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# THE PARADOXES OF QUALITY

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**Abstract:** This research work intends to contribute to the clarification which involves the ISO 9001:2008 certification and its applicability by presenting an analysis and subsequent reflection on the impact of certification organizations, as well as compliance with the requirements of the standard. The results achieved with this work on the paradoxes of quality allowed the confirmation of what many people already suspected. These will serve as initial knowledge, once there were no other studies on this subject. Marked the paradoxes, we highlight that there are companies that claim to exist simultaneously “involvement of all in solving problems” and on the other hand claim that “there are cohesive work groups.” Likewise, state that “practicing continuous improvement” and simultaneously they have “difficulty in changing the rules of the workplace.”

**Key-words:** ISO 9001, Paradigms, Paradoxes, Quality Management System.

## 1. Introduction

The models of management of quality have been adopted in order to improve processes and thereby increase customer satisfaction. However, most companies adopted these models without knowing their true implications and limitations, although they have been experienced over time. The paradox is defined as the difference between what is or seems to be contrary to common sense, which contradicts the principles of human thought or conflicts with the beliefs and convictions of most people. This is therefore the era of paradox, where workers find themselves confronted with this concept of paradox at work, because companies are in constant change and evolution (Thompson, 1998). A continuous analysis of the behavior of several companies certificated in quality shows that the requirements of ISO 9001:2008 isn't totally known.

## **2. Methodology**

### **2.1 Data Collection**

For data collection technique was adopted a questionnaire survey of direct administration, by completing online. This was sent via e-mail, the companies certified to ISO 9001 belonging to the Minho region in the north of Portugal. It was designed another questionnaire for the same purpose, but only applied to some well-known personalities in the field of quality. The answers of the participants were recorded in a database, created according to the structure of the survey. The data analysis was performed using the *SPSS - Statistical Package for the Social Sciences*, version 19.0.

### **2.2 Pre-Test**

It was ministered a pre-test in order to detect potential problems and flaws in the questionnaire. It was sent, via email, to 5 companies, belonging to more than one county, certificated according ISO 9001, and from different industries. All responded appropriately and in accordance with their comments appropriate amendments were made to the survey in order to achieve the proposed objective.

### **2.3 Population and Data Analysis**

The questionnaire was submitted to 100 companies certificated according ISO 9001, from the region of Minho in the north of Portugal and based on the list provided by *SGS - Societe Generale de Surveillance, SA*. It was identified the group of respondents, comprising 40 companies. The data analysis was performed using descriptive statistical analysis methodologies, among which are frequency tables and graphs, which allowed not only assess the general characterization of the surveyed companies, as well as the evaluation of the benefits and barriers obtained with the certification , associated with the respective businesses. The bivariate analysis, including cross between variables, served as a support to the identification and analysis of the paradoxes of quality.

## **3. Results**

### **3.1 General Characterization of the Enterprises**

The majority of certified enterprises are small and medium SME of the branch of industry. They were established between 1930 and 2007. Both, the older and the newer felt the need to certify its quality management system. Years of greater adherence to certification were between 2001 and 2008. From that date until 2011, it has been decreasing, perhaps due to the economic outlook that we have been living in Portugal.

### 3.2 Major Benefits of Quality Certification

The quality certification allows the company to increase competitive advantage, reduce failures and losses in the production process and optimize the use of existing resources, customer's showing its commitment to quality with the intention of its greatest satisfaction. The results showed that 30.77% of the companies consider that certification on the 'continuous improvement in customer service' was relevant, while 69.23% think that was very important. Only 25.64% of firms surveyed believe that the certification has contributed to the 'increase in turnover', which may indicate that the remaining 74.36% are not properly apply all its procedures. Concerning the 'cost reduction', 10.26% of companies consider that the certification of the quality system do not influence this factor. The lack of costs control may be the reason for this situation. The series of ISO 9000 has assumed a prominent position in the evaluation of companies as a way to increase productivity and efficiency and therefore greater customer satisfaction and higher level of internal organization of the firm (Camfield, 2004). According to Godinho (2001), it must be measured the costs of non-quality, creating indicators to make this assessment, in order to generate procedures or corrective actions to remedy the errors responsible for these costs. Also Crosby (1984) states that it is necessary to focus on prevention to reduce costs, creating the concept of "zero defects". The 'employee satisfaction' is important for them to carry out their tasks accordingly. If employees do not feel satisfied, less likely undertake their tasks accordingly with it is established, so that there is the existence of a paradox. Organizations should make them feel they are important to their growth and performance and are valued for what they do. One of the main barriers on implementing the quality management system is resistance to change (Coral, 1996), and according to Crosby (1994), changing the mindset of management is the main key to improving quality. Employees are the lifeblood of the organization (ISO 9001:2008). It is important to create a good environment that allows everyone's involvement to achieve the desired goals. Continuous improvement depends on the overall performance of an organization, causing this to be a permanent objective. In this case, only 7.69% of firms felt that the quality certification was very important for increasing employee satisfaction, the rest are not properly valuing this factor, suggesting the existence of yet another paradox.

### 3.3 Main Obstacles for Certification

Increasingly there is a need that organizations have to standardize their processes in order to optimize their operations. However, there are many difficulties to be overcome in its implementation. The demand for this certificate, in recent years has been something fundamental to the recognition and growth of organizations. But in our daily lives, we all live between paradigms and in

organizations it is not different. However, it can be observe that in the culture of the company, in some cases, there are contradictions (paradoxes) that hamper the deployment of the quality system. It is necessary that everyone is aware of these implications that could change the philosophy of corporate management to philosophy based on ISO 9001:2008 that runs into resistance. In the study performed, it was found that about 7.50% of the responses received, they mention that the ``task time increased``. This may mean that the procedures established in these organizations are not properly adapted to the tasks performed. Employees can still find themselves struggling to adapt to the new implemented management system. "The implementation of a quality management system should be seen as an investment and managed as such" (Apcer, 2012). For the 'cost increase', about 65% of companies reported an increase of the costs during the implementation of the quality system. Perhaps due to some unplanned expenses. These are aimed at an improvement of equipment, human resources and training, to improve the internal organization of the company, and that comply with all the requirements. All this is to achieve continuous improvement. If the system is not adapted to the reality of the company to generate continuous improvement, it can be considered an expense. But if the organization verifies continuous improvements in its indicators, certification is considered an asset. What happens is that about 45% of the companies consider the implementation of the quality management system an expense. This happen because its system is not properly adjusted or is not being met so that continuous improvement is visible. For Rust (1994), the cost of quality seek to determine the financial impact of this problem in order to reduce these costs with a view to continuous improvement. Thus, it becomes essential to identify what costs are associated with the practice of quality in a particular company and identify the relationship between these and the resulting non-quality or non-compliance. According Thomaz (2001) "within each category of quality costs, resources are allocated for each type of event you are involved in a quality system." In prevention costs there are the preparation of employees, investment in equipment and process development. In evaluation costs there are teams of quality control, documentation etc ... On the other hand, the internal failure costs are the returns, rework and low productivity, among others. And lastly, the external failure costs are found in the replacements, repairs, legal issues, marketing and advertising costs, among others.

The 'work instructions' are documented to be put into practice and met the rigorous as established. Otherwise, it may be committing to non-compliance. Even before being non-compliance, there is still 2.50% of the companies which do not practice work instructions as documented, what means a paradox. As we pointed out in paragraph 5.1 of the standard, the 'top management' should provide evidence of its commitment to the development and implementation of the quality management system and continuous improvement of its effectiveness. Therefore, it should become involved in implementation of the system and during the certification (ISO 9001:2008). However, still about 10% of the certified

companies show no involvement of top management, what means a next paradox. To verify compliance total quality management system, it is necessary to comply 100% with the standard requirements. For this it has been made internal audits and monitoring. But from what it was seen, only about 55% of organizations meet the requirements, what means that the others are not in totally compliance with the requirements. And in this case, the question arises, why should them be certificate? About 25% of the organizations do not feel fully realized, once hoped to achieve more with the certification. Some companies exemplify where they felt disappointed and would like to improve, such as: increased billing, control and monitoring of tasks to achieve the objectives; uniformity of records and forms of work, external recognition; achievements to 100.00% of the procedures; waiting for a continuous improvement assumed by all, more involvement of the administration throughout the year; procedures created more length, employees more responsible and accountable, more visibility in the market; documentary improvement in management practices, increase the company's credibility, less bureaucracy; greater sensitivity on the part of employees (even when they are encouraged, they receive training), improved interaction between sectors.

### 3.4 Evidence of Paradoxes

- *There are cohesive work teams VS Involving everyone in the resolution of quality problems*

**Table 1 - Cohesive work teams VS Involving everyone in the resolution of quality problems**

		There are cohesive work teams				
		Less Important	Unimportant	Relevant	Very Important	Total
<b>The involvement of all in the resolution of quality problems</b>	Less Important	1 (2.6%)	0 (0.0%)	2 (5.1%)	1 (2.6%)	4 (10.3%)
	Relevant	0 (0.0%)	2 (5.1%)	15 (38.5%)	1 (2.6%)	18 (46.2%)
	Very Important	1 (2.6%)	0 (0.0%)	13 (33.3%)	3 (7.7%)	17 (43.6%)
	<b>Total</b>	2 (5.1%)	2 (5.1%)	30 (76.9%)	5 (12.9%)	39 (100.0%)

It is important that all employees are heard and not just a few, there will be given different resolutions, be analyzed and be chosen the most appropriate for the case. Unlike some companies only operate with a certain group, hearing only the opinions of those people, forgetting that quality should be the subject of the entire company. According table 1, about 2.6% of the companies consider

simultaneously that certification are not important concerning the existence of cohesive work teams and simultaneously consider unimportant everyone’s involvement in the resolution of quality problems. This means that these companies have certified a management model that encourages the involvement of all in the issues related to quality, but have not changed their minds in this direction. On other hand, approximately 7.7% of companies consider simultaneously the slopes as very important.

- *Practice processes worked in accordance to what has been documented VS ensures that there is effectively managing the quality system as established.*

According table 2, 2.5% of companies ensure that the quality system is such as established. On the other hand 2.5% refer that they do not practice the processes in accordance with what has been documented and vice versa. For documented processes and procedures, according ISO 9001:2028, it was established in firms that are implementing their quality management system. Thus, one should ensure that management is in accordance with the processes.

**Table 2 - Evidence of paradoxes:**

Practice processes worked in accordance with what has been documented VS ensures that there is effectively managing the quality system as established.

		Less Important	Relevant	Very Important	Total
<b>Practice work processes in accordance with what has been documented.</b>	Less Important	1 (2.5%)	3 (7.5%)	0 (0.0%)	4 (10.0%)
	Relevant	0 (0.0%)	8 (20.0%)	9 (22.5%)	17 (42.5%)
	Very Important	0 (0.0%)	6 (15.0%)	13 (32.5%)	19 (47.5%)
	<b>Total</b>	1 (2.5%)	17 (42.5%)	22 (55.0%)	40 (100.0%)

As mentioned in paragraph 4.1 of the referred standard, organizations must establish, document, implement and maintain a quality management system and continually improve its effectiveness in accordance to the requirements of this document. According to Section 4.2.4, the registries established to provide evidence of conformity to requirements and of the effective operation of the quality management system shall be controlled.

- *Practice continuous improvement VS has difficulty changing the rules in the workplace.*



When quality is implemented, the organization should raise awareness among employees of its importance, before starting to implement the system. As regards the rule in point 5.5.2 of the standard, which top management ensures the promotion of awareness with customer requirements throughout the organization. Approximately 22.5% refers simultaneously practicing continuous improvement, but certification came hinder change the rules in the workplace, what is a next paradox.

**Table 3** - Evidence of paradoxes: Practice continuous improvement VS has difficulty changing the rules in the workplace

		Have difficulty changing the rules in the workplace				
		Less Important	Unimportant	Relevant	Very Important	Total
<b>Practice continuous improvement</b>	Less Important	0 (0.0%)	1 (2.5%)	2 (5.0%)	0 (0.0%)	3 (7.5%)
	Relevant	2 (5.0%)	4 (10.0%)	8 (20.0%)	0 (0.0%)	14 (35.0%)
	Very Important	4 (10.0%)	5 (12.5%)	9 (22.5%)	5 (12.5%)	23 (57.5%)
	<b>Total</b>	6 (15.0%)	10 (25.0%)	19 (47.5%)	5 (12.5%)	40 (100.0%)

At the beginning, it is normal to express their resistance to change the rules about their jobs. This resistance must be overcome with time, but in many cases does not occur. All companies should establish objectives and targets towards improving continuous improvement. As it is seen the standard concerning the continuous improvement in point 8.5.1, the organization shall continually improve the effectiveness of the quality management system.

- *It is provided a favorable environment for high performance individual VS Reward the team effort.*

About 15% of companies believe that the certification was very important in which concerns the reward of the effort of the team. About 7.5% indicate unimportant, ie, the employer did not give any importance to this factor. When it comes to the workplace, refers to physical, environmental and others in which the work is performed. Approximately 7.50% of organizations considered not to provide a favorable environment to provide a high performance.

**Table 4 - Evidence of paradoxes: It provided a favorable environment for high performance individual VS Reward the team effort.**

		<b>Reward the team effort</b>				
		Less Important	Unimportant	Relevant	Very Important	<b>Total</b>
<b>It is provided a favorable environment for high performance individual</b>	Irrelevant	0 (0.0%)	0 (0.0%)	1 (2.5%)	0 (0.0%)	1 (2.5%)
	Less Important	1 (2.5%)	2 (5.0%)	4 (10.0%)	1 (2.5%)	8 (20.0%)
	Relevant	0 (0.0%)	3 (7.5%)	15 (37.5%)	4 (10.0%)	22 (55.0%)
	Very Important	0 (0.0%)	1 (2.5%)	2 (5.0%)	6 (15.0%)	9 (22.5%)
	<b>Total</b>	1 (2.5%)	6 (15.0%)	22 (55.0%)	11 (27.5%)	40 (100.0%)

The reward is an incentive for them to carry out their tasks correctly and in this way they are more interested in the implementation of the quality system. The rule in paragraph 6.4, states that the organization shall determine and manage the work environment needed to achieve conformity to product requirements (ISO 9001:2008).

### 3. Conclusion

In this work, it was marked the importance of integrating quality management system of companies. Through a limited sample, it attempted to describe the difference between two existing practices in organizations, which is written and the reality, showing some paradoxes. Consequently, the results showed that these companies did not verify that the quality benefits could bring to the proper application of the system. It has allowed to change the perspective on the world business organization, and also helped to see what it had long perceived about the image that is happening and what actually happens. This study can be extended to a larger number of companies and other characteristics in order to identify other paradoxes and therefore, try to correct them.

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