

ACTUALITIES AND PRAGMATIC PERSPECTIVES OF TOTAL QUALITY MANAGEMENT IN THE AUTOMOTIVE KNOWLEDGE-BASED ORGANIZATION

Aurel Mihail TITU^{1,2}, Constantin OPREAN^{3,4}, Alina Bianca POP⁵,
Stefan TITU⁶

Rezumat. În contextul dezvoltării durabile și a îmbunătățirii continue se poate afirma că implementarea unui management integrat al calității într-o organizație modernă se poate realiza doar condițiile implementării unui pachet de concepte printre care putem să amintim: managementul cunoștințelor, managementul calității totale, managementul Kaizen standardele aferente, strategii și politici de management al calității dar și tehnici, metode și instrumente de management al calității. Lucrarea științifică prezintă un punct de vedere propriu cu privire la calea de urmat pentru o implementare sustenabilă a conceptelor anterior prezentate într-o organizație din domeniul automotive. Sunt prezentate aspecte concrete identificate într-o organizație reală din industria automotive precum și calea de urmat considerată a fi posibil de implementat astfel încât organizația să poată fi considerată organizație bazată pe cunoștințe. În acest context rolul managementului din organizație este extrem de important iar analiza valorii devine prioritară. Lucrarea științifică are ca obiectiv principal propunerea unui anumit mod de gândire managerială astfel încât cei interesați pot aplica strategiile și politicile de management al calității propuse în vederea implementării sustenabile a unui management al calității totale în cadrul unei organizații bazate pe cunoștințe din domeniul automotive.

Abstract. In the context of sustainable development and continuous improvement, it can be stated that the implementation of an integrated quality management in a modern organization can only be achieved under the conditions of implementing a series of concepts, among which we can mention knowledge management, total quality management, Kaizen management and related standards, quality management strategies and policies but also quality management techniques, methods, and tools. The scientific paper presents an own point of view regarding the pathway for a sustainable implementation of the previously presented concepts in an organization in the automotive field. The aspects identified in a real organization in the automotive industry are presented as well as the way considered to be possible to implement so that the organization can be considered a knowledge-based organization. In this context, the role of management in the organization is extremely important and value analysis becomes a

¹Professor Dr. Eng., Dr. Ec.-Mg., Dr. Habil. Dr. h. c., “Lucian Blaga” University of Sibiu, 10, Victoriei Street, Sibiu, România (mihail.titu@ulbsibiu.ro).

²The Academy of Romanian Scientists, 54, Splaiul Independenței, Sector 5, Bucharest, Romania.

³Professor Emeritus Dr. Eng. Dr. h. c., “Lucian Blaga” University of Sibiu, 10, Victoriei Street, Sibiu, România, (constantin.oprean@ulbsibiu.ro).

⁴The Academy of Romanian Scientists, 54, Splaiul Independenței, Sector 5, Bucharest, Romania.

⁵Asist/Prof., Technical University of Cluj-Napoca, North University Center of Baia Mare, 62A, Victor Babeș Street, Baia Mare, Romania, (bianca.bontiu@gmail.com).

⁶Ph.D. Student Med., “Iuliu Hatieganu” University of Medicine and Pharmacy Cluj Napoca, Romania, The Oncology Institute "Prof. Dr. Ion Chiricuță" Cluj-Napoca (stefan.titu@ymail.com).

priority. The main objective of the scientific paper is to propose a certain way of managerial thinking so that those interested can apply the quality management strategies and policies proposed for the sustainable implementation of total quality management within an organization based on knowledge in the automotive field.

Keywords: Total Quality, Total Quality Management, KAIZEN, Integrated Quality Management System, Value Analysis

DOI <https://doi.org/10.56082/annalsarscieng.2023.1.5>

1. Introduction

Quality has always been of great importance and is a decisive factor for the competitiveness of organizations on the market. It can be observed that more and more organizations pay much more attention and are oriented towards increasing the efficiency of products and at the same time improving them by implementing integrated quality management systems [1]. The conditions of quality, environment, security, and health at work can be some of the main reasons because of which organizations fail to fulfill their objectives and reach their proposed goals. For organizations to be able to increase their profit as much as possible and to remain on the market for as long as possible, which in the opinion of the authors represents the greatest interests of an organization, quality is a very important factor. Although there may be some apprehension about quality because it is perceived that it costs a lot to provide quality products and services, the idea is that customers will always be willing to spend more money and purchase quality products at the expense of less qualitative, hence the increase in profit and the decrease in costs. By the following statement: "Quality remains long after the price has been forgotten", it can be understood that quality can cost, instead it is lasting, and in the end all that will matter is quality, not price. Some of the advantages of an integrated quality management system within the organization are: cost reduction, reducing inefficient work and saving time, quantitatively increases production, because once the products made are of quality from the beginning, there is no need to keep remaking them, and then production increases; the products are more reliable; hence the number of customers and the degree of customer satisfaction can be increased; profit growth; equipment overload will no longer exist at a high level; therefore, their destruction is lessened; improving communication between employees. For all these advantages to materialize, the responsible persons from the management department offer support: continuously improve the integrated quality management system; ensures the necessary resources (human, material, technical); apply different strategies and procedures for quality assurance; establish analyzes and evaluations based on quality criteria; quality is the basis of gains from all points of view, financial, social, material, mental. Quality is the responsibility of each employee, and if each of them does their job in a qualitative way, the result will be a satisfactory one [2].

2. The complete quality program within an automotive organization

2.1. Formulation of a quality policy

To begin with, by policy it means the objectives and activities that underpin any organization in terms of quality. In other words, any organization should have a well-established quality policy. The policy must guide the activity of each employee. In other words, every employee must comply with this policy when performing day-to-day processes. The policy that the organization in the automotive field is based on consists in trying to distribute only products and services at the highest and most efficient quality, at a convenient price for everyone. The purpose of the organization is to satisfy customer requirements by fulfilling customer requirements, while also complying with applicable regulations, safety, and environmental regulations. It is also desired to avoid the appearance of non-conformities in all stages, from the start of the project, from the receipt of the first tasks, to its completion and the delivery of results, services. In other words, from receiving the requirements to fulfilling them, there should be no irregularities, and everything should be executed "by the book." For this policy to be implemented, a quality management system is necessary, which the company has also implemented. It wants to maintain this integrated quality management system because, through them, the improvement of services can be achieved, productivity can be increased, so that there is the assurance that every employee will respect it, and the tasks that come from customers are fulfilled in a timely manner, and they are performed correctly and at a high quality without the need to redo them, thus wasting time, which in the case of the organization is very important. Through this policy, which the company relies on, and which helps a lot to be able to deliver quality services and products, there can be certain advantages, such as cost reduction, because once the products are delivered on time and they are qualitatively made, no investment of money or time is required to restore them. The organization has implemented and maintains an integrated quality management system according to the requirements of the SR ISO 9001:2015 standard, to ensure an increased level of customer satisfaction regarding the services and products delivered. This standard is based on the processes within an organization, is customer-oriented and aims to increase the degree of customer satisfaction, but also aims at the continuous improvement of the management system. Therefore, it was considered very important that any organization, whether it is a small one or a large one, should have a well-established policy that is followed by every employee and to which every employee contributes, and, a quality management system must be well established, so that, through it, all processes and all services are evaluated, so that there are no irregularities. In other words, there will be a guarantee that the

products are tested, checked, and improved, if necessary, before reaching the customers.

2.2. Formulation of objectives in the field of quality

The management policy that can be proposed leads to the proposal of the following objectives in the field of quality, presented in figure 1.



Fig. 1. Quality objectives

For the processes, products, and services to be realized, human support is necessary, and here it means employees, preferably with experience and training, but also technical support, machines, equipment, laptops, systems, ECUs. In other words, without people working to make the products and without the necessary "tools", the products will not be made or will be made to a quality that leaves something to be desired. In the opinion of the authors, it is important to monitor the actions, the processes must be constantly evaluated to ensure that there are no non-conformities, and the quality is at a high level. Also, another purpose of these audits is to improve quality. With their help, one can see the level at which the product is and know if it needs improvement or if everything is going well and can continue in the same way.

2.3. Setting activities for each individual objective

At the level of activities, the organization in the automotive field proposes the following aspects presented in figure 2 and detailed in the following.



Fig. 2. Activities within the organization - own vision

Constant meetings with customers, and receiving feedback from them would be useful. The trainings should be on the "sector" of each employee and based on the action he has to do. Also, a meeting with people from the quality department with the employees is useful to make them understand the need for quality. Supposes the organization of reviews between employees/team members so that, if any errors slip out, they are found and resolved, before they get further in the process. Also, a meeting with all the members working on a component at various parts, and explaining the actions that each one has done. Asking for advice is important. The organization considers useful the existence of review sessions for each person in the team to give their opinion, to decide if there are problems, what needs to be improved so that the product does not reach the client without proper completion or with problems. The purchase of necessary tools to ensure technical support for staff so that they can carry out their activity.

2.4. Formulation of strategies in the field of quality

The strategy includes the objectives of the organization established over a longer period of time, the policies of the company, the activities, the ways in which these

objectives can be achieved and also the necessary resources. In other words, it is a plan with the help of which the objectives previously proposed in terms of quality can be achieved. It is vital for any organization to have a quality strategy as it is considered very important for products to comply with national and international quality norms and regulations. The strategy can be characterized by competitiveness, price, etc. In other words, the mission of the quality strategy is to help the organization to survive in the market, and these strategies are called competitive strategies [3]. Offensive competitive strategies, and as an example here is entering the market, in other words, if the company makes certain new products, in which it is not specialized, it is very important that they are at least as qualitative as the existing ones. Defensive competitive strategies, and here we refer to maintaining the market, i.e. making the products at a quality as good as or even better than what is already on the market [4]. As mentioned above, the strategy can be carried out over a longer period of time, however, there are also strategies carried out over a short period of time, and then there will be two categories: Long-term strategies and short-term strategies

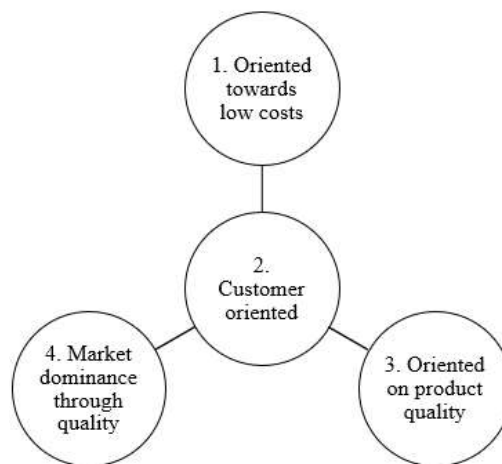


Fig. 3. The strategies in the organization that can be proposed

The organizational strategies that can be proposed are presented in figure 3.

2.5. Proposed measures to improve quality

Quality improvement consists of a series of actions that lead to improved services. In other words, it refers to the application of measures so as to increase performance. Once our services and products are improved and delivered at a much higher quality, customers will be much more satisfied, and also the company can develop much faster and considerably, because it will automatically increase the profit, increase the number of customers and also the number of

people who will want to work within the company will increase, so production will also increase [5].

Next, some measures are presented that the company is considering in order to improve quality: setting goals for improvement; training of employees; Identifying problems in time and diagnosing their cause; constant communication of results, so that it is known at each stage what the results were; trying to prevent the occurrence of defects, which can be achieved by constantly evaluating activities; establishing the way to solve the problems that arise, continuous improvement.

3. Total quality and zero-defect strategy

3.1. The concept of quality versus total quality

Both quality and total quality are very important in an organization, and each of them should exist in companies, implemented through a quality management system and a total quality management system [6]. According to ISO standards, quality represents the set of characteristics of a material or non-material entity that give it the ability to satisfy expressed needs [7]. In the view of the authors, it is a "characteristic" that every product/service has. With the help of quality, one can estimate the standard of a product or service. This is vital for an organization to be successful. Quality refers to how well the products made by the companies are made and how well the services are performed.

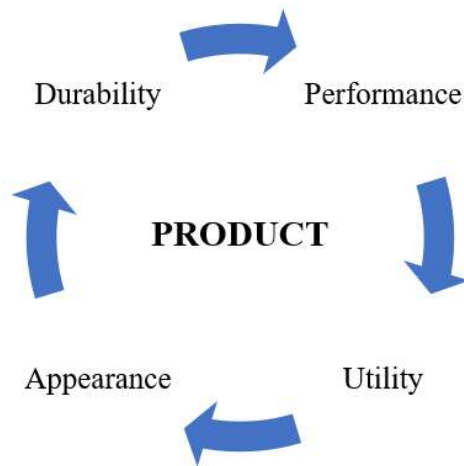


Fig. 4. Features of a product

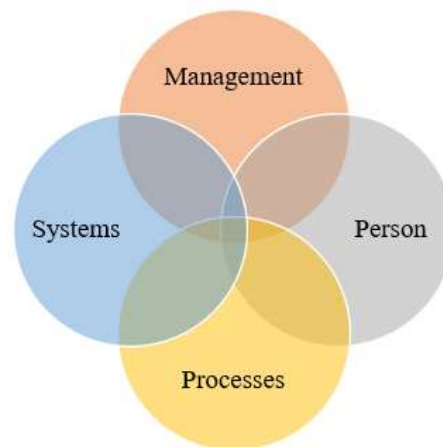


Fig. 5. The basics of total quality

Quality should be based on customer requirements and their achievement at the highest possible level, so that customers are satisfied. In other words, in order to be able to provide an acceptable level of quality in the company, customers must

be known very well, understood their needs and to be satisfied, even to exceed their expectations. The higher the quality of the products and the higher the level of services offered, the more the customers will be satisfied and the company and the employees will only benefit [8]. As previously mentioned, when it comes to quality, it refers to everything that means product, service, task, action. For a product to be considered of good quality, it must satisfy the customer's requirements from the following perspectives presented in figure 4. Total quality refers to all the work that is done in an organization. Through total quality, the goal is to increase productivity and the level of organization. This implies a quality improvement in all company-wide results. Here, reference is also made to goods, services, and to internal processes. In other words, total quality includes 4 basic elements, presented in figure 5. Therefore, the total quality covers all the functions of the organization, all the activities of the functions, all the collaborators, all the relations with customers, all the employees, all the improvements in the field of quality, the whole life cycle of the product, so it also covers the financial, strategic, human, and organizational area [9]. Both concepts are vital within companies, as they are the only way an organization can stay in the market and continue to operate.

3.2. Evidence and arguments at the management level

The organization in the automotive field, being among the largest manufacturers of auto components and collaborating with the largest car manufacturers, wants the products it delivers and the services it performs to be of as good a quality as that existing on the market, or why not, clearly superior. For this to be possible, both the total quality concept and the "zero defects" strategy have been implemented in the company, because quality in this field represents everything. To apply the total quality concept, it is necessary to implement a total quality management system. It was considered that to implement this system correctly and to function well, certain factors must be considered, namely:

- The quality policy must be defined very clearly by the top management. One can see the need for a quality assessment throughout the organization, to see what the level is, where more work needs to be done, because, basically, we want the customers' requirements to be met as we were asked, for them to be satisfied with the services provided, it also aims to improve the work of employees and their satisfaction.
 - Next, for things to work without problems and lost time, it was considered that each employee should have very clearly defined what the objectives are in terms of quality. It would also be helpful for employees to take an active part in setting goals.
-

Next, it was considered necessary to implement the following elements [10]:

- Whatever is built from the beginning, must have a solid, well-made base, so that you can develop further on this base. Namely, here we refer to the idea that the personnel dealing with TQM should have certain knowledge about what TQM is, what it entails, what are the principles that should be respected for this system to work optimally and give the expected results.
- It should be considered that the products/services made by the organization go to the customers, and then attention should be focused on the needs/requirements of the customers. We should follow the principle of "our client, our master", therefore, his expectations must be exceeded to be satisfied.
- An organization could not function well without managers, and then managers are involved in this whole process and set clear goals for employees so that they can achieve their goals and support them.
- There are partnerships with suppliers so that they too understand the organization's needs and priorities.
- Attention and focus are always on the process, so that it can be continuously improved, thus increasing quality. TQM must also be continuously improved.
- Decisions that are made are based on facts. Various tools are used to analyze the results, such as the Pareto diagram, the cause-effect diagram, brainstorming.
- Since it is about total quality, the focus is also on employees. It also invests in the training and education of employees, to develop their skills, to understand what quality entails, how the activity must be carried out to have a qualitative one, so that they, in turn, are customer oriented. In other words, to have complex training.
- Finally, both the employees participate and show their interest so that the products are of high quality, but also the managers work "side by side" with the employees to have very good results.

As mentioned above, in addition to TQM, the "zero defects" strategy is also implemented. This strategy assumes that every activity, every product/service made, is executed correctly from the beginning. It is based on the principle that everything must be done correctly the first time and every time. In other words, there should be no errors in the production of products, in the provision of services, everything should be as specified in the customer's requirements. For this to be possible, the idea is to be preventive rather than corrective.

A control system that aims for "zero defects" must be based on four fundamental principles:

1. Using the inspection of the source of errors, that is, performing the control of the performance of the functions in the places and at the stages where errors are possible.
2. Replacing inspection by sampling with 100% control (full control) of the source.
3. Minimizing the times for carrying out corrective actions when abnormalities appear.
4. The installation in different points of the manufacturing system of the so-called poka-yoke devices, i.e., the reporting and control means, as well as the means for making corrections.

The application of the "zero defects" concept is based on conducting permanent research on the sources of errors in the manufacturing process, on the principle of preventing defects before their effect unfolds on the product. In this way, the effort for the final statistical control is reduced.

Within the organization in the automotive field, the Poka-Yoke concept is implemented to prevent defects by catching, correcting, and eliminating mistakes [11].

3.3. Non-quality measure

Non-quality means lack of quality. It represents the difference between the quality desired to be obtained and the quality obtained. There are various costs related to quality, namely the costs of ensuring satisfactory quality and gaining customer trust and the costs incurred when satisfactory quality is not achieved. When referring to the cost of unsatisfactory quality, it refers to the costs associated with providing poor quality products/services. Evaluation costs refer to the costs incurred by the organization to determine the degree of conformity with the quality requirements.

Internal costs are the costs due to defects that were discovered before the product/service was sent to the customer. External costs refer to costs due to defects that were discovered after the customer received the product/service. Prevention costs are incurred to prevent possible quality problems. The cost of non-quality can be calculated as the difference between the costs actually incurred by the organization today and the reduced costs if there was no error and no defect during the design, manufacture, marketing, and use of the products. The information needed to calculate non-quality costs is sometimes difficult to obtain.

4. Total quality principles commented on and correlated with quality policies

It is important to consider several factors, namely cost, time and performance, when it comes to delivering quality products/services. When a quality product is made, it must also be followed what costs involve the quality of the product, what is the delivery term of the product and what are the performances. There needs to be a balance so that there are no losses. Both the preventive and the corrective attitude have a preventive character, but the major difference is that the corrective attitude helps the problem not to reoccur, while the preventive one prevents the emergence of a potential problem. A preventive attitude is preferable because it is more useful to prevent a problem from occurring than to allow it to occur, only to then invest time and resources to fix it. Because the organization is based on delivering products/services to customers who come with certain requirements. It is important to have a balance and take the good parts from all the influencing factors so that the product is made on time and is of quality. Directive management deals with setting goals and rules in a clear way for team members. It guides employees to succeed in achieving their set goals. It also clarifies an employee's roles and responsibilities and removes any obstacles that prevent tasks from being completed. At the same time, they can reward employees when appropriate. Participatory management deals with the implementation of management processes through the involvement of employees. It represents a form of management in which employees are also actively involved in the decision-making process. Therefore, employees need to know what their responsibilities are and what the goals they need to achieve are, but in addition to this, they must also take part in actions related to decisions, through which important company problems can be solved. Somehow, they should be combined so that the objectives are achieved, but they also have a say in the case of a more complex problem. Information system refers to various interactions between people, processes, data, and technologies, how people interact with technology to support processes. It needs to be tailored so that the entire information flow for quality related activities is ensured. It must be an adequate one so that there is no loss of information and for it to contain all the details related to the activities carried out in terms of quality. For this, the activities must be grouped according to the problem to which they are addressed and the information specific to each group must be provided.

4.1. Basic principles of total quality management

It was considered necessary to know the customer and his needs/requirements so that his expectations are met. The customer is the one who decides whether the product/service was of quality or not, thus, it is necessary to [understand] their

needs very well and to make the product exactly according to their requirements and expectations. Without customers, organizations would not be able to stay in the market, so it is necessary to meet customer requirements and deliver products/services according to the requirements and at the highest level of quality. To be able to implement this, it is considered necessary: meeting with customers to ensure that their requirements have been clearly established and understood; meetings with customers to receive feedback; constant product checks to eliminate non-conformities; leadership refers to the organization's top management and the way in which they, together with the organization's employees, get involved to succeed in delivering products/services at a higher quality and in a timely manner, respectively, why not, at an ever-increasing quality The best. It was believed that without effective leadership, the organization would not be successful. You need to know how to lead so that you can be successful in implementing strategies. Therefore, there are certain characteristics that should exist in terms of leadership, namely: get involved in training, focus on quality, and know all the details and how well the company is performing; to look for new possibilities that can increase the company's profit; to share values; to have adequate organization; always be in contact with customers. Continuous improvement refers to increasing the quality of products and services on an ongoing basis. For this to be possible, the involvement of all employees is necessary, the latter having to improve their activities. It was believed that the organization must focus on long-term continuous improvement. Also, this principle should be among the main goals of any organization. For this principle, the following are considered necessary: effective communication between employees; promotion of teamwork; training employees to know how they can improve their work; implementation of a system so that it is known how much the services/products have improved. In an organization that makes products or provides services for various customers, quality must prevail. If the products/services are not of quality, then the company will not last in the market. With the help of management and employees, the organization will be able to provide quality and customers will be satisfied. If the degree of customer satisfaction is high, the company will gain, for example, it will attract more customers, more projects, the profit will increase, and it will be in a leading position in the market. The "zero defects" strategy refers to the execution of all activities/projects throughout the organization without errors. Everything is executed correctly from the beginning, without any kind of error (zero stock in supply, zero interruptions in production, no loss of customers) This principle can be implemented through continuous improvement. The involvement of all employees is very important. Through the employees, the products/services provided to the customers are fulfilled. Once everyone is involved and trying to

do their job as well as possible, then the customers will be satisfied and there will be quality in any process.

5. Kaizen management – a way to improve quality

Kaizen is one of the most important concepts in Japanese management. By Kaizen it meant continuous improvement, which involved everyone in the organization, starting with employees, then supervisors, managers, and top managers [12]. This method was one of the best methods for improving performance within companies, because the implementation costs were minimal. Communication between the employee and the manager is very important, and through this method, relations are strengthened much more, because the achievements the company has are due to the efforts of each employee. As a translation, the words "Kai" and "Zen" translate to improve the existing situation [13]. The Kaizen method means continuous, long-term change. In other words, a gradual improvement is aimed for, with changes being visible from day to day. As steps that should be followed initially, problems that may arise when improving services/products are to be discovered. After this, one must analyze the current methods that are proposed to help in continuous improvement and generate new ideas that may be more effective or useful in this continuous improvement process. Then, after these steps have been carried out, the established plan for implementing the continuous improvement concept must be developed and then implemented. Finally, evaluation of new methods follows. It was believed that it is essential not to make sudden changes on a large scale, but to have small but daily changes, to leave everyone's comfort zone, thus achieving the improvement of the quality of our work. Employees are the ones who make the products and provide the services for the customers. It was considered vital that employees were fully involved, asked for help in identifying problems. Thus, it will be much easier in terms of change. At the same time, it is known that at the organizational level, there are problems, and our products/services still have gaps in terms of quality. For this reason, it is useful to always have a check and feedback so that problems are discovered. After identifying the problems, it is necessary to find a solution to solve them. And here, we can again involve employees who can come up with a solution. After the solution has been found, to see if it is a reliable one, it must be tested. At the end, the results will be analyzed, and if the results are satisfactory and the change was beneficial, the solution will be implemented in the company.

5.1. The 5S method

Another part of the Kaizen system that needs to be implemented in the organization is the 5S framework. Through it, an ideal physical workplace is established. It is known that the place where the activity is carried out is very

important and a suitable place must be created so that the activities can be carried out in the best possible way [14].

5.2. PEVA method

Another method on which this Kaizen strategy is based, and which can be applied to have continuous improvement in the organization is Deming's cycle, briefly called PEVA. It is necessary to properly understand the consequences before acting [15]. The Kaizen principle seeks long-term continuous improvement in an organization. By means of this continuous improvement, the products/services that the organization makes/provides will be much more qualitative, and why not at a quality even higher than the one expected by the customer. A person will always be attracted to quality, which can lead to an increase in the number of loyal customers of the company. Overproduction refers to the large production of products, much higher than the demand, and failure to follow the Just in Time method means that parts stocks are not optimized.

5.3. MUDA

As is well known, in every organization there are errors/non-conformities in existing, ongoing processes. Next, 7 major losses that occur within the organization are defined. These losses are known as MUDA, which in Japanese translates as loss [16]. Within this Kaizen management, the aim is also to eliminate these losses: defects; overproduction; buying raw materials and materials more than necessary; unnecessary overheads; unnecessary waiting; insufficient motivation of workers; unnecessary transportation and handling of materials and goods. When defects appear, the workload of the employees increases considerably, because sometimes it is possible to create the product from scratch and the time required to make it increases. Therefore, it is proposed to organize training for employees, motivate them and receive feedback much more often. Buying too many materials was considered a waste of financial resources and a waste of space. They can also deteriorate over time and become unusable. It was considered that only the necessary should be bought and its supplementation if necessary. Unnecessary waiting can occur when bottlenecks occur in production or when there are blocking points in the research and development department, or customer feedback is delayed. It was considered necessary to improve and accelerate feedback from customers, much closer communication with them [17]. It was also considered necessary to motivate employees, either through promotion, bonuses or financially. It is important that they are aware that their work matters a lot and that it is appreciated. Because without them the organization would not survive as they make all the products/services.

5.4. Gemba Walk

As a last useful method to be able to implement continuous improvement is the Gemba Walk. It is a very simple method by which the process can be observed, monitored, and audited. New ideas for continuous improvement can also be produced. It's a way for top management to see what the real work is, how it's done, and build relationships with employees based on mutual trust.

6. Conclusions

The presence of quality and a quality management system is very important. It was considered that without quality a company has no way of surviving in the market. As a result of this project, the term quality, the importance of quality and the steps a company must follow to succeed in improving its products/services were much better understood. It is useful for any organization to set its objectives clearly and take the most suitable measures/ set activities that can lead to the achievement of the objectives. Also, strategies are very important to grow the company and last, if possible, in the market. At the same time, the process of continuous improvement is vital, because the more high-quality products are offered and the fewer errors there are, the more the customers benefit, but first the company along with the employees.

Overproduction can occur due to the thinking "something can break, it's better to do more", which is wrong, because resources, time are lost, the workload of employees increases, storage space increases. It was believed that production should begin only when the exact number of products is known and be done carefully so that nothing goes wrong. Lack of quality costs money, which means the organization must focus on product/service quality and implement a process for continuous improvement. Prevention is always more effective and less expensive than fixing problems that occur and are discovered along the way.

The organization in the automotive field proposes to implement the measures established above in order to improve the quality of the services and products produced, which will ultimately lead to an increase in customer satisfaction, to gaining their trust, expanding the number of customers, company development, profit growth and market retention/advancement.

In conclusion, it is vital that Kaizen management exists in every organization and is implemented and reviewed by all people who are part of the organization. With small steps and desire on the part of each employee, the continuous improvement needed everywhere will be achieved. Through implementation, they can increase profit and productivity, decrease losses in an organization, increase staff motivation, and eliminate unnecessary equipment.

REFERENCES

- [1] Ilies L, (2003), *Managementul calitatii totale*, ISBN: 973-35-1686-4, <https://www.crest.ro/bibliografie/crest%20bibliografie%20cursuri%20nr.43.pdf>
- [2] O., Lozan, R., Gramma, (2017), *Managementul calitatii în instituțiile spitalicești*, ISBN 978-9975-3042-9-0 http://msmps.gov.md/wp-content/uploads/2020/06/managementul_calitatii.pdf
- [3] S., Felegean, (2020), *Strategii de îmbunătățire a calității ofertei de produse și servicii*, Columna_2020_05_03.pdf
- [4] ASQ, 2021, *Failure Mode and Effects Analysis (FMEA)*, <https://asq.org/quality-resources/fmea>
- [5] Institute for Healthcare Improvement, (2019), *Failure Modes and Effects Analysis (FMEA) Tool*, <http://www.ihi.org/resources/Pages/Tools/FailureModesandEffectsAnalysisTool.aspx>
- [6] H. Arabian-Hoseynabadia, H. Oraee, P.J. Tavnerb, (2010), *Failure Modes and Effects Analysis (FMEA) for wind turbines*, <https://reader.elsevier.com/reader/sd/pii/S0142061510000281?token=9C1AFD32B909258C69C75790E1A9FB80EF424591E2C3619B93E0860C62FF5F1983B4BCA62978EE3A9D2045709B8F0F5A&originRegion=eu-west-1&originCreation=20211229193859>
- [7] M., Mehrpouya, A., Gisario, A., Rahimzadeh, & M. (Barletta, 2019). An artificial neural network model for laser transmission welding of biodegradable polyethylene terephthalate/polyethylene vinyl acetate (PET/PEVA) blends. *The International Journal of Advanced Manufacturing Technology*, 102(5), 1497-1507.
- [8] A., Goyal, R., Agrawal, R. K., Chokhani, & C. Saha, (2019). Waste reduction through Kaizen approach: A case study of a company in India. *Waste Management & Research*, 37(1), 102-107.
- [9] M., Shojaei, A., Ahmadi, & P. Shojaei, (2019). Implementation productivity management cycle with operational Kaizen approach to improve production performance (Case study: Pars Khodro company). *International Journal for Quality Research*, 13(2).
- [10] A. Abebe, (2021). Implementation of Kaizen 5S, MUDA, and PDCA for Productivity Improvement of Manufacturing Firms in Ethiopia: The Mediating Role of PDCA and Waste (Muda) Elimination between 5S and Productivity Improvement.
- [11] A., Jambhekar-Inamdar, & S. Pawar, (2018). Kaizen: A way of continuous improvement for management. *Advance and Innovative Research*, 208.
- [12] T., Rathod, M., Shinde, Y., Naral, C., Garud, & K. H. Munde, (2019). A Case Study on Application of Kaizen in Industry. *International Research Journal of Engineering and Technology*, 6(6), 111-13.
- [13] D., Romero, P., Gaiardelli, T., Wuest, D., Powell, & M. Thürer, (2020, August). New forms of gemba walks and their digital tools in the digital lean manufacturing world. In *IFIP International Conference on Advances in Production Management Systems* (pp. 432-440). Springer, Cham.
- [14] A. Chiarini, (2020). Industry 4.0, quality management and TQM world. A systematic literature review and a proposed agenda for further research. *The TQM Journal*.
- [15] A., Petcharit, P., Sornsaruht, & P. Pimdee, (2020). An Analysis of Total Quality Management (TQM) within the Thai Auto Parts Sector. *International Journal of Online & Biomedical Engineering*, 16(2).
- [16] O., Sabbagh, M. N., Ab Rahman, W. R., Ismail, & W. M. H. Wan Hussain, (2019). The impact of TQM practices on key performance indicators: Empirical evidence from automotive dealerships. *Economics and Management*.
-