al., 2014).

The third argument is a specific criticism towards the company network of domestic car manufacturers. Until now many managers haven't change their understanding of the importance of provision of high quality work directly to consumers and relevant implementation of the technical service aspects. In many cases in Russia, the myth is still exploited that only high level of new cars sales assures the efficiency of business in this sector. Indeed, that was twenty years ago. Today the situation is different. The sequence of economic crises, in a way, is a sobering factor in the assessment of the development prospects of the car-service fields of business. Today, in order to provide for the competitive ability in the field of service it is necessary to secure a highest level of consumers' loyalty on all stages of the enterprise's operations, starting with organization of car sales and customization process through car pre-sale preparation, maintenance, repair, and ending with the full range of services under an additional guarantee, possible car sales on the secondary market and even utilization, etc.

The confirmation of the foregoing is the model of trademark estimation developed by JD Power Company (Fig. 1) for implementation of a comprehensive estimation of the car manufacturers' competitive ability. The analysis of the model shows that in modern conditions many factors of single (primary) estimation include service analogues. The service intensively penetrates deeper into the essence of car manufacturers' trademark estimation (Calabrese and Spadoni, 2013). It means that car service becomes dominant in implementation of consumers' satisfaction improvement programs of the world car industry leaders (Torres, 2014).

Actually, the contemporary service enterprises, with relatively low number of staff, good technical and information equipment, unlike large car manufacturing enterprises, usually have the possibility to respond to competitive environment changes quicker, and therefore, having a good instrument arsenal to influence consumers, service becomes an important weapon of car manufacturers on the market (Robinson and Brown, 2012).

As a proof, we don't need to invoke deep analytical researches. It will be enough to recall the big failures of a wide range of car manufacturers at the domestic market of Russia, who failed to create an efficient service system. Such car manufacturers simply left the market.

Surely, large players of the automotive market understand the importance of company service system function. Herewith, the analysis of the Russian car manufacturers' work with their own car service shows the presence of certain problems, which, unfortunately, have remained topical over a long period of time.

Thus, the aim of this paper is to analyze the problematic issues determining the development of corporate service centers in Russia, with structure design of the analytical management development system of company service automakers network to meet the main current challenges.

The scientific novelty of this work is the implementation of a single integrated quantitative and qualitative evaluation of corporate enterprise service center system,

providing a balanced approach in the management of proprietary service network and implemented through the system: regular and irregular inspections; score quantifying the enterprises' performance; evaluation of the customer satisfaction quality of work performed.

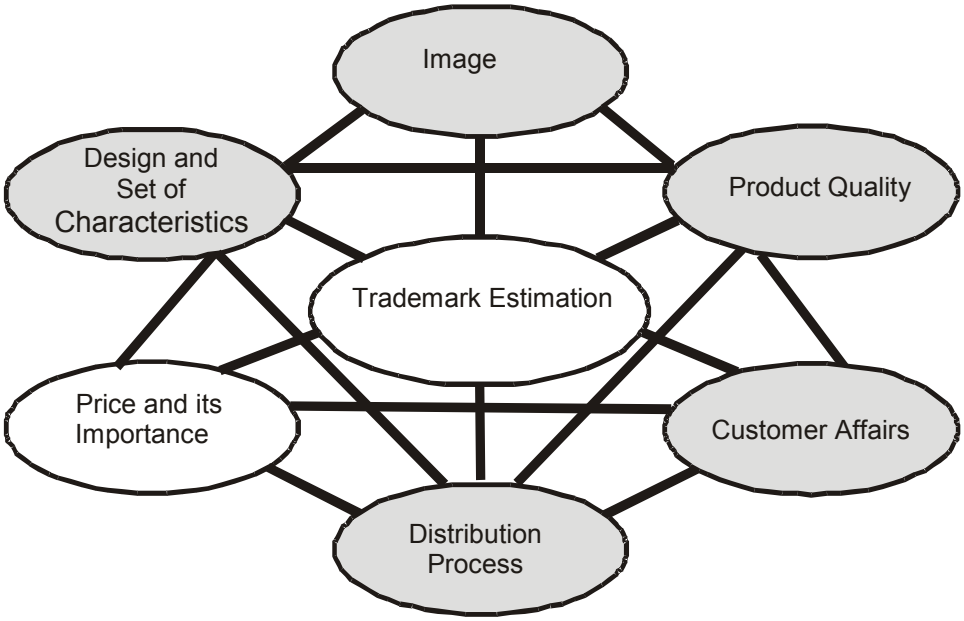

Fig. 1: Trademark Estimation Model of JD Power Company

Below is the analytical review of the materials reflecting the quality of work of traditional Russian car manufacturers' corporate networks?

In Table 1, the aggregate data reflect TOP problems of consumers' satisfaction of basic traditional Russian manufacturers. The data was obtained by means of statistical study and cross analysis of car manufacturers corporate reports on estimation of the consumers' satisfaction with cars quality and services for the period from 2010 to 2013. The analysis of data (Table 1) shows that among the most essential problems influencing the satisfaction, the problems of service are separated: quality of works; expenditures on the service. Moreover, in our opinion, in the context of line 2 of Table 1 (reliability, and frequency of failure occurrence), the topicality of the service problem has increased even more.

Table 1: TOP single factors of consumers' satisfaction with the least quantitative meaning of the estimation

Factor name	Quantitative estimation of the consumers' satisfaction
1. Quantity of the warranty maintenance	7.4
2. Reliability (frequency of failure occurrence)	7.5
3. Quality of post-warranty service	7.6
4. Expenditures on service (quantity of labor hours)	7.7
5. Noise insulation of the car	7.8
6. Cost of the spare parts	8.0
7. Expenditures connected with exploitation of the car (petrol, maintenance, expendable materials, and other expenditures)	8.2

The analysis of data received by means of another analytical instrument, Internet study of the consumers, is represented in Fig. 1. Here the current estimations of the satisfaction and expectations of the consumers in respect of three issues in per cents for the same group of car manufacturers are shown. The analysis of Fig. 1 data shows the presence of a considerable difference between the following estimations of satisfaction and estimations of consumers' expectations in respect of all distinguished issues. At that we single out the service characteristics of the service quality and price characteristics for cars as the most important ones, as while they have great importance for consumers they evidently don't have high current estimations. As opposed to the service and price, the technical characteristics of cars excessively satisfy contemporary consumers as it may be seen from the analysis in Fig. 1.

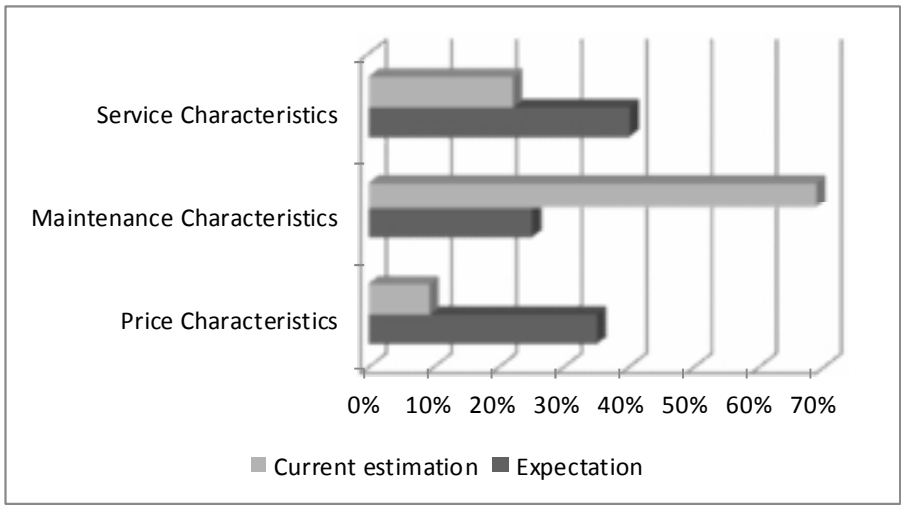

Fig. 2: Correlation between the Current Estimation of Satisfaction and Consumers' Expectations

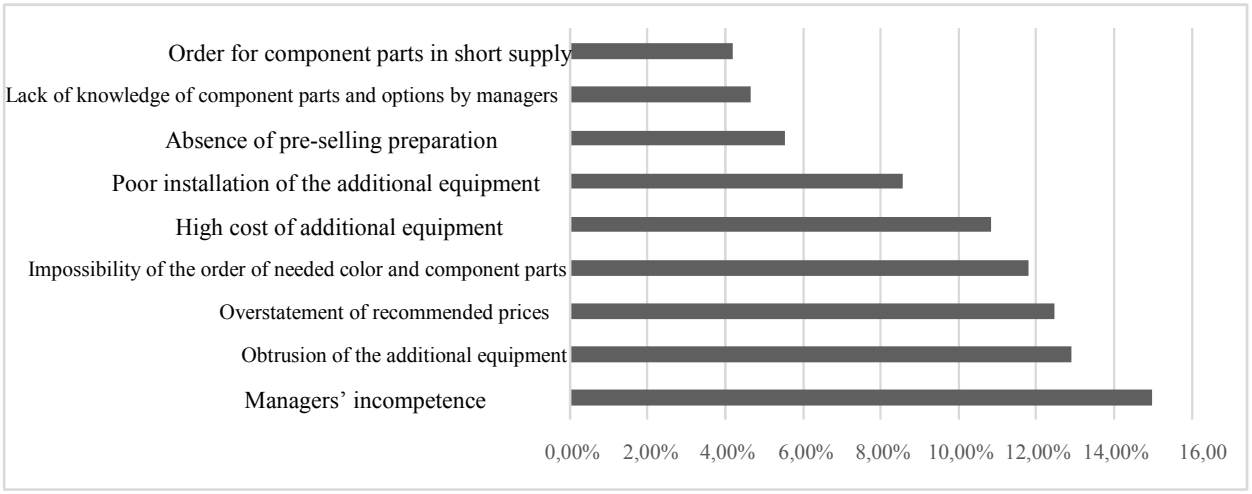

Fig. 3: Key problems of consumers' service quality during car sale

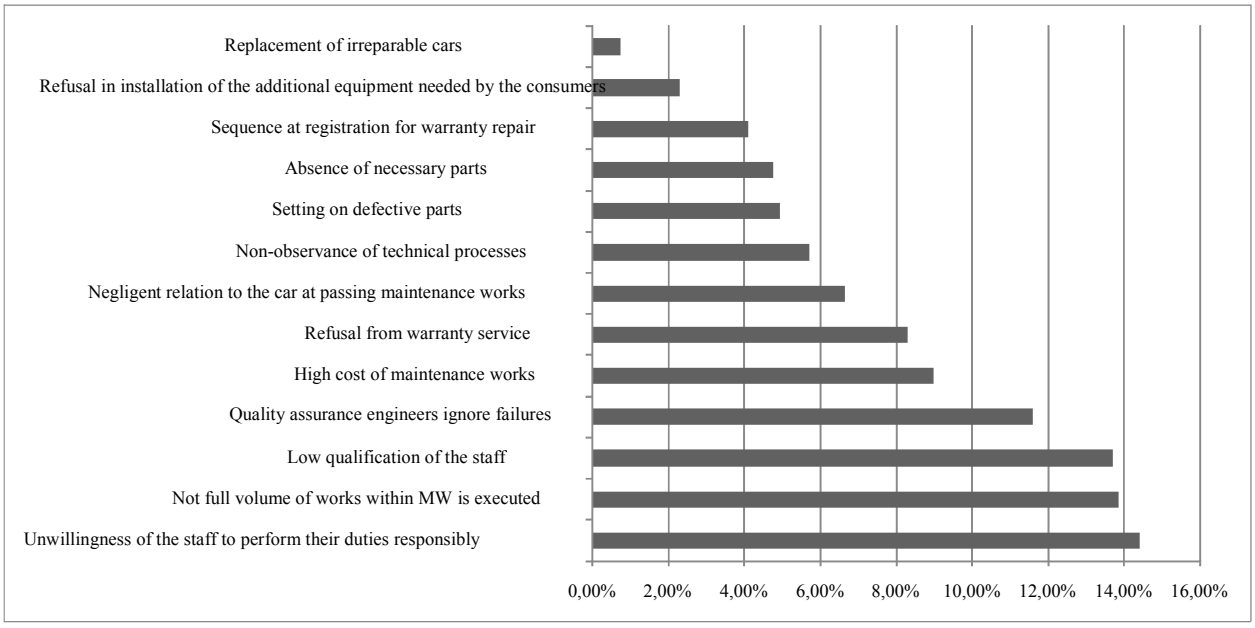

Fig. 4: Key Problems of Car Service Quality in the warranty

The data in Table 1 and Fig. 3 confirm that the problem of car service quality in Russia is one of the key problems in solving the task of increase of the competitive ability of the domestic car industry. Stratification of the data on consumers' satisfaction with the quality of service provided by corporate networks of domestic car manufacturers is represented in Fig. 3, 4. In Fig. 2, the most important issues which the consumers face when buying the new cars are shown; in Fig. 4 the problems of car

maintenance quality and repair in the warranty period of exploitation are represented. Both in the first and second cases, a significant level are measured by the percent share of the respondents who emphasized one or other problem.

The results of the analysis of working quality of largest Russian car manufacturers' company service enterprises show the presence of problems essentially influencing the consumers' satisfaction in the processes of sales and after-sales maintenance: incompetence of sales managers; unwillingness of the staff to perform their duties responsibly; hard sell of additional equipment when selling cars; non-performance of the maintenance works in full range; overstatement of the recommended prices when buying cars; low qualification of the service center staff, etc.

While reviewing the work of car service enterprises it is necessary to take into account the aspect connected with the fact that to certain extent they are independent from the car manufacturers; however, the key ability of their work lies in the support of company operating standards which are strictly determined by car manufacturers. In our opinion, there is a need for the creation of a support and management system for company car service at the enterprises of car manufacturers and adequate dynamically developed competitive environment in the service (Anisimova, 2010).

In this context we represent a summarized complex of instruments for estimation of car service enterprises quality which meet the basic challenges of the modern competitive environment and provide for the improvement of company network activity, and give car manufacturers specific instruments for measurement of consumers' satisfaction.

The complex of service enterprises' work quality estimation instruments integrate qualitative-and-quantitative service estimation measurements based on consumers' questionnaire, feedback and hotlines means, regular and irregular audits. As it is seen from the Fig. 5, the range of the instrument complex for measurements of service enterprises work quality is wide enough and covers the elements of distant analytical monitoring, as well as the elements of the direct expertise level (audit) of the organization activity.

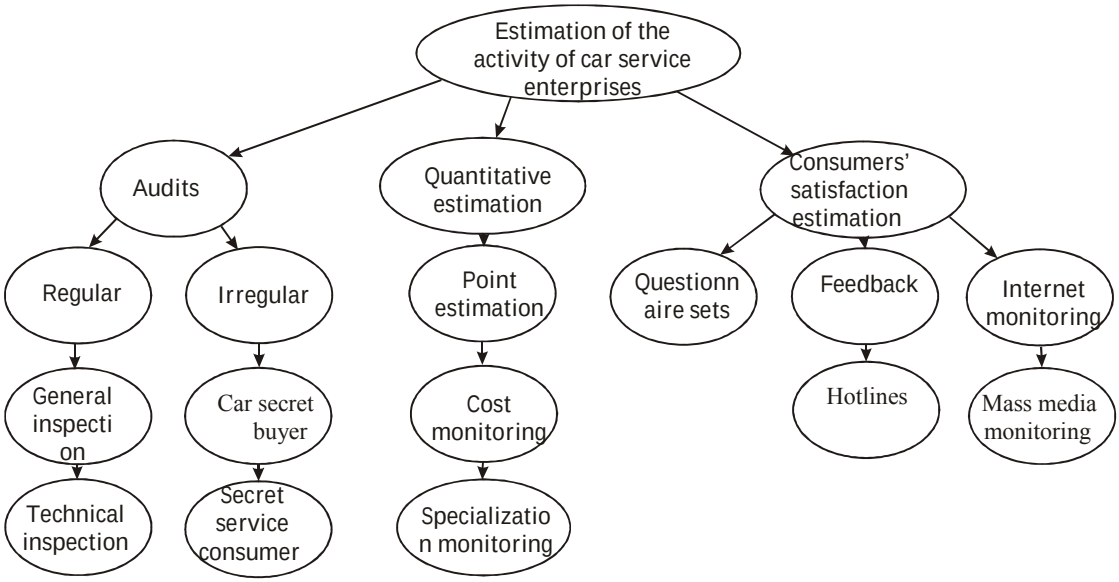

Fig. 5: The prospective complex structure for analysis of company's network work

Until recently, the audits were the basic quality analysis instruments of the service network enterprise activity. Wherein, only regular verification instruments, which cover the levels of general and technical inspection, were used.

The general inspection: The service enterprises' examinations were carried out by regional car companies. The practice of the Russian audits with the usage of this instrument lies in realization of the check list of issues covered almost all basic fields of the enterprises' activity. The check list of issues is a code of requirements which must be adhered to by the enterprises in accordance with the company standards of the car producer. The estimation of the work quality and staff qualification level, carrying out the basic processes of the enterprise, rational zoning of the enterprise, analysis of the production capacities, presence and functioning of the metrological basis, efficiency of implementation of the requirements related to corporate style – all these are key aspects for carrying out general inspection with usage of the check list of issues.

Technical inspection: It is generally carried out by the experts of the enterprises of car manufacturers. Within the verification framework, the issues of arrangement of pre-sales preparation, technical service and car repair are reviewed more properly than in the previous case.

Irregular audits: Recently, the irregular verifications instrument steadily entered into the practice of the largest world car manufacturers. In other words, it is called the "secret buyer"

instrument. The essence of this instrument is determined by the estimation of enterprise service work quality and carried out on the secret verification basis and is conducted either by the own expert of a car manufacturer enterprise, or by an independent company expert providing relevant services. It should be noticed that such verification is an extremely efficient instrument. However, as any other form of inspection, irregular audits must be properly planned, and, preferably, implemented within specific frameworks of expert work verification scenario at the enterprise. For instance, it is possible to plan work in car sales or diagnostic works departments at the car technical service site.

Summarizing the intermediary result within the frame of primary analysis of service enterprises audit instruments range it is possible to make a conclusion that there is a wide arsenal of such instruments. In spite of some "fashionable trends" connected with conducting irregular inspections, in our opinion, it is necessary to use both regular and irregular levels of verifications in order to provide for the best results of the service enterprises' work quality.

Let us pass on to the quantitative estimation instruments of the quality of enterprise service activity. These instruments provide possibility for car manufacturers to conduct enterprise work quality estimation distantly according to the volumes of accessible information submitted in the corporate center through different channels, but first of all through the centralized information accounting systems: on execution of warranty, financial and other indicators.

The score system of enterprise service activity: Historically, this instrument is further development and extension of the estimation system of car component suppliers' activity. In this case, there is a certain emphasis shift towards the service suppliers. In other words, suppliers' estimation is considered in the first and second case for car manufacturers. However, on the one hand, it is the suppliers of components who are important, and on the other hand, the providers of high-tech services. Basically, taking into account the specific importance of the first and second estimation element, it is possible to speak about the equivalence and equivalency for car manufacturers of the efficiency of these instruments in the process of management. Another important argument for the car enterprises service estimation system is that usually a considerable quantity of enterprises forming the constituent company network of car manufacturers requires organization and conduction of systematic work quality estimation. In circumstances when enterprises are allocated across large geographical territories, it is impossible to adjust the control system only with the help of the audit system. This is why the score estimation system is an important instrument of work quality evaluation.

The expenses monitoring can be considered as a component of the score estimation, but we recommend using this instrument separately (Eisingerich et al., 2014). Historically, traditional Russian car trademarks are oriented at a budget market segment. Naturally, it influences the general quantity of products, and first of all it requires support of the car exploitation efficiency through realization necessary for the maintenance and repair to full extent. Accordingly, the division of exploitation expenditures into those on materials, spares parts, and also on manpower resources provides the required possibilities for the monitoring process. It is necessary to lay the main emphasis on the implementation of the expenditure analytical monitoring task in the field of warranty analysis. The indicators of the average-level expenditures stated per one advertised car, and also the "specialization" of the enterprises in elimination of certain types of defects, is of the greatest interest for car manufacturers. Generally, the analysis of "specialization" can be also regarded as a separate instrument that shows deviations of usually small number of non-qualified enterprises, which are busy with writing in the defects into the warranty acts, as a rule with high labor capacity of elimination and not requiring the expensive spare parts.

Estimating the consumers' satisfaction is a comparatively new complex of enterprises' activities estimation of a company network. It is represented by aggregate instruments of satisfaction questionnaire researches, analytical monitoring of the feedback systems with consumers and hotlines, as well as the realization of information deep analysis instruments from the Internet and mass media (MASS MEDIA).

Questionnaire sets. We allow ourselves naming this instrument to be the most essential. Nowadays, the fusion of marketing instruments and the instruments of quality management in the field of quality management processes development is observed. Indeed, in order to implement the ISO 9001 principle "Customer Focus", the best choice is to ask a consumer what satisfies him/her and what dissatisfies and what should be done for improvement of the organization of cars sales service and of post-sale service.

Questionnaire sets combine the means of measurement and analytical instruments for obtained data analysis. Today, comprehensive programs of works on the research of consumers' satisfaction are connected with the service quality management by means of questionnaires on paper, Internet questionnaires, as well as inquiries by phone (Sharabi, 2014).

Consumers' feedback system through companies' corporate sites has been already known for a long time. However, as an analytical instrument of satisfaction measuring, the system has been used only in the last five years. The feedback from the consumers in companies, as a rule, is classified to a few basic fields determining subjects of questions, among which are certainly selected ones related to organization of the car sales and service process.

The instruments of hotlines, realized on the basis of data and submitted from the clients by phone, are

built into a corporate management system of car manufacturers with the purpose to identify gross mistakes in realization of the processes directly influencing the consumers' satisfaction. Currently, additional branches of the general task are being actively developed: consultations, recommendations, etc. On the basis of the accumulated data, based on complaints and suggestions submitted through hotlines, analytical instruments of information treatment with the selection of the most meaningful items of satisfaction are developed.

A new instrument of researches is monitoring the Internet which is realized by the leaders of car industry through the researches of car forums, social media, etc. Social and professional groups uniting into networks provide for a constant flow of important information. The group participants discuss almost all range of issues of interest for car manufacturers. Naturally, such discussions of technical aspects or service issues, for example, by the consumer community, create preconditions for realization of the methodology of quantitative and qualitative research of the corresponding information.

MASS-MEDIA monitoring: The instrument representing the value of analytical services for car manufacturers enterprises, from the point of view of service enterprises work quality level estimation by expert groups of journalists. Indeed, lately an active work on car service quality estimation is conducted by the journalistic community. This work is performed using the following methodologies: secret car buyer or secret service client. As we understand, the basic difference between the inspections conducted by the enterprises of car manufacturers and by journalists is that the results of inspections in the last case are disclosed through mass media, and that means they have a significant influence on the reader's environment.

Implementation of the developed comprehensive assessment of a corporate service center quality is a promising task that creates the preconditions for transition of the management of development of corporate service networks of Russian automakers to a new level and provides for improvement of the completeness and accuracy of information on the implementation of firm commitment on the part of manufacturers.

The world practice of evaluating the performance of the company network companies is mainly associated with the implementation of evaluation approach through the definition of customer satisfaction. In this context, the following instruments are used: personal sets, irregular audits and customer feedback. Naturally, the enrichment of corporate quality management systems, new tools proposed in this paper, provide for improved processes related to the activities of the automakers' company network.

4. Conclusion

As a result of integration of different instruments for work quality measuring of car-care center enterprises, we have a complex that allows conducting the most complete work quality measuring of car manufacturers' company network. It should be mentioned that the complex contains a considerable quantity of instruments and it seems that it is difficult to represent that in car corporations such scope of measurement within a single process or service work quality estimation must function. However, our experience in this issue shows that the structure represented in Fig. 3 is justified by the necessity of conduction of a systematic and proper analysis of the service work quality as one of the most important fields of activity of car corporations. Another thing is that the system must be balanced and have an adequate response to the changes of estimations in the work of enterprises, and also work without defects in terms of constant and unrelenting pressure on car service enterprises. The system must help both the manager and the subordinate chain to determine the key aspects influencing the quality assessment and consumers' satisfaction.

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