The improvement of the production flow – Zoppas Industries Romania firm

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Abstract:

This paper aims to analyze production flows company Zoppas Industries Romania.

S.C. Zoppas Industries Romania S.R.L. is a successful organization, being a world leader in terms of the resistance manufacture for any type of device that requires it.

Given the powerful clients with whom it collaborates (from CANDY, to ZANUSSI or MIELE) for many years, some for decades, we can state that, for this society, quality comes first. It obtains its first Quality Certificate UNI EN ISO 9001 in 1990, from BSI (British Standard Institute) and successively, in June 2003, from Vision 2000. Also in 2003, in June, on the strength of sacredly compliance of the quality standards, it also acquires the UNI EN ISO 140001 Quality Certificate, which denotes a seriousness, which they have and had ever since the *birth* of this business. Within this study, we have presented the Zoppas Industries Romania firm, starting with the products and continuing with an analysis of both the internal, as well as the external environment to the firm. The preventive and corrective proceedings of this firm are also included. It is expected that, for the Zoppas Industries Romania company, the rate of turnover to increase with 10%, and the gross profit to increase with 25%.

Key words: Production flow, improvement, acquisition.

The measurement of the products

The organization monitors and measures the characteristics of the product, in order to verify if all the requirements referring to the product are satisfied. This is accomplished in the

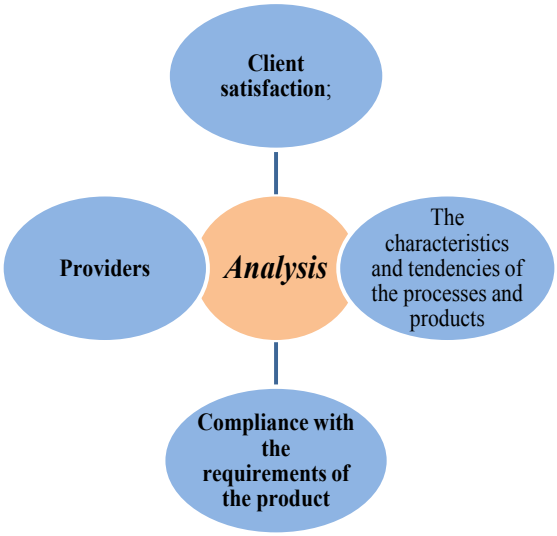
proper stages of the product manufacture process, in accordance to the acceptability criteria that must be maintained. The recordings indicate the individual/individuals that authorize the release of the product. The release of the product and the delivery of the service are not produced until they have been properly finalized, with the exception of the cases in which it was approved differently by a relevant authority or, where applicable, by the client. This requirement assumes the best part of the 4.10 clause – inspections and tests – of ISO 9001: 1994.

The data analysis

The organization is determined to collect and analyze the corresponding data in order to prove the suitability and effectiveness of the quality management system and in order to assess where the continuous improvements of the quality system effectiveness can be applied.

This includes data generated by the measuring and monitoring activities or from other relevant sources.

The analysis holds and provides information referring to:



Improvement

The firm improves the effectiveness of the quality system continuously, by the employment of the following:

- The policy referring to quality;
- The quality' objectives;

- The audit' results;
- The data' analysis;
- The corrective and preventive proceedings;
- The analysis executed by management;

This norm requirement implies a proactive approach of the improvement issue.

Corrective and preventive proceedings

The society acts for eliminating the cause of noncompliance, to the end of preventing their reappearance.

A documented procedure for defining the requests for the proceedings below must be established:

- The noncompliance' analysis (including the complaints of the clients);
- The definition of the noncompliance' causes;
- The assessment of the proceeding necessity for assuring that the noncompliance won't reappear;
- The determination and implementation of the necessary proceeding;
- The recording of the results of the undertaken proceeding;
- The analysis of the undertaken corrective proceeding.

The norm specifies the fact that the corrective proceedings are the proceedings undertaken after the emergence of a noncompliance. As against the ISO 9001: 1994, some clarifications are brought in, clarifications such as the necessity of the registration of the results ad of the analysis of the undertaken proceedings' effectiveness. An organization that has repetitive nonconformities automatically doesn't have an effective corrective proceedings system. The organization acts in order to eliminate the causes of the potential nonconformities, towards preventing their emergence. The preventive proceedings must be adequate to the consequences of the potential issues.

A documented procedure for defining the requests for the following must be established:

- The determination of the potential nonconformities and their causes;
- The evaluation of the necessity to act for preventing the emergence of nonconformities;

- The determination and implementation of the necessary proceeding;
- The recording of the results of the undertaken proceeding;
- The analysis of the undertaken preventive proceeding.

The norm specifies the fact that the preventive proceedings are the ones that are undertaken before the emergence of a potential nonconformity. The organization must identify the information sources for identifying some potential nonconformity and, accordingly, some preventive proceedings. A few examples of potential sources could be the following:

- The expectations and the needs of the clients;
- The market analysis;
- The results of the data analysis;
- The satisfactions measurement;
- The measurements within the operations;
- The recordings within the quality management system;
- Self-evaluation;
- Risk analyses;
- Feasibility studies;
- Plan: establish the objectives and the necessary processes for providing the results, in accordance with the requirements of the client and with the policies of the organization;
- Execute: implement the processes;
- Verify: monitor and measure the processes and the products, as against the policies, the objectives and the requirements for the product and report the results;
- Act: undertake proceedings for the continuous improvement of the process' performances.

The continuous improvement – a permanent objective of the society

It implies the following:

- The analysis and evaluation of the existing situation, for identifying the areas that need to be improved;
- The establishment of the objectives for improvement;
- Seeking solutions for accomplishing those objectives;

- The evaluation of these solutions and the effectuation of a selection;
- The implementation of the chosen solutions;
- The measurement, the verification, the analysis and the evaluation of the results of the implementation for determining the objective accomplishment level;
- The normalization of the changes;
- The patterning of the requirements on the 20 elements of the ISO 9001:1994 was dropped;
- An additional emphasis is put on the continuous improvement (ISO 9001:1994 doesn't have a similar clause).

The quality system is the means through which an organization defines and proves the necessary processes for assuring that the product and/or the service comply with the requirements of the client. In the EU countries, more programs were initiated, oriented towards the improvement of the firm competitiveness, towards the motivation and the education of the personnel and towards the client satisfaction. Among them, the "European Program of quality improvement", "the European Award for Quality" and "The European foundation for Quality Management" are included. Another dimension of the quality preferment policy in Western Europe is the orientation towards the development of the environment management systems, in accordance to the ISO 140000 international norms series, as means of control, measurement and communication of their own performances in the environment domain. The purpose of the efforts mentioned above and of the European policy in the field of quality in general, is to create a new image of the quality culture in Europe, based on cooperation and collaboration between the European countries.

Investments in social projects, education, sports, culture and environment

Zoppas Industries Romania supports student organizations and offers them the possibility of gaining work experience through practice and training projects and the opportunity of an international career in fields such as research and development, projection, resistance production, supply, verification. Zoppas Industries Romania, with the R&D units and therefore, with its production activities, is one of the greatest employers of the Western Romania and offers attractive career opportunities, particularly for the technical education graduates. Besides the fact that it is one of the greatest investors and local employers, Zoppas Industries Romania is also a partner of the local community. The company has initiated and was partner to many Corporate

Social Responsibility projects, in 5 main domains: education, environmental protection, social projects, sports and culture.

Environmental projects

1. **Technical measures: Accelerated compulsion ventilation system**

Feasibility study for implementing an accelerated compulsion ventilation system that will ensure an augmentation of the air quantity extracted from the vulcanization area, as well as the augmentation of its evacuation speed. Deadline: February 2014. The elaboration of the technical project for the accelerated compulsion ventilation system in the LST section, the brazing and implementation of the pilot mode area.

The verification and the confirmation of the parameters of the technical project by olfactometry measurements. Deadline: September 2014. The extension of the implementation of the technical project for the accelerated compulsion ventilation system in the LST section area and the confirmation of the project's viability through the effectuation of a new set of olfactometry analyses. Deadline: October 2014

2. **Natural measures: natural barrier plantation – high vegetation – trees**

Plantation of a natural barrier (trees from linden and hornbeam cores) in the perimeter areas of the factory (Area No. 1 and Area No. 2). Deadline: April 2014.

Other proposed proceedings for the S.C. Zoppas Industries Romania S.R.L. firm are referred particularly to the organization of the quality control from the production.

1. The production quality verification is a component of the production quality management and consists in the verification of the correspondence quality parameters of the production with the established quality requirements that are recorded in the technical documentation or quality normative. Therefore, the quality control consists in verifying if the documents concerning the production quality, documents that are mandatory, contain veritable data and respect the norms. The quality control is always concluded with the adoption of the acceptance or objection decision of the production.
2. The quality verification has various forms, corresponding to the quality management levels (reception control of the raw materials, of the assemblies and subassemblies, operation and manufacture stages verification, final verification and so on).

3. The quality verification is accomplished by the executant worker and by the personnel of the company's quality technical control compartment (self-control), but it should also be verified and SIGNED by the heads of the team that manage the entire production process.
4. Another idea would be to explain to all the operators that THEY ARE THE CREATORS OF QUALITY, and that the ones that determine and decide quality are not the producers, they are only the clients that this firm has; that is why each of us must feel like a client; only if the creator will regard the piece as such, he will be able to follow its flaws.
5. If each operator will be trained to regard his activity from the perspective of a client, he alone can follow the process that he develops and can discover the flaws that he or the previous worked have produced.
6. Each employee of this society must understand that the "piece of resistance of this company are us", because only because of us, of all of us, the company has progressed and can further progress; however, without quality, in time, customers will *disappear*, and without them, the company will become a bankrupt business; without the company, the work force of this area will decrease significantly and the approximate 3000 employees of S.C. Zoppas Industries Romania S.R.L will lose their jobs, thus resulting a quite serious problem. Approaching decisions on the basis of some objective proof (information that can be proven as true), I can state that the permanent training and the devotion of the staff towards quality are necessary, as they represent primordial factors for attaining the purpose. It is expected that, for the Zoppas Industries România company, the rate of turnover to increase with 10%, and the gross profit to increase with 25%. The amount of employees will increase with 9% in the following 5 years. The total debts will decrease 4 times.

Manufacture flow improvement and development opportunities

The stock administration system operation manner is presented. Within the production system, he have discovered that most of the problems within the LST section are encountered in the sealing section, herein being included the pre-sealing and sealing operations. On the strength of these problems from the sealing area, the production flow is interrupted almost daily, thanks to the human errors, but also on the strength of the existing equipment, which is quondam and technologically outdated. Because of this, I have chosen to propose an improvement of the manufacture flow within Zoppas Industries Romania and have chosen the LST section, the 72M

line from the sealing area. The 72M line is a manual line; herein, there are no mechanical machines, therefore, many defects appear among the resistances on the strength of the intricacy of the manufacturing process. As a manufacturing flow improvement, I propose the acquisition of a machine that would effectuate the pre-sealing process, the sealing being effectuated manually, because this process is a relatively simple one; the sealant is introduced inside the resistance and on top, the perlina is placed. With the aid of the dosage, filling and pre-sealing machine, TWINNER, the operator will only have to place the resistances, and the operator that effectuates the sealing, will have to pull the resistance grid and begin sealing it manually. By the acquisition of this machine, the production flow will increase, the amount of defects will decrease and therefore, the entire technological process is improved.

Conclusions

The organization applies adequate methods for monitoring, and where applicable, measuring the quality system processes. These methods demonstrate the ability of the processes of obtaining planned results. When the planned results are not obtained, corrections and corrective proceedings are applied, as appropriate, in order to ensure the conformity of the product. Approaching the decisions only based on some objective decisions (information that can be proven as true), I can state that the permanent training and the devotion of the staff towards quality are necessary, because they represent a primordial factor for attaining the purpose.

One of the most important competitive aspects is the continuous improvement one, being influenced by all the members of the organization. By acquiring the sealing machine, the production flow will increase, the amount of defects will be reduced and therefore, the entire technological process is improved. It is expected that, for the Zoppas Industries Romania company, the rate of turnover to increase with 10%, and the gross profit to increase with 25%. The amount of employees will increase with 9% in the following 5 years. The total debts will decrease 4 times.

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