

TQM IN THE MOTOR VEHICLE SERVICE

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ABSTRACT: TQM is the approach for improvement of competitiveness, efficiency and flexibility of the entire company. It is the necessary mode of planning, organizing and understanding of each activity, depending upon each individual at each level in the company. The paper presents experience in implementation of Standard series ISO 9000ff, 14000ff and 17000ff to TQM in the automobile service center. The research was conducted in the company that possesses ISO certificates. Presented was the possibility of TQM implementation in the company. TQM in service centers can be observed as an opportunity for fundamental improvement of business functions and processes within the service, with the purpose of providing services and improving business results.

KEYWORDS: TQM, quality, ISO standards, business excellence, efficiency, flexibility, improvement

INTRODUCTION

Since their development and acceptance, Standards series ISO 9000ff have found wide application worldwide, foremost in the automobile industry. This success of the Standards can be explained by the universality and applicability in almost all actions of human activity in automobile industry, with special emphasis in motor vehicle service. In order to satisfy customer demands in motor vehicle service, it is necessary to implement and maintain quality management system series ISO 9000ff, ISO 17000ff, ISO 14000ff, ISO 18000ff, as well as other standards in connection with automobile industry. Implementation of these standards creates the firm foundation for TQM. Permanent education and staff training in motor vehicle service, especially within the framework of integrated quality system implementation according to the standard requirements, are the most important attributes for the successful functioning of the company and protection of staff and environment [6].

QUALITY IN THE MOTOR VEHICLE SERVICE

Integrated quality management system series ISO 9000ff, ISO 14000ff and ISO 18000ff was introduced by a small number of organizations in Bosnia and Herzegovina, in relation to the number required for the EU (European Union) accession. Most companies in Bosnia and Herzegovina decide upon implementation of the quality management system ISO 9000ff. Thus far, about 1200 of these organizations have been certified. Organizations that have introduced quality management system most often opt for the recertification by the same standard, whereas 30% of organizations integrate their system with other standards. Organizations that implement integrated system follow the path to TQM. In the automobile industry, and therefore in motor vehicle services authorized by the parent organizations, this kind of approach is highly advisable. With authorized services

the application of the basic common elements of the TQM model is evident, which demonstrates the ability to satisfy customer demands and desired work results.

With TQM the key common elements are the following: management determination, organization policy and strategy, staff engagement, resource allocation, process management, customer and user satisfaction, positive influence on the society and reached improvement level and business success.

Authorized motor vehicle services need to create their own quality philosophies, through the analysis of the development and creation of the superior characteristics for the successful service management. The basic notion of this philosophy is that the improvement of the motor vehicle service quality and customer satisfaction has to be the final objective of every manager's work. Especially interesting is the point of view of Tom Peters regarding the position and role of quality manager, particularly in regard to the future of the organization [3].

Through the implementation of integrated quality management system Twelve Golden Rules of Claus Moller should be implemented:

- set personal quality goals,
- establish your own personal quality account,
- check how satisfied other are with your efforts,
- regard the next link as a valued customer,
- avoid errors,
- perform task more effectively,
- utilize resources well,
- be committed,
- learn to finish what you started – strengthen your self-discipline,
- control your stress,
- be ethical – maintain you integrity, and
- demand quality.

According to Claus Moller, in order to increase the quality of any organization, including the automobile industry, it is necessary to identify seventeen basic quality hallmarks of the organization:

- focus on quality development,
- management participation in the quality process,
- satisfied customers / users,
- committed employees,
- long-term quality development,
- clearly-defined quality goals,
- quality performance rewarded,
- quality control perceived positively,
- next person in work process is a valued customer,
- investments in personnel training and development,
- prevention and reduction of mistakes,
- appropriate decision level,
- direct route to end users,
- emphasis on both technical and human quality,
- company actions directed towards customers needs
- ongoing value analysis, and
- company recognition of its role in society.

Through the seventeen quality hallmarks Moller has once again emphasized what his predecessors have already defined: either of the quality guru has missed the opportunity to offer one or two rule blocks that ensure successful quality system implementation. During the process, practically the same recommendations and, in fact the same quality philosophy, is interwoven always and at all points [3]. In order for service to be efficient each of its parts has to work together in a suitable manner. Each activity and each employee in the organization has an influence on it, as well as others. The procedure of the quality management system implementation is almost identical for all types and sizes of the motor vehicle service.

Evidently, there also exist significant differences in the technological solutions of certain quality system problems and TQM considerations that can be different from service to service. Unified systematic solutions are desirable, which, due to former experience, lead to shortening of the implementation deadlines.

In order for the organization to be managed efficiently, it is important to operate it in systematic and visible manner. Management guidelines are based on eight quality management principles whose acceptance facilitate quality objectives and lead the organization towards improving performances, always having in mind the needs of the interested parties. Principles of quality management are: customer orientation, leadership, involvement of people, process approach, system approach to

management, continual improvement, factual approach decisions making, mutually beneficial supplier relationship [1,2].

REALIZATION OF MOTOR VEHICLE SERVICING – PLANNING OF MOTOR VEHICLE SERVICING REALIZATION

Heads of the main processes plan the realization of main processes with the purpose of satisfying customer demands, as well as environment and health protection, and employee safety, regarding:

- programs and resources for planned business activities realization,
- performances, objectives and quality,
- acceptability criteria, and
- monitoring and measuring the achieved planned activities.

During the planning of service realization, the following data and demands are taken into consideration:

- defined annual quality objectives,
- internal demands for improvement process, and
- customer demands and expectations.

In cases when customer demands are beyond our current possibilities/capabilities, needs and abilities of new process establishment are reviewed, i.e. engagement of other competent organizations. When part of business activities is assigned to other organization, our special control over these activities (processes) is planned, and it implies:

- careful assessment and supplier selection,
- application of our specific documents (procedures instructions, plans of control/testing, etc.), as applied during the realization process,
- ensuring suitable proofs/records of compliance of realized business activities with our specifications.

When the customer demands, or when we deem necessary, we create the control plan/quality plan.

PROCESSES IN RELATION TO CUSTOMER

Demands in relation to service are established through the process of market exploration, customer needs, and bidding and contracting process. Through the process activities, among other, established are:

- customer needs and demands,
- demands of relevant regulations / provisions and other specific external documents in relation to service,
- demands that customer has not specified, but is necessary for complete specification of demand, that is customer needs.

Responsibility for determining these demands lies on the manager and heads of the processes of the motor vehicle service, as required.

Prior to delivering customer offers, we implement review of the established specified demands for the service, and all other specific demands for service realization. Persons participating in the review are:

manager, heads of the processes, heads of the procurement process, and other employees, as required. The goal of this review is further analysis and validation:

- that all relevant demands are fully determined and documented,
- that all relevant demands are fully understood,
- that all necessary pre-conditions for the realization of the service are secured.

Demand review and our willingness to fulfill the demand is additionally conducted after receiving orders, that is, by determining contract proposal for verifying if there are possible differences in regard to offer, and if extra information for understanding and accepting the offer are clear and needed. This review is conducted in the same procedure as the bidding stage, and with the participation of all employees. Records of the review results are clearly kept and maintained.

When there is a need for change of the accepted order/contract, it is solved in the identical manner as their first version, with records of the accepted changes maintained, and (if needed) all employees are informed.

Adequate communication methods with customers and market are established and effectively applied, in terms of timely and complete understanding the customer demands, especially when considering feedback from customers, including the complaints and dissatisfaction on any basis. In that we use different shapes of communication, such as:

- direct continual contacts (oral, phone, e-mail) during realization period of contracts/orders, i.e. solving
- any customer queries,
- flyers and other methods of presentation of organization possibilities,
- special meetings and deals with customers,
- participation in conferences and symposiums, etc.

During the service realization for our customer, he always knows the person and the mean of communication in order to acquire all necessary information about the current state (phase) of the service realization.

PROCUREMENT

In order to achieve reliable and efficient realization of the commitments from our customers, special attention is given to process of material and spare parts procurement process, which are necessary for service realization. During the procurement process we always strive to operate (cooperate) with confirmed suppliers, based on principle of partnership and mutually beneficial long-term cooperation. Heads of the process are responsible for the clear and unequivocal specification of service, always having in

mind the quality. Procurement process is implemented by the manager of the material-technical service, with prior ensured approval by the head manager or technical manager. He is responsible for the review of the adequacy and completeness of supply specification, before delivering it to the supplier.

Procurement process is effectively completed when the supplied materials, spare parts and supporting documentation are verified by the person responsible for qualitative and quantitative acceptance. Qualitative and quantitative acceptance is conducted by the process manager, or the person appointed by the manager, unless otherwise decided by the head manager. In case the delivery is different in any element from the procurement demand, an adequate claim record is established, which is further managed by the head of the material-technical service in the contact with the supplier.

REALIZATION OF MOTOR VEHICLE SERVICING

Realization of motor vehicles servicing is conducted in controlled conditions as planned and defined with corresponding documents, with established resources, responsibilities and deadlines. It is achieved through the established organizational structure, i.e. established regulated processes and sub-processes using:

- corresponding technical-technological and operational documentation,
- established dynamic plans and corresponding responsibilities,
- quality system documents,
- adjustable service and other infrastructural capacities,
- manufacturing instructions for usage, machinery and materials,
- monitoring of the process, operational controls, measuring and testing,
- final control and verification of the provided services, with clear recognition of the people that verified the incorporated quality of individual phases, as well as complete process.
- continual cooperation and communication with customer representatives,
- quality plan, when implemented.

Defined realization phases can start only when all necessary preparations have previously been conducted and with ensured controlled conditions, for which heads of the individual service realization processes are responsible. The stated realization phase cannot start prior to adequate verification of the previous phase.

Verification results are noted in the prescribed operational documents, which are maintained according to the defined record management

procedure. In case of any service inconsistencies, it should be noted and solved according to the procedure – control of inconsistent services.

Permission for letting service in the next phase that is, giving the service to customer is given by the head of the realization process, or the person appointed by him. In case when customer appoints his representative for continual monitoring of the contracted work realization, a correct cooperation is established with the mutual benefit.

VALIDATION OF SERVICE REALIZATION PROCESS: Motor vehicle servicing process, whose results cannot be verified with subsequent monitoring and measuring, where subsequent testing demand destruction or damage of the product or where negative quality testing results create significant subsequent costs of repair or rejection of larger amount of finished products, is subject to corresponding validation process according to the established engagements of the head of the process, that is, adequate technically competent staff. In most cases this implies:

- usage and continual maintenance of adequate technological equipment,
- usage and maintenance of adequate control-measuring and testing equipment,
- ensuring adequate competent operational staff,
- continual monitoring of the established working activities implementation.

Adequate records are maintained about the implemented validation procedures.

IDENTIFICATION AND TRACEABILITY: Generally, identification and traceability of services are ensured, regardless of the fact whether it is customer demand or not. Traceability is ensured with unique identification of all operational documents and records, which originate from realized contracted works.

All mentioned documents have identification number of the contract/order, by which the services are realized. In this way relation of realized services with corresponding commercial & technical documentation is ensured. Simultaneously, ensured is also recognized service status during the period of storage, realization and transfer, as well as persons responsible for realization of individual phases and activities.

CUSTOMER PROPERTY: In the case when customer is giving us his own property (motor vehicle, material, technical documentation, etc.) with the purpose of realizing contracted works, we treat it with the attention as if it is personal property. During the taking over of property required is implementation of quantitative and qualitative acceptance, followed by a corresponding written record. When it is established that delivered property does not correspond to planned purpose, the customer is informed, and the property is treated in accordance with the procedure

– control of inconsistent product. Employees in the motor vehicle service consider trade secret all relevant data in relation to realization of the contract and/or obtained by the customer, and will not dispose them under any circumstances to third parties, except with the approval by the customer.

STORAGE OF SPARE PARTS: In order to preserve the product quality, raw materials or spare parts, we especially plan and undertake all necessary measures such as marking, packaging, transport and storage. Employees in the processes of storage, transport, realization and control, that is, quality testing, are responsible for the implementation of the established procedures for quality protection, as long as all products, raw materials or spare parts are under their supervision.

MONITORING AND MEASURING TOOLS CONTROL

In order to ensure service realization in controlled conditions, we especially plan monitoring, measuring and testing activities. In this regard, we continually plan and ensure certain tools for these activities, in order to enable accurate, precise and reliable proofs of compliance of services with specified customer demands, i.e. our own criteria. When special demands are in question, special measuring/testing technology is stipulated, and special quality plans. According to outlined decisions, the procedure of storage, maintenance and treatment with monitoring and measuring tools is established, that implies:

- unequivocal and clear identification of equipment and its current status,
- responsibility for planning and up-to-date calibration implementation,
- insurance/protection from physical damage, and negative influence of micro-climate conditions in which equipment is stored,
- application of occasional tool self-assessment methods, where applicable.

Users of monitoring, measuring and testing tools cannot use the tools with expired calibration term, or if noticed any kind of irregularity/damage. In case of irregularities of the measuring tools after service delivery to the customer or letting service to the next realization stage, these kind of services are examined again and necessary action are taken. For monitoring and efficient application of described procedure, the head of the realization process if responsible, during which adequate equipment for monitoring and measurement is used [4].

CONCLUSIONS

TQM implementation creates a series of clear advantages: increases responsibility, particularly in public relations and public media, supports integrated demands of ISO standards, acquires significant advantages when reaching to new markets and

maintaining old customers, ensures easier implementation of risk management prevents the possibility of environment damages, reduces organization insurance rates in case of incident. According to all existing predictions the development of all world TQM models is directed to the kind of form that would enable achieving business excellence in automobile industry. Development of theory and practice of modern quality is practically impossible without clear insight into the historical and spatial development of basic TQM models [5].

Excellence presents dynamic objective whose coordinates are identical to the coordinates of organizations' individual parameters that can be marked as the best world practice in class.

TQM uses the combination of two basic methods for excellence objectives determination and establishing continual improvement process and innovations to achieve these objectives:

- benchmarking for determination of competition performances and best world practice in class, which can be defined as the organization's excellence objectives and comparison to it, as the best way for inciting and achieving own efforts and results,
- self-assessment for determination of activities and results in achieving excellence level which relate to selected model and areas in which improvements and innovations can be conducted, as well as planning of improvement and innovation measures whose progress is considered in long-term manner [7].

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