

Post-Sale Customer Support Methodology in the TQM System

Elizabeta Mitreva, Nako Taskov, Darko Barishic

Abstract

In this paper a survey of the activities in the post-sale period of the product is made and based on the analysis of the results, a methodology that managers could use to design and implement the system of total quality management has been created. The implementation of this methodology is carried out in a simplified way and in less time, without having to study and deepen new knowledge for internal standardization, statistical process control, cost analysis and optimization of business processes. The purpose of this paper is to lay a good foundation for Macedonian companies in their post-sale period activities of the product, to understand the philosophy of TQM (Total Quality Management) and benefits will be achieved by implementing the system and setting strategic directions for success. These activities begin by identifying the wishes and needs of customers/users, reengineering business processes for sales support, satisfaction of employees and all stakeholders. As a result of the implementation of this methodology in practice, improved competitiveness, increased efficiency, reduction of quality costs and increased productivity are noted.

The methodology proposed in this paper brings together all the activities in the spiral of quality in a company that deals with post-sales support.

Due to the necessity of flow of information about quality in the entire enterprise, an information system is designed accordingly to the QC-CE-Pyramid model in several steps.

Keywords: Sales Support, the Philosophy of TQM, Wishes and Needs of Customers/Users

1. Post sales period

After purchasing the product, the buyer/user will experience some level of satisfaction or dissatisfaction, depending on whether the product met its expectations. The work of the company or the marketing experts does not end with the act of buying (Latzko and Saunders, 1995). Marketing experts have to measure satisfaction, measure the impressions of users that use the product after buying in. During the rapid growth of information technology it is very important to have loyal customers who trust and rely on brand selection and to achieve that, the company must constantly measure customer satisfaction, as well as all the factors that influence it (Mitreva, 2013).

1.1. The behavior of buyers after the purchase of the product

The customer oriented company must have information about their clients' wishes and needs that are constantly changing; to be followed by all global trends analyzes using different approaches and models. Some organizations can identify customer satisfaction through interviews, surveys or observation of consumer's behavior during and after the purchase (Ciampa, 2005).

Some companies practice a detailed discussion on the basis of questionnaires to draw perceptions of customers in order to learn about their emotions. Every company should define the best method for collecting data in accordance with the nature of the research, its conditions and available means for communication of the company with customers in sales, resulting with less reclamation and lesser product orders cancellations (Kratsu, 1995).

Today companies are distinguished from one another by climate created for the new approach to quality, through clearly defined duties and responsibilities of employees, organizing teamwork, application of

statistical process control for non-defect operation and permanent education.

Post sales period includes the following elements:

- post-sales support;
- guarantee conditions;
- procedure for returning the product or service / replacement of defective products;
- technical support.

1.1.1. Post-sales support

Post-sales support includes the following elements (Dale and Lascelles, 2007):

- guidelines for the user how to use the product (the first to include maintenance of the product); configuring support according to the customer needs (the obligation of the seller is to direct the user's needs in order to satisfy the customers need for a particular product);
- laboratory testing (testing the product or examinations carried out before it is put on sale);
- diagnosis and resolution of problems relating to the product (to diagnose where the problems arise and to see how they can be removed);
- services for the removal of products under warranty conditions (for each product that is legally imported into the country, the importer must provide the service center and spare parts, and if the product cannot be serviced within the legal deadline, the importer must replace it with a new one, according to the legal regulations);
- consultations and recommendations for upgrading the product (technical product support with the opportunity to offer additional options for improving its performance).

1.1.1.1. Terms of warranty

Warranty terms of products / services in Macedonia are legally defined by the *warranty period servicing equipment law*. Each vendor in the buying process must provide sufficient information to the buyer/user about the quality and performance of the device or service and to issue certified warranty sheet with invoice or fiscal receipt (Woodall and Winstanley 1998). If during the warranty period there is a malfunction of the product, the customer or end user can call the service with valid

documents for servicing the device. If this happened in the first 15 days of purchase of the product, the customer can return the device and request a refund or exchange for a new one. The service must make repairs within 30 days and the period for which the device is kept in service has extended warranty. The service may make repairs to the device three times during the warranty period. If there is a need for a fourth time, then the client can request the device to be replaced for new or similar one. Yet, here it is important to note that the service does not perform replacement, but the importer of the device does, while the repair service should prepare documentation that the same device has been serviced three times and the same should be repaired a fourth time. If the device cannot be repaired then it should be replaced with a new one, but the replacement should not exceed 90 days from the date the unit is shipped for service.

1.1.1.2 Duration of warranty

For certain products the warranty period can be found on the original product packaging, the warranty, the product catalog or on official websites of the manufacturer.

1.2. Procedure for returning the product or service / replacement of defective products

To bring a product to the repair service there should be a specific reason, the most common being:

- malfunctioning of the product;
- unsatisfactory performance (the buyer can return the product within 15 days, and the service must check the technical regularity of the product);
- weak interest of buyers for the product which is returned to the repair service where its condition is determined, an analysis is made and the price of the product is determined.

The return flow of products due to low interest by buyers is determined by the condition of the device (whether it is damaged or it has some defect), followed by a commercial information service for the device. The commercial service determines the price at which the return is approved and whether that product will go on discount sale or on regular sale (Kano, 1996).

2. Research and analysis of results

In this paper, a research on activities in the period of post-sale product of company engaged in distribution of IT equipment and consumables for computers and offices in the Macedonian and foreign market is made.

Although the quality offered by a company can be confirmed and acquired internationally by the quality certificate according to ISO 9001:2008, which simultaneously allows a recognizable image of Macedonian and international IT market, research showed large gaps in terms of design and implementation of business processes. The implementation of the existing standard operating procedure for repair servicing the devices showed a series of shortcomings as a result of poor governance in the application of methods and techniques for non-defect operations by the staff.

In theory and practice, there are different methods and techniques for non-defect operations that could be applied as follows (Sasaoka, 1995):

- methods for detecting where most (percentage) defects occur;
- methods to detect the reasons for creating the defects;
- methods for monitoring the process;
- methods for the decision making;
- methods for evaluating the stability and capability of the processes;
- methods for assessing the reliability between properties;
- methods for assessment of the dispersion of the characteristics and more.

Some of these methods have been applied in the company in terms of number of defects, the stability of the machines, the reasons for creating defects and variations etc. (Mitreva and Filiposki, 2012a). Dissatisfaction among users is measured based on questionnaires and direct contacts in a period of three weeks. Some of the methods and techniques that were applied are: Pareto approach for detection of operations where the highest percentage of occurring irregularities is found, CE diagram to detect the causes that lead to higher costs.

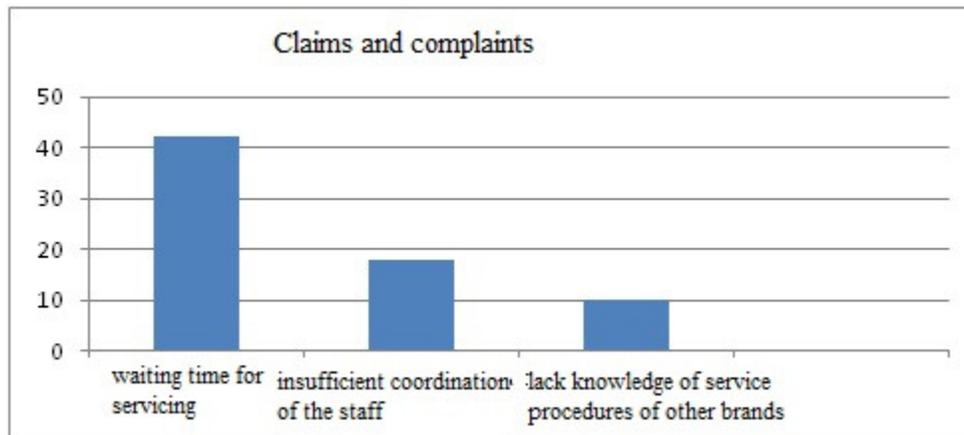
Analysis of the costs based on complaints, claims and losses mean money, extra commitment, additional costs for labor and raw materials and poor quality. Knowledge of the methods and techniques for non-defect production and analysis of costs and quality will enable the company to

reduce them, which will increase its reputation in the market due to competitive prices and good reputation.

After summarizing the results of the survey, the three problems have emerged which have created dissatisfaction among most users: (Fig. 1)

- a) waiting time for servicing the device;
- b) insufficient coordination of staff;
- c) lack of service procedures for other brands.

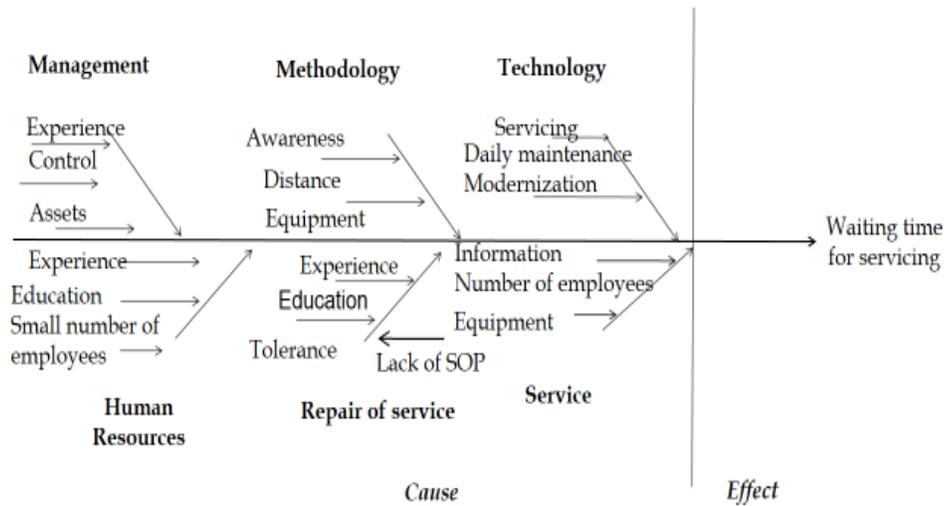
Figure 1: Pareto diagram based on reclamations, appeals and complaints



Source: Pakom Company – service, Macedonia

By analyzing the operations that give the most complaints, irregularities that cause defects should be removed. They can arise from various factors: man related, machines, tools etc. In order to determine the reasons for the losses caused by the reclamation of service parts, an Ishikawa diagram is used (Ishikawa, 1995), Fig.2.

Figure 2: CE diagram to detect the causes that lead to higher costs



Source: Pakom Company – service, Macedonia

One of the biggest causes of delays, complaints and dissatisfaction is the time required for servicing the devices.

From the results, it can be concluded that in order to improve the service the company is required to create a methodology that managers could use and implement to the system with total quality management in a simplified manner and in less time, without having to study and deepen new knowledge of internal standardization, statistical process control, cost analysis and optimization of the business processes (Mitreva and Filiposki, 2012b).

This paper proposes a methodology for standard operating business procedure for returning the product or service / replacement of defective products.

3. Methodology for after sales support to customers in the TQM system

The methodology goes through the 6 steps of activities that take place in a certain order reviving the PDCA (Plan, Do, Control, Act) - the circle of quality planning to build the necessary input and output documents of business processes (Mitreva and Filiposki, 2012b).

The business process service follows the standard operating procedure (SOP) through the following steps:

3.1. Carrying the device to the service

The flow of products to the repair service follows the standard operating procedure and by making records - forms. As additional documentation, the vendor or end user is required to submit a complete warranty. Every product that comes in service must have a working account affixed at the side of the product. This product is brought to shelves reserved for devices that are waiting to be taken by the service to perform diagnostics. The implementation of work orders are done according to the "FIFO" (First In, First Out) method. Setting priorities on devices in order to improve customer satisfaction as customer service and dealer service is possible. Priority may be given at the reception of the device and during the service procedure if necessary.

3.2. Setting priority when receiving the device

Each device that comes in regular service procedure is given priority 3 (three). Devices with priority 3 (three), should be diagnosed within 3 - 5 working days. If the device is brought to the service for the second time is assigned priority 2 (two). This means that you need to perform diagnostics in a shorter period than anticipated i.e. 1-2 work days. If the device comes to service a third time or there are special requirements (CARE PACK) or is applied to areas where intervention is urgent (servers, UPS, etc.) the device is given priority "1 (one) " and, if possible, it is diagnosed on the spot. Each device with priority 1 (one) is immediately diagnosed.

3.3. Setting priorities during the service procedure, i.e. modification of already given priority

If for any reason the employee in the service stated that a device should have a change of the default priority, in consultation with the manager of the service that can also be done. Some of the reasons may be:

- delay the replacement part, which would exceed the maximum allowed servicing period of 30 days;
- adjustment to the delivery schedule of the logistics service;
- new unexpected conditions.

Each servicer is obliged to comply with the criteria for setting priorities in order to raise the level of satisfaction among users of the service.

3.4. Repair of devices (a rule that must be strictly observed)

Resolving the problem of every device should be as soon as possible except for devices that are waiting for the spare part or have complex defect removing procedure. Once the device is diagnosed, the service is obliged to inform the buyer what the problem with the device is and how long it takes to complete the work order. The device is then assigned the status - "waiting parts".

What does status - waiting parts mean: After the diagnosis, if it is necessary to order a spare part the consumer should be immediately informed (by telephone or via e-mail) that the diagnosis is completed and order have been made for the necessary part and the time it takes to receive the part should be noted. Presenting slightly longer timeframe than required and hence shorter repair is recommended and should result in customer satisfaction.

Once the part arrives it goes into the next stage of solving the service protocol and it is called "fixed". The Service Provider through the IT system generates a receipt for the part he needs, pulls the part of the system, installs the part, and tests it. If the testing results show that the device is working properly, it is put on the shelf for deployment and notification is given to the end user or customer that he can take the device.

What does status - fixed mean: Immediately after the repair, the customer should be informed (by telephone or via e-mail) that the service account is closed and the device can be picked-up in person or will be delivered through service logistics. The service should consider the delivery schedule of logistics and the warehouse, to give priority to devices that can be immediately or as soon as possible delivered to end users. Complaints devices with monetary value under 900 DENAR must be brought with a receipt of sales. These devices don't go through the servicing process, it is only noted that the device is defective and is replaced with a new one.

3.5. Serviced devices

When granting the repaired device, the customer or end user comes to claim the unit with a work order that was issued during the reception and evaluation of the satisfaction / dissatisfaction with the service performed.

The logistics service issues two documents (one for the user who will receive the device, and the other is signed and sent back to the service). For the smooth execution of SOP entries for the quality of reception order, service order, receipt and acceptance are left.

3.6. Technical support

The company must be equipped with special technical support services to its customers in respect of all outstanding issues related to the functionality of products, availability of necessary spare parts, as well as the presence of professionals who have the knowledge and experience to provide the necessary information and perform different interventions at any time depending on the needs and requirements.

In the recent years, the company introduced 24 hours online support to its customers and regularly updates their official websites where customers, clients or end users can inform themselves about the product.

The application of this methodology for internal standardization, methods and techniques for non-defect works in practice enabled the company to achieve defined quality, to protect customers / users of defective products, and thereby increase market competitiveness, profitability, improve the quality, reduce defects and decrease the operating costs, increase customer satisfaction and employee participation in decision-making (Mitreva, et al. 2013).

4. Preparatory activities for the successful implementation of the methodology

The successful application of this methodology in practice requires complex knowledge system in TQM from the head of the company - the CEO and the workers with different size and weight to the various functions of working (Harung, 1996). Planning the educational process was given to the top management in order to establish repair service education (Prodanovska and Mitreva, 2012). Department of Education prepared plans and programs for different levels of quality assurance in accordance with the functions and tasks to be accomplished within companies, using the methodology and applying the Deming's circle of quality. The education of employees in the company structure was in order to gain the skills and experience to deliver business processes in accordance with the requirements of the products, services, legal obligations and criteria of

competence and appointment of employees because quality requires for everybody to be included in the process, each in their own work (Mitreva and Prodanovska, 2013).

Motivation as a driving force in improving the quality of products/services is embedded by the top management in the company politics in order to achieve quality in all sectors and in all functions. Motivation is the responsibility of top management and therefore appropriate incentives for more efficient and productive work of employees at different levels in the organizational structure are required (Beardwell, et al., 2004).

The TQM strategy requires quality management processes and **management of costs**. The application of the methodology of costs should allow identification and monitoring of process costs within the individual areas of the company, as well as system recovery, the system of issuing work orders or admission process of new employees. The subsystem of management costs outlines the information and obligations of staff costs between the various departments and agencies. Hence, special reports inform top management of all costs, especially the cost of quality, place of origin, the possibilities of process optimization. The end goal was to find a way for employees to raise motivation, to be more focused on work, by applying the appropriate courses to improve their skills in performing the given activity.

5. Conclusion

Based on the implementation of the methodology, the following is noted:

The motivation and commitment of employees has increased dramatically as a result of the division of duties and responsibilities resulting with increase in salaries by an average of 7 % for a period of three months, and practicing teamwork and cohesion increase employee satisfaction.

With the modernization of business, storages provide greater visibility and efficiency and thus the implementation and optimization of the business process.

Improving the management of suppliers has grown into a partnership by installing software program to obtain accurate, precise and timely information on stocks, the needs and dynamics of deliveries.

With the modernization of business processes, and a new machine repair of motherboards there is an increase in customer satisfaction because they were able to bring their devices to the service and after the warranty period no matter to which brand it belongs.

With the purchase of new software the information system in the company was computerized and the time in internal communications staff was shortened. In this way, more repairers do not have to waste time by making the three documents, but the software pulls the required part of a warehouse, brings it to the virtual warehouse for repair and the broken part of the virtual warehouse puts the stack for Return Merchandise Authorization (RMA) or Return Goods Authorization (RGA), which means that a stack of defective parts should be returned to suppliers. That way shortens the implementation of the business process using automated software which produces all necessary documents.

By applying the methodology for sales support and after the measurements and re-survey of service users were found to have their satisfaction increased by 55 % or complaints about the time required to service the units were reduced by 50 %. With training and education of employees their team coordination has improved. After receiving certificates for servicing other brands, repairers gained knowledge and experience, and got the opportunity for greater material and moral satisfaction and the company increased its effectiveness and efficiency which shows in the financial statements profit increases of 4 % beside other investments. It means, that if the current momentum is kept, profits in the next 6 months should be increased by 10 %. However, the most important benefit is the design and implementation of TQM philosophy giving a solid foundation for continuous improvement through learning and can act as a basis for future projects.

List of References

- Beardwell, I., Holden, L., Claydon, T. (2004), *Human Resource Management; A Contemporary Approach*, Prentice Hall, Fourth Edition, pp.124-387.
- Ciampa, D. (2005), Almost Ready: How Leaders Move Up, *Harvard Business Review* 83, No.1.
- Dale, B.G. and Lascelles, D.M. (2007), "Levels of TQM adoption", in Dale, B.G. (Ed.), *Managing Quality*, 5th ed., Blackwell, Oxford, pp. 111-126.
- Harung, H.S. (1996), A world-leading learning organization: A case study of Tomra Systems, Oslo, Norway. *The Learning Organization: an International Journal*, Vol. 3, No. 4, pp. 22-34.
- Ishikawa, K. (1995), President Touka Henkau Sozo Gakkai, "Thoughts on risk management "Creativity and risk management", *JUSE, Societas Qualitatis*, Vol.9, No. 3 July/Aug, 5.
- Juran, J.M. (1988), *Juran on Planning for Quality*, Free Press, New York, NY.
- Kano, N. (1996), *Business Strategies for the 21 sr Century and Attractive Quality Creation*, ICQ, Yokohama, pp.105.
- Kratsu, H. (1995), Tokai University, "Concept engineering points in developing hit products", *JUSE, Societas Qualitatis*, Vol.9, No.2, May/June, 3.
- Latzko, Wand Saunders, D., (1995), *Four Days with Dr. Deming*, Addison-Wesley Publishing Company, USA, Canada.
- Mitreva, E. (2013), "The superior customer's value of the new economy implemented within Macedonian companies." *International Journal for Quality Research* Vol. 7, No. 2, pp. 215-220.
- Mitreva, E. and Filiposki, O. (2012b), "Proposal methodology of the subsystem-internal standardization as part of TQM system", *International Journal for Quality Research*, Vol. 6. No. 3, pp. 251-258.
- Mitreva, E. and Prodanovska, V. (2013), *The Management Teams are a Unique Business Potential that can Initiate, Identify and Manage Change within the Organization*. In: *Applied Social Sciences: Administration and Management*. Cambridge Scholars Publishing, Newcastle upon Tyne, UK, pp. 57-65.
- Mitreva, E., and Filiposki. O., (2012a), "Proposed methodology for implementing quality methods and techniques in Macedonian companies." *Journal of Engineering & Processing Management*, Vol. 4, No.1, pp. 33-46.

- Mitreva, E., Jakovlev, Z., Koteski, C., Kitanov, V. and Angelkova, T. (2012), "Analysis of the existing management system in Macedonian companies and the necessity of accepting the TQM philosophy", *International Journal of Pure and Applied Sciences and Technology*, Vol. 8. No. 2, pp. 54-63.
- Mitreva, E., Tashkov, N., Filiposki, O., and Dzaleva, T. (2013), Business processes optimization possibilities. *International Journals of Marketing and Technology*, Vol. 3, No. 8, pp. 89-97.
- Prodanovska, V. and Mitreva, E. (2012), Incorporation, authorization and encouragement of the employees in order to improve the quality of the educational process. In: *Two decades of academic teaching*, 18-19 June 2012, Timișoara.
- Sasaoka, H. (1995), The QC circle evolution from TQC to TQM, a management perspective, *JUSE, Societas Qualitatis*, Vol.9, No.4, Sept/Okt, 5.
- Woodall, J. and Winstanley, D., (1998), *Management development: Purposes, processes and prerequisites*. In *Management development: Strategy and practice*, Oxford: Blackwell, pp. 3-17.