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Implementing the environmental management system as a factor to improve company image

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Abstract: *The rising awareness on the importance of environmental protection and on the possible impact associated with products produced and consumed has increased the interest in developing methods to better understand and address this impact. Thus, 14000 environmental management standards were born. This determines environmental policy issues and the environmental impact of products, activities or services of the organisation, the planning of the objectives on environmental protection, the setting of measurable targets, the implementation of policies and programmes necessary to achieve these goals and targets, the mechanisms of control and feedback measures, the corrective activity monitoring and the assessment management system. This article exemplifies how this standard was implemented at the company HIB Rolem Codlea.*

Key-words: *environmental management, organisation image, pollution, sustainable development*

1. Introduction

Improving quality requires the adoption of a new set of values learned by all staff, attitudes and behaviours of production, oriented towards customer satisfaction. The large scope of the aspects connected to quality (consumer, operational, conservation, environmental) may be put in connection with the design of quality, and assessed not only in terms of customer, resource service provider and society, but also in terms of the natural environment and of the quality of life (Martinescu and Martinescu, 2003). Clients want to have confidence in the company's ability to provide the required quality and to maintain this quality. To earn this trust, the company must be able to demonstrate that it has implemented an effective quality management system (Neacşu, 2015). The quality strategy is a certainty for ensuring the prerequisites for success (Băltescu, 2010, p.228).

The increasing concern for environmental protection is a consequence of constant economic development in recent years, of the awareness of the importance attached to protecting our environment both for the present generation and for future

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generations. Thus, it is necessary to control pollution, its regular level by implementing a new management system, namely ISO 14001. This paper exemplifies the implementation of this standard within the company HIB Rolem Codlea.

Quality management is based on eight principles that underlie the entire quality management system. A quality management principle is a fundamental and comprehensive rule or belief for the management and operation of the organisation, intended to the continuous improvement in the long term, by focusing on customer needs, while communicating all the essential factors involved and interested. The quality of the product is the basis for sustaining competitive advantages for many companies (Brătucu and Boşcor, 2008, p.110).

Quality management principles aim at a consistent approach to leadership and management in an organisation, in the context of a competitive economy. In accordance with the requirements of the international standard ISO 9001: 2007, eight quality management principles have been identified, necessary to lead the organisation towards improved performance, namely (Todoruț, 2007):

- Customer focus;
- Leadership (the direct involvement of management at all levels);
- Staff involvement;
- Procedural approach;
- System approach to management;
- Continuous improvement;
- Factual-based decision making;
- Mutually beneficial relations with providers and users.

Mackey & Mackey (1992) conducted an adaptation of the basic principles of total quality management resulting in 14 principles, namely:

- Improving a product or service must be a permanent objective;
- Openness to new ideas;
- Reducing dependence on overall control to achieve quality;
- Giving up the practice of choosing based on low price, cost minimization;
- Continuously and constantly improving products and services;
- Focusing on employees' continuous training;
- Adopting and developing the capacity to lead the organisation;
- Eliminating fear;
- Eliminating barriers among the different categories of employees;
- Renouncing slogans;
- Removing staff statistics and disregarding numerical goals for staff management;
- Removing the causes that lead to loss of pride in the job;
- Encouraging education and self-improvement for all staff;
- Taking measures to translate change into life.

2. Overview of the Company HIB Rolem Codlea

The company HIB Rolem Codlea was established in the fall of 1994, with a total number of almost 300 employees and then started a contract with Mercedes and its solid manufactures auto parts for luxury cars ornament. In 1995, the company doubled the number of employees and firm orders to Mercedes, which was followed in 1997 by the conclusion of a contract with BMW and the obtaining of the ISO 9002 certification. In 2000, the Rolem Company expanded by an additional 12,000 m^2 surface systems, offering more than 1,000 jobs. The following year the company had 1,800 employees, and in the same year a new contract was signed, this time with Audi. A year later, new contracts with Porsche and Toyota (first customer in Japan) were signed.

In 2006, the number of employees increased to 3,300 due to the increasing number of the parts supplied to Mercedes and to the conclusion of new contracts with BMW. The ending serial production for some products and the reduction of orders brought a decrease in the number of employees in the company in the period 2007 - 2008, but by 2009 it signed another contract with BMW for the production of "Mini Cooper ornaments".

In 2010, the Rolem Company was acquired by the German company Mutares AG and also in this year it started launching series production of other new pieces for BMW. In 2011, it began series production for other ranges of new products, after signing new contracts with customers from the branded automotive industry.

HIB Rolem Codlea, part of German Hib Trim Part Solutions, is the first multinational in the automotive field that entered the Romanian market.

The Rolem Company is also concerned about environmental protection, and, in this respect, the company has successfully developed a system for processing and recycling the materials used in various processes. The Company complies with and imposes environmental regulations to all its employees, periodically checking that they are carried out according to the law.

The QUIN Company is Rolem's main competitor on the Romanian market. The German manufacturer entered the local market in 2003 and, in Ghimbav, it owns a land with a total area of over 46,000 square meters, which is the largest location of Quin in the four countries where it operates, having over 1,500 employees. The company has factories and offices in Poland, China and Germany and manufactures components for the interiors of luxury cars, with different decors of wood, metal, synthetic material, foil and carbon (http://www.bzb.ro/). The QUIN Group develops and produces tangible aesthetic elements, perfectly machined down to the smallest detail. Some car brands to which Quin and its employees in Romania delivers products include Maybach, Bentley, Mercedes-Benz, Audi, Porsche, BMW, Mini or AMG.

The QUIN group is aware of the need to protect the environment and promote sustainable development. Thus, the concept of progress is achieved through the

production process, with low emissions and waste, as well as through resource efficient energy consumption. These are achieved through a systematic approach to environmental protection, based on the requirements of ISO 14001 (http://www.quin-automotive.com/ro).

Looking at Table 1, it can be noted that the Rolem Company had an upward trend in the period 2010-2014 in terms of turnover. Thus, in 2014, it achieved total sales of 236,83 mil. lei. The same can be said about its competitor, the Quin Company, which had a turnover of 407,27 mil. lei in 2014, double than the previous year.

Indica-tors	**2010**		**2011**		**2012**		**2013**		**2014**	
[mil.lei]	Rolem	Quin	Rolem	Quin	Rolem	Quin	Rolem	Quin	Rolem	Quin
Turnover	53,79	143,51	121,25	155,65	186,55	211,98	159,41	270,82	236,83	407,27
Total income	63,82	153,87	138,37	163,56	208,23	216,40	171,72	283,88	251,53	415,93
Total expenses	65,62	141,27	143,32	153,31	212,95	198,19	167,82	263,67	255,63	359,19
Gross profit	-1,79	2,6	-4,95	10,24	-4,71	18,20	3,89	20,21	-4,09	56,74
Net profit	-1,81	11,11	-4,95	8,43	-4,71	15,18	3,89	16,62	-4,09	47,46
No. of employees	717	691	640	733	619	843	577	1,247	585	1,550

(Source: http://doingbusiness.ro/ro)

Table 1. *The Rolem and Quin companies financial ratios*

In terms of the net profits of the companies over the last 5 years, the company Quin had very good results, achieving 47,46 million in 2014. The Rolem company recorded losses of about 4 million lei a year in 2010, 2011, 2012 and 2014. Only 2013 recorded a net profit of 3,89 mil. lei.

The Quin Company hired each year new staff; it started with 691 employees in 2010 and it reached 1,550 in 2014. The Rolem Company, however, had cutbacks, due either to the fact that the orders taken diminished, or because staff did not want to stay.

Thus, according to financial indicators, it can be noted that the company Rolem had poorer results as compared to its competitor, Quin, due to several factors.

3. Brief Description of Standard 14001- Environmental Management System

ISO 14000 is an international standard that allows organisations (companies, in particular producers of goods and service providers, research institutions, other legal persons) to better know the processes within the enterprise and to minimize environmental impact, especially on the air, water, soil etc. It does not refer to a

specific product or service, but to the organisation in general, to the production process, to the extent to which the organisation knows and complies with environmental legislation.

The declared aim of ISO 14001 is to support environmental protection and prevent pollution through a systematic environmental management on the areas and activities that have an impact on it.

- ISO 14001 aims to provide organisations with all the elements needed to build and effectively implement an environmental management system. It is applicable to any organisation wishing to implement, maintain and improve an environmental management system regardless of its type and size (http://calitate-management.ro/).
- ISO 14001 provides a tool that allows the organisation to achieve and systematically control the level of environmental performance that it has set.
- The ISO 14001 standard defines what needs to be done for a better environmental management, to propel the company among the organisations taking an active part in protecting the environment while improving the company's image.
- ISO 14001 has the following basic characteristics (http://www.cqm.ro/cqm-ro):
- It is a generic standard being applicable to any organisation.
- It is a forward-looking standard with a proactive, preventive approach.
- It is a continuous standard involving implementation and then continuous improvement.
- It is a systematic standard based on documented methods and procedures.

The benefits of implementing an environmental management system ISO 14001 are (http://www.iso.org/iso/catalogue_detail):

- Improved environmental performance through the organisation.
- Easy integration into a quality management system.
- Legal safety due to the systemic observation of the environmental legislation in force. Ensure compliance with certain quality procedures. A company certified ISO 14001 (ISO 14001: 2004) must consider certain procedures for quality and environmental compliance. These include compliance with environmental policy, planning, implementation and operations of each action, each party verification and revision management.
- Enhancement of employee involvement, motivation and commitment.
- Cost savings through a systematic and proactive thought and action. Thus, costs are reduced by streamlining how the company uses energy and water.
- Increase in customer confidence, government agencies and insurers. Customer trust is particularly important because all sales are based on that trust. Once they get confidence, the chances are that some other customers will purchase services from the company as well. Given that many people worry about the environment, a certification ISO 14001 can be a great addition to customer confidence.

The systematic approach of ISO 14001: 2004 requires organisations to pay attention to all areas where their activities have an environmental impact. And this can lead to benefits such as the following:

- Reducing the cost of waste management;
- Savings in energy consumption and material;
- Lower distribution costs;
- Improving the company's image for the legal bodies and organisations, customers and public organisations;
- Necessary framework for the continuous improvement of the environmental performance;
- Providing access to auctions (increasingly more organisers of auctions require the use of an Environmental Management System certificate as a condition of selection).

4. Implementation of the Environmental Management System in the Rolem Company

The company is located, unlike other companies in the industry, close to the city centre, and not at the periphery, as is customary. Although in 1994, when the company was founded, there were not many buildings around it, currently the hall is surrounded by houses, buildings, shops etc. Thus, the company had to develop a very efficient system for reducing pollution. Although this system was very costly, the investment has brought many benefits to both the company and the residents of Codlea. Also, as compared to the option of relocating all the halls, costs were much lower.

The most problematic in the Rolem Codlea company is the varnishing sector due to substances used here, because they are the most toxic and clearly the most polluting. The production processes carried out in the hall generates specific waste for each separate activity, including paper, cardboard, polystyrene foam, foil, plastic packaging, electric and electronic equipment, printer toner, oil motor cars, scrapped tires, packaging containing residual paints and varnishes, absorbent material impregnated with residues of varnish and paint, slam, lake, wastewater.

The containers used for the separate collection of different types of material are inscribed with the name of the material / materials that are designed and marked in different colours by applying adhesive film.

The waste products are collected, transported and discharged for definitive disposal / storage by the authorized companies with which the company signed contracts.

To reduce pollution in the varnishing sector, the Rolem Company uses a central air handling of high performance, model Utaka 800–758.2 kw–51150 m³ /h.

The central ventilation with heat recovery Utaka 800 - 758.2 kw - 51150 m³ / h is an air handling unit with heat recovery heat pump, specifically built and

designed to save energy and also to improve interior air quality. Due to the heat exchanger aluminium plates and to the heat pump, the recovery of large amounts of heat can be achieved, which reduces power consumption and provides high efficiency with low noise. The aluminium plate heat exchanger offers high thermal conductivity, which is efficient and highly proficient. Thus, the heat of the exhaust air is transferred to the air intake. This system of ventilation with heat recovery provides fresh air from the outside, typically using only the plate heat exchanger at a temperature of 30 ° C in summer and 12 ° C in winter.

Due to the high efficiency heat pump with built-in ventilation, the plant can get fresh air intake at a temperature of 20° C in summer and 25° C in winter, creating comfort. This allows lower power and heat consumption, thus reducing heating costs during the cold season.

The price of this ventilation central with heat recovery amounted to 350,000 lei. But the biggest costs were the materials necessary for the assembly, the installation itself, the automation required (the proportional adjustment of the air flow through valves control operated via the actuator, the setting of the water circulated through coils preheating / heating / cooling, humidity control etc.) and the project specialist for the installation and commissioning of the plant, all costs reaching over 500,000 lei. Of these, the highest costs were represented by the necessary mounting materials (250.000 RON), the facility itself, the requested automation (15,000RON) and the payment of staff (85,000 RON). Another 150.000 RON was represented by the cost of the project for the central installation (the firm's internal sources).

The production process involves the use of paint booths (KFS type L-1000) requiring rinsing and washing operations, processes generating process water. The waste paint flows into the water collecting container, placed on the outside and connected with the flotation device for floating coagulated lake, which is clarified by means of a pneumatically actuated disc. The basin is made completely from stainless steel sheet. The ASP-800 containers are used as residual paint containers.

The cooling circuit is a closed circuit which does not produce wastewater. Sewage and waste are discharged through storm drains, processed filtration and purification station. By agreeing to take over waste water into the city sewerage system (by agreement no. 2054 / 03.29.08, issued by Compania APA Brasov), the necessary quality indicators must be complied with.

To reduce emissions of pollutants in water and air, the following features were considered:

a) Wastewater treatment plant fitted with mechanical stage physico-chemical, biological and advanced disinfection, proper treatment of wastewater.
b) Air handling plant fitted with physical and biological treatment step, to reduce leakages / unguided by specific odours.

Also, after upgrading, the facilities were:

c) Neutralization plant SNCU-250 tons / day, consisting of: vats reception-200t-2 pcs. raw materials, straw 20-25t / h-1 pc., Canon mc-14 1pc., Sterilizer 8t / batch-2 pcs. , screen 10 mm-1 pc., Tricantor 10 m³ / h-1 pc., 1 mm sieve-1pc. separate 2 pcs., Vaporizer 4100 l / h-1 pc., Hair 10t / h-1pc., die 8 to 10 t / h 1pc., intermediate storage tanks, Worm conveyors.
d) Installations for related activities: apart from the proper production facilities, the company also owns installations for usual industrial operations, such as:

• Water-sewer installations, plumbing;
• Heating installations;
• Indoor and outdoor lighting installations;
• Equipped first intervention kit for labour protection and safety;
• Transport and handling equipment.

5. Results of implementing ISO 14001 standard

The implementation of ISO 14001 provided a number of benefits to Rolem Codlea, including:

• Improved organisational performance
The standards have ensured that the management system have been fully aligned with the business strategies of the organisation. Thus, used as tools of business management, they have improved performance and offered real value, integrating performance indicators since the early stages.

• Improved risk and opportunities management
New aspects of risk and opportunities management outlined in the management systems have allowed their use both as a management tool and as a performance accelerator. This has ensured that Rolem has been able to identify risks and opportunities more effectively, thereby improving operational efficiency, reducing duplication and saving both time and financial resources.

• Improved image of the Rolem Company
The implementation of standards has sent a clear message to existing and potential customers that the organisation has an innovative and proactive approach in terms of quality management and environmental management through systems. Thus, the trust of customers and stakeholders has been improved.

• Increased involvement
It was much easier to promote changes within the organisation, given they were among the first to implement the standards, and not among those who complied with the new requirements at the end of the transitional period. This has ensured that Rolem has had more time to allocate necessary resources.

The analysis of the quality indicators of environmental factors on the ROLEM site in 2015, after the implementation of the Environmental Management System, showed the following:

- For the environmental factor air: the indicators analysed does not exceed the maximum allowable amount considering the reference legally provided;
- For the environmental factor soil: the impact on soil and subsoil is minimized thanks to the measures adopted at the moment of their constructions and land systematization;
- For the environmental factor water: there are no serious potential sources of pollution on the water systems, its potential impact on factor being limited to a high degree;
- For the environmental factor noise: even if at first there were houses around the factory, measures have now been taken to stop / improve its intensity.

6. Conclusions

Most manufacturers and suppliers are seeking quality and many of them are working hard to achieve that objective. Much effort goes to the verification and trouble-shooting of the failings and scraps during the manufacturing process. As it is known, the control can not solve the quality of a product. The quality of a product must be designed and manufactured.

Quality awareness should start from the product design idea, when identifying customer needs. This conscious effort of making quality must pass through various stages, from design to manufacturing, and even after delivery of the product to the consumer, the ultimate objective being to achieve a positive reaction to it. This requires the implementation of a quality management system.

The wood processing industry is considered as one of the factors of damage to all components of the environment, as a result of the intensive use of natural resources by this sector, the high energy consumption, production processes generating polluting emissions to air, water, soil and various types of waste, some of which are hazardous to the environment and human health.

The Rolem Company is concerned about environmental protection, that is why the company has adopted an environmental policy applicable to the nature of the activities, size and environmental impact, which will contribute to maintaining and enhancing the position and image held on the local market, improving the quality of activities carried out, advancing competition, motivating and making staff efficient, continuous improvement of environmental protection for its business activities, and sustainable and efficient use of resources and raw materials. The company has established an environmental management system in accordance with the requirements of SR EN ISO 14001/2004, integrated with the quality management system and the management system of occupational safety and health described in the Quality, Environmental, Health and Safety Manual.

Rolem environmental objectives are periodically reviewed by management at the highest level to determine whether the environment policy is appropriate, the measures being taken accordingly. Through the authority delegated to the management representative, through the activity of the person in charge with environmental protection, and through the work of each employee, the implementation of the environmental policy is ensured. This is communicated, understood, followed and maintained by all employees at all workplaces and at every level of the organisation, and is available to all company employees and the public.

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