Implementing a Quality Management System in a car fleet management

Road to the certification by the Standard NP EN ISO 9001:2015

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ISO 9001 certification process is becoming increasingly important for companies seeking to achieve benefits related to productivity, quality of products, services and maturity of processes. To achieve certification, it is essential that the Quality Management System implemented by the organization is set for a full, clear, and updated according to the latest ISO 9001. For these reasons, this study focused on a Portuguese company dedicated to fleet management that want to obtain certification under ISO 9001:2015 by the end of June 2016. For this purpose, was accompanied the preparation of the Quality Management System under the 7 new quality management principles and compliance with all the requirements of ISO 9001:2015. All audit processes were approached as well as the motivations, requirements and potential benefits that certification can bring. In the end, despite the finding of non-compliance and improvement plans, it was observed that the audited company has all the conditions to get the desired certification.

Keywords: Certification, ISO 9001:2015; Quality Management System; Fleet Management; Processes.

1. Introduction

The main objectives of this work are the implementation of a Quality Management System in an automotive company, check whether they comply with the requirements of ISO 9001:2015 standard and follow the steps aimed at certification by the same standard and identify the benefits that certification can bring. Then it made a historical framework of quality, as well as the importance of this concept in a service company.

According to Pires (2007), while recognizing that quality is a subjective component, sometimes difficult or even impossible to measure accurately, look from the point of view of quality control, quality assurance or quality management, quality needs to be objectified and quantified in order to be measurable; otherwise there will be no possibility to control and improvement. Even subjective characteristics must, as far as possible, allow some form of measurement.

As is mentioned in Rocha (2011), we owe to Deming, Juran and Feigenbaum the development of quality control and quality management.

Edwards Deming is seen as the father of modern revolution in quality. He was convinced that the statistical sampling methods could be applied to the activities of production in order to increase productivity. The quality had to be defined in terms of customer satisfaction, because the purpose that was intended was to adjust the products to the public and not the other way and the quality was considered multidimensional, being virtually impossible to define the quality of a product or service in terms a simple feature.
For Juran, the quality was a management issue, not happening by accident, integrating the following trilogy: quality planning, quality control and continuous improvement. In short, the quality was centered on product characteristics that satisfy customer needs and generated profits.

Feigenbaum is responsible for the control of total quality concept that he develops in his book *Total Quality Control* (1983). According to his approach, the quality should concern all workers and should be present in all the manufacturing processes and management. This author is known to be one of the pioneers (along with Taguchi) in the study of non-quality costs.

The evolution of the concepts can be schematically summarized in the following sequence:

- **Inspection**: measurement activities, comparison, verification;
- **Quality Control**: activities that focus on monitoring, particularly in the analysis of deviations and replacement of process parameters in the desired conditions.
- **Quality Assurance**: planned and systematic activities that in an integrated way can ensure that the desired quality is being achieved.
- **Quality Management**: activities coincide with the ones in the quality assurance, but it is emphasized integration in the overall management of the company.
- **Total Quality**: corporate culture able to ensure customer satisfaction.

### 2. Fleet management

Over the past few years the business of fleet management companies has been gradually increasing, with special focus on the Vehicle Operating Lease. Due in part to the economic crisis in Portugal - and that led many companies to forego having their own car fleet in order to reduce costs.

The advantages that a company may have from the contract in outsourcing their fleet management boil down to four main factors: the reduction of costs, the transfer of variable costs to fixed costs, transfer risk and a more efficient use of available resources.

The various existing forms of financing when purchasing a car are leasing, long-term rental, personal loans, and mortgages.

As for the personal loan if the customer chooses a new vehicle, you have to stay with reservation of ownership on behalf of the bank.

As for the mortgage, if the client is not willing to relinquish ownership of the vehicle, wants to hire an own damage insurance, his car cost more than 15,000 euros and if he has a property to mortgage, then he can consider this type of loan.

With regard to leasing, the customer signs a contract of lease, during which the car belongs to the fleet company, and at the contract conclusion, he can keep it if you pay the residual value, exchange it or return it. However, all the costs of automobile maintenance and repair costs are paid by the customer.

In long term rental option when the contract period ends, the customer has no choice but definitely keep the car. So, you he to pay the residual value and purchase the vehicle according to the value set at the beginning.

As for renting, also known as operational leasing of vehicles, it allows you to rent a car for a limited period and subject to a mileage combined at the beginning.

In addition to the vehicle financing, management also includes the provision of a set of complementary services such as maintenance, replacement car, change tires or insurance, among others.

Renting secured about 13 % of new vehicle sales in Portugal and was the preferred
funding model by companies for the purchase of passenger vehicles.

The main management fleet in Portugal are LeasePlan (51% market share), Locarent (16% market share) and ALD Automotive (13% market share).

3. Company presentation

The analyzed company focuses its activity on the operational renting of vehicles without driver and car fleet management, in order to ensure its customers' mobility, including small, medium and large companies but also individuals. The company's direction is composed by the General Direction and 7 other Directions: the Commercial Direction and the Operational Direction form the operational departments, and the Financial Directions, IT, Human Resources and Organization as the support departments.

4. ISO standards

According to the IPQ, the Portuguese Quality Institute, a standard is a document established by consensus and approved by a recognized organization that provides rules, guidelines or characteristics for activities or their results, ensuring a level of excellent order in a given context. In general the rules are for voluntary compliance. Become mandatory if there is legislation to determine compliance.

The series of ISO standards was created by the International Organization for Standardization (ISO) in order to improve the quality of products and services.

Regarding quality, ISO standards are formed by a group of standards directed to the quality management system, of which the main ones are:

- ISO 9000 - Fundamentals and vocabulary of the QMS (Quality Management System); document that contains all terms used in the system;
- ISO 9001 - QMS requirements; explains the requirements for certification;
- ISO 9004 - Management for Sustained Success of an Organization (A Quality Management approach) - is a document with instructions to implement the quality management system.

In quality management, ISO 9000 designation usually includes the set of standards of the ISO 9000, 9001, 9004 and 19011. They can be applied in various types of organizations: industries, companies and institutions and refer only to the quality of processes of the organization and not the products or services. This group of norms describes rules related to the implementation, development, evaluation and continuity of the QMS. They became official from the year 1987, based on British standards and have been subject to revisions since then.

ISO 9001 was prepared by Technical Committee Quality Management and Quality Assurance (ISO / TC 176) and is the standard that certifies quality management systems and defines the requirements for the implementation of these systems. This document, with tools or methods of standardization, assures a model for the implementation of Quality Management.

Any public or private company can obtain this certification based on ISO 9001, regardless of their industry, product/service offered. This document is a valuable resource for the company's management, because it guarantees a set of business management practices originated and tested worldwide. When the company is certified by this standard, it ensures the competences to use consistently and effectively a famous conceptual tool quality, known PDCA cycle Edwards Deming (Plan-Do-Check - Action). Step P (planning) consists of: problem identification, observation (recognition of problem characteristics), process analysis (discovery of the major causes that prevent the achievement of targets) and action plan (counter-measures on the main causes). This step defines the objectives and goals that the organization wants to achieve. The
D step (accomplishment) it’s the implementation of the plan developed in the previous step. Step C (check) goal is to monitor and periodically measure the results, valuing processes and results. Step A (action) it consists in acting in accordance with the assessed and reports, determining and carrying out new action plans in order to improve the quality, efficiency and effectiveness, improving execution and correcting any flaws.

5. Quality Management Systems

According to Pinto (2010), a QMS is understood as a system that requires the internalization of a philosophy, processes and management practices involving all those who work in the organization in a cooperative process, such as an organizational culture, that is carried out in providing products and services that meet customer needs and expectations.

5.1. Quality Management standards

Both ISO 9001 and ISO 9004 are based on a set of quality management principles that were originally developed in the 90s by a group of intimately acquainted experts with the teachings and philosophies of the "gurus" of quality, including Deming, Juran, Crosby, Ishikawa, Feigenbaum, among others. Before the ISO 9001 2015 revision, ISO has undertaken a complete review of these standards. It’s important to notice that the eight original principles have stood the test of time, and that only took small adjustments to upgrade to the next generation of quality management standards. One of the changes was to bring together two of the original principles, “process approach” and “systemic management approach” in a new and unique principle. The seven quality management principles are now:

- Customer focus: The primary focus of quality management is the satisfaction of customer requirements and the effort to exceed their expectations.
- Leadership: Leaders establish, at all levels, unity in purpose and direction and create the conditions for people to commit themselves to achieving the Organization’s objectives.
- Commitment of people: competent people, empowered and engaged at all levels throughout the organization are essential to improve the ability to create and deliver value.
- Process approach: consistent and predictable results are achieved more effectively and efficiently when activities are understood and managed as interrelated processes that act as a coherent system.
- Improvement: Organizations that succeed are constantly focused on improvement.
- Evidence-Based Decision Making: Decisions taken based on the analysis and evaluation of data and information are more likely to produce the desired results.
- Relationships Management: For sustained success, organizations manage their relationships with relevant stakeholders, such as suppliers.

5.2. Process Approach

As a result, and especially given the complexity of the available theory about organizational processes, it is understood that, in addition to performing the mapping of processes implemented in an organization, it is necessary to discuss ways for their management to the implementation of improvements.

The QMS of the audited company is implemented in accordance with ISO 9001:2015 and are intended to be kept and reviewed regularly and permanently. The efficiency of the QMS and its processes is also revised and improved continuously, as mentioned in the “Quality Policy” point.

5.3. ISO 9001:2015 structure

The structure of ISO 9001:2015, which is based on the quality management system of the audited company, is as follows: Scope; Normative References; Terms and definitions; Organizational context;
Leadership; planning; Support; Operation; Performance evaluation; Improvement.

6. Quality Management System implementation in the company reference

Regarding the analyzed company, it was noticeable that the company had enough information but in a somewhat disorganized and without a hard and well-implemented criteria. With the implementation of the QMS have tried to organize the information in a clear, accessible and always available to update.

The management of the company decided through its strategy and planning of their activities, adapt their management system to the requirements of ISO 9001:2015 as a way to demonstrate its ability to provide products and services according to the requirements of clients and the stakeholders and demonstrated his goal in improving customer satisfaction level following criteria and requirements recognized internationally.

The scope of the QMS covers the Operational Leasing and Fleet Management Cars, according to the organizational structure and established procedures.

The middle of each year, the company starts the preparation and review of its business plan, its objectives and its strategy for the coming year. In this process are considered internal and external factors that influence or may influence the company's activity, the conduct of its operations, the provision of goods and services to customers as well as meeting the requirements of both the customers want the stakeholders and therefore its ability to meet the respective needs and expectations. These factors included in the Business Plan, are considered in the planning of activities, the definition of the general objectives for each area, and the identification of resources and means to achieve them.

The results of each year as well as the company's strategy and the quality objectives for the following year are communicated internally to all employees at annual general meetings and setting annual objectives for the departments and for each employee. The development of activities and the overall objectives are measured and monitored throughout the year and the results achieved are reported monthly to the Director and the annual meetings to all employees.

Customer requirements, the expectations and the stakeholders needs as well as internal and external factors identified are dynamic and sometimes highly complex and can when they are not met or satisfied, create risks for the company and put into question its ability to provide products and services in accordance with the requirements. To mitigate these risks and identify opportunities for improvement, the company has defined, implemented, maintains and monitors a set of processes for the treatment of risks and opportunities.

To carry out the operations, the company identified, released and maintains the necessary resources and an internal control system - Permanent Supervision - to identify risks and opportunities for improvement in each process as well as to mitigate risks and minimize possible negative effects that they may lead either to the company or to customers and other stakeholders.

The QMS is described in the manual as an internal communication tool and aims to convey to employees the presentation of the QMS, an overview of the internal organization of the company for the correct application of the quality management system and transmitting documented information on the same, always focused customer satisfaction. The manual includes the scope, references to procedures, processes and other documented information, and also describes the processes and their interactions aimed at the provision of products and services according to customer requirements, legal
and statutory. In the quality manual are identified the responsible for the development and maintenance (Organization Department), the responsible for validation and approval (Director of the company) and the correct location for files consultation (Intranet/Organization Department).

Regarding the focus on customers, Management's commitment to the customer is demonstrated through:

• Clear and concise identification, understanding and compliance of the customer requirements, of the statutory and regulatory requirements contained in all processes and relative to the same ID (see "QUA_MAN001 P03_Processos_do_SGQ");

• Determination of risks and opportunities that may affect the conformity of products and services and the ability to increase customer satisfaction

• Maintaining focus on improving customer satisfaction

In the definition and planning of the QMS, the company considers the external and internal factors, as well as the expectations and needs of all relevant stakeholders to determine the risks and opportunities that need to be addressed.

For this, the company defines, implements and controls, using a set of processes, the applicability of the foregoing points. The ID for these controls are defined and identified in the processes, including:

• ORG PSU 001 – Permanent Supervision;
• ADM QUA 001 – Management and clarification of complaints;
• COM GES 001 – Prospect creation;
• COM GES 002 – Costumer creation;
• OPE SOU 001 – New vehicle purchase;
• ORG KYC 001 – Contracting e Third Party agreements;
• QUA MAN 001 P04 – Internal audit to the QMS.

The company has identified three types of processes aimed at the realization of products and services, including:

• Management Processes;
• Implementation of Processes;
• Support Processes.

The management processes are the set of activities coordinated with each other to ensure the direction and supervision of the activity. Conducting Processes group activities dedicated to the product life cycle, are sequential, interact and generate added value for the customer. The Support Processes support the business, contributing to the good functioning of other processes by providing crosswise the necessary resources.

Monitoring and measuring the characteristics of products and services to ensure the customer requirements, is performed during all stages of the process, including:

• ADM QUA 001 – Management and clarification of claims;
• COM GES 001 – Prospect creation
• COM GES 002 – Costumer creation;
• ORG PSU 001 - Permanent Supervision;
• QUA MAN 001 P03 – Processes and Responsibilities in QMS;
• COM GES 004 – Orders and Deliveries management;
• OPE ENC 001 – Orders and Deliveries;
• OPE CMG 003 – Contractual changes;
• OPE CMG 004 – Several changes;
• OPE CMG 009 – Service change.

The information collected in the measurement and monitoring processes of goods and services is analyzed cf. "QUA
MAN 001 P03 – Processes and Responsibilities and the results of this analysis contribute to the definition of corrective and preventive actions, which are implemented and monitored in order to improve the process under the QMS. The record of this monitoring is done through the process "ORG PSU 001 - Permanent Supervision", the analysis of results is carried out quarterly at the meeting of Permanent Supervision and annually included in the review by Direction/Management.

Monitoring and measurement of processes within the QMS are carried out according to the process "ORG PSU 001 - Permanent Supervision". Continuous improvement of processes and resulting increase in customer satisfaction level is checked by analyzing the results of monitoring carried out and the implementation of corrective and preventive actions to this purpose.

The company identifies opportunities to improve processes and implement the actions necessary to accomplish customer requirements and increase their level of satisfaction, by the Permanent Supervision.

The non-conformities are analyzed, as well as its causes and consequences, and based on that information, corrective actions are defined.

Promoting continuous improvement of the QMS and its effectiveness is performed steadily and verified through the analysis performed in the process of review by Direction/Management and verified their implementation through various procedures which contains activities for the treatment of the non-conformities detected during realization of processes.

The performance indicators are grouped in the follow table:

<table>
<thead>
<tr>
<th>Quality indicators of the audited company</th>
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<tbody>
<tr>
<td><strong>Customer Satisfaction Degree</strong></td>
</tr>
<tr>
<td>claims</td>
</tr>
<tr>
<td>customer Survey</td>
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<tr>
<td><strong>QMS auditing process</strong></td>
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<td>QMS audit</td>
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<td>audit of the QMS processes</td>
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<tr>
<td><strong>QMS processes</strong></td>
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<tr>
<td>human Resources</td>
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<tr>
<td>business, operations and financial</td>
</tr>
</tbody>
</table>

With regard to customer complaints, before the implementation of QMS, there were only the 'Evolution of the number of complaints' and 'Service with more complaints'. He was found fit to add the following indicators: 'Average response time to customer' and the '％ of SLA compliance' in order not only to assess the total number of complaints as well as the efficiency in resolving them. As for the customer survey (annual survey of clients), when drawing up the QMS was added the Recommendation probability indicator to assess the percentage of recommendation or not by customers. With regard to the audit and internal control process, added indicators ‘efficiency of corrective actions implemented’ and 'Efficiency of Permanent Supervision’ because found it vital to check the implementation of remedial actions as well as the recurrence of anomalies Permanent identified in Supervision.

Regarding the Review by the Management/Direction, the internal audit conclusions were:
Report nonconformities

<table>
<thead>
<tr>
<th>Point of ISO 9001: 2015 where there was non-compliance:</th>
<th>4.4.1; 8.4.1; 9.2.2; 9.3.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>QMS document where the standard requirements were not met</td>
<td>4.4.1 - The main processes are identified, some are not updated. 8.4.1 - ALD sent the questionnaire to evaluate suppliers. 9.2.2 - It was just done an audit to verify compliance with the ISO standard requirements - the first audit under quality. 9.3.2 - A Review by the management did not include the results of QMS audit or evaluation of suppliers;</td>
</tr>
<tr>
<td>Description of non-compliance (Completed by the Auditor)</td>
<td>4.4.1 - The company has an ongoing plan for the review of processes: documentation of all processes, simplification, dematerialization. 8.4.1 - The QMS was implemented recently. Data Suppliers are not available and is necessary for its use, making the communication to the ICPD and obtain the consent of the data for use. The process is already implemented but the investigation will only be possible to send in January / 16. 9.2.2 - The quality management system was implemented in 2015; The process was implemented during 2015 and the end of the year made up an audit. The processes are audited quarterly (Permanent Supervision); complaints are reviewed quarterly; surveys to customers are made several years ago. 9.3.2. The QMS audit was conducted after the review; evaluation of suppliers is already provided for in the planning of QMS for Q12016; - The Review p / Management was made in early December; the results will be presented at the next meeting.</td>
</tr>
<tr>
<td>Causes of non-compliance (Completed by the Audited)</td>
<td>4.4.1. Continue to review processes 8.4.1 - Complete legal requirement (communication / authorization of the CNPD; authorization of suppliers); - Proceed to issue the assessment surveys Suppliers, get the data and analyze. 9.2.2. - Set the Audit QMS Plan for the year 2016. 9.3.2. - Plan Review by the new management, mid-term in order to include the results of investigations and audits.</td>
</tr>
</tbody>
</table>

Corrective and Preventive Actions (Completed by the Audited)

7. Certification

For most organizations, this step is the final goal of the whole process, where the certifying entity shall ensure (certify) that the system accomplish the standard requirements. Thus, the system guarantees to the customers, to the top management and to all the stakeholders, that the organization's activities are conducted in a controlled manner, in accordance with the provisions and established by the standard.

The procedure for ISO 9001 follows different stages: Pre-audit; Certification Audit; Issuance of the Certificate; Follow-up audits and renewal of certification.

According to Pinto (2010), the advantages of certification are evidence, clear to the employees, customers and other stakeholders of the efforts of the organization in terms of quality. To these, added advertising advantages as a certified company may use the company brand certified in documents and in advertising / marketing. Reduce the likelihood of errors and complaints and generate more confidence to their customers, are also targets to achieve. It's expected to increase the orientation of your business to the customer and achieve with this significant savings.

As to the audited company, it decided it wanted to get certified by ISO 9001:2015 in December 2015. From that date, the implementation of quality management
system has become a priority by the Directions. These conveyed this intention in stages to its employees, while the processes were analyzed in detail, as well as the quality manual. The company understood that certification could bring a substantial improvement with regard to the organization of all documentation and that the image of credibility and innovation would be enhanced with this new status.

As for the difficulties that the certification process is likely to bring to Tarawneh (2000), the main difficulties are: resistance to change, low qualification of labor, complexity of some management tools and processes of the company and the need to constant investment in training and improvements.

In the audited company, some employees showed their displeasure in detail explain their functions, while others passed the certification would not change anything in the company. Some of the information found is obsolete, outdated or incomplete and one of the difficulties encountered has been set (or change) a clear and updated way the inputs and outputs of all cases examined.

To achieve all the steps referred to in ISO 9001, it requires that the organization is fully aware of its benefits, difficulties and especially to know deeply what the reason for this implementation. For organizations, the implementation of the standard is influenced by the organizational environment, changing needs, individual goals, the products provided, processes used, size and organizational structure.

The company audited, in concrete terms and objectives, the great benefits it seeks are reduced by 20% in the non-compliances identified by the internal control Permanent Supervision and a 15% reduction in the number of complaints received. Another goal, after certification and improving the image in the domestic and international markets, is the increase of vehicles managed by the total number of 20,000 vehicles at the end of 2017.

After the closing meeting of the audit conducted by Bureau Veritas, the audited company focused on the occurrence of 4 observed non-conformities and 7 identified improvement opportunities (required to complete the process). Then the process will be sent to the final stage of certification (evaluation by a technical committee for certification within 90 days).

After the closing meeting of the audit, the audited company focused on the occurrence of the 4 non-conformities (NC) observed and 7 improvement opportunities (IO) identified (required to complete the process). Then the process will be sent to the final stage of certification (evaluation by a technical committee for certification within 90 days). The main NC was identified in the Operations Department, specifically in the orders and delivery department. There was no process or procedure which was referred to the methodology to be followed so that the date of delivery of the vehicle to Customer be changed (by decision of the Customer or rental) or in the event a change in the delivery date of the vehicle by the Supplier as the requirements originally set by the Client. With regard to IO, these focused on the complaints. Monitoring Customer has to be fast, efficient and personalized and will have to result more corrective actions in response to complaints received. In the claims which are involved in some kind of outsourcing service, not specified or discriminated which the following procedure or workflow.

8. Conclusions

As Fonseca (2011) mentioned, top management leadership, the strategic perspective of management systems, the existence of knowledge and skills in organizations and the use of appropriate programs and tools, are relevant aspects for the certified management systems contribute an effective way to create value, sustainability and sustainable success of organizations.
The adoption of programs and quality tools in the process of implementation of the QMS and eventual certification, helps to maintain the goals related to the quality of the products and services outlined by the organizations, and the perception and the need to use and full understanding of the programs and quality tools fully recognized by this organization in particular. This was perfectly take in account in the preparation of the audited company's quality manual, following the requirements of ISO 9001:2015.

As noted in this study, was monitored the definition and development of the quality management system to implement in the company reference identified the steps and stages required to obtain certification under ISO 9001:2015 and concluded that, in addition to the company be able to get certified, there are numerous advantages and benefits that may arise.

In the future, more specifically one year after the date on which the company obtains certification will be important to develop a case study based on this same company, focusing on the major differences between the current state of the company before the certification and post-certification. Would be discussed the audit plan for 2016 and 2017 and thought it would be useful to make an inquiry to the direction, quality manager and employees of the company where the great difficulties that the company faced during the certification and essentially the great advantages would be questioned, as well as the differences and benefits the certification by ISO 9001:2015 brought to the company.

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