

BABES-BOLYAI UNIVERSITY CLUJ-NAPOCA
FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION
DEPARTMENT OF MANAGEMENT

DOCTORAL THESIS

**CONTRIBUTIONS RELATED TO THE COMMERCIALIZATION
OF PETROLEUM PRODUCTS BY QUALITY MANAGEMENT**

- SUMMARY -

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Keywords: quality, competition, energy security, oil product quality management, quality management system, customer satisfaction, conduct quality, complementary products, processes, marketing of petroleum products, at the highest level management, process analysis, continuous quality improvement, monitoring and measuring, tracking, preventive action, corrective action, economic efficiency, as stated, product/ service so inconsistent.

Introduction

The Doctoral Thesis titled “**Contributions to improvement process of commercialization of petroleum products through quality management**”, examines the marketing of oil products without dealing with exploration, production/operation, processing/ refining and transportation of petroleum products.

After studying the specialized bibliography available in our country, and as a result of individual research that I have done, I found that so far, no studies or research has been done in order to prove that the implementation of quality management leads to improved marketing of petroleum products, hence, not much has been done to date in this field.

Research Motivation

After researching the literature, foreign and domestic, I noticed that there have been some aspects and basic directions of direct application of mathematical statistics in quality control have been elucidated and they are: quality control of batches of products at the reception and/ or delivery and control of manufacturing processes - that control the flow (control during manufacture). What emerged however in recent decades, is a strong requirement for proper design, documentation, implementation, maintenance, continuous improvement and quality management, as well as systems certification as a guarantee that manufacturing or marketing products is made according to customer requirements, specifications standards and specific regulations.

A particular problem posed by these changes in management of organizations dealing with the petroleum marketing business is to change staff behavior, to increase the effectiveness of their behavior, whether it is managers' behavior to that of individuals, groups or even the entire organization as a whole.

To resolve this problem we should, in our view, address to the design, documentation, implementation, maintenance and continuous improvement of quality management along with system certification as a key feature that focuses directly onto behavior rather than trying to change personal characteristics such as personality. This would lead to immediate benefits: people may become aware of the exact behavior expected of them and can therefore manifest themselves accordingly.

In the thesis I intended to elucidate the lesser known aspects related to the application of quality management as the contributing factor to improving the marketing of petroleum products.

Research Methodology

My approach was based on the issues and the context set out above and by the fact that for Romania, sustainable development is a possible option, however, also in my opinion, the only reasonable prospect to become a nation of quality organizations

which contribute substantially to the establishment is a new paradigm for the development, through the confluence of economic, social and environmental issues. This view is enhanced by the status gained by Romania in the European Union as a Member State.

The purpose or the primary objective of this paper is to highlight the contributions that quality management implementation in the marketing of petroleum products will have.

Research objectives

In order to achieve the research titled "**Contributions to the improvement process of commercialization of petroleum products through quality management application**" I set the following objectives:

O1. - Identify historical milestones and the development prospects of the Romanian oil industry

O2. - Identify and quantify the contributions to improving the marketing of petroleum products standards;

O3. - Identify the main changes in performance by introducing quality management in the petroleum products trading company;

O4. - Identifying effective implementation of quality management system of oil products trading company;

O5. - Identify changes to the implementation of quality management at PECO BIHOR S.A. - Making a case study in S.C. PECO BIHOR S.A.

In order to achieve the above objectives we undertook a comprehensive study of bibliographic and documentary research by isographic, consisting of books, scientific articles, databases, statistics, reports of companies, periodicals, studies of international organizations (EU, OECD, WTO), etc.

We have proposed an analysis of contributions to the implementation of quality management in improving the marketing of petroleum products and for this purpose we focused on the following approach:

- History and development perspectives of the Romanian oil industry;
- Contribution to improving standards of marketing petroleum products;
- Quality management in a petroleum products trading company;
- Efficiency of implementation of quality management system in companies marketing petroleum products.
- Implementation of Quality Management System (QMS) to S.C. PECO Bihor.

The first chapter aims to analyze historical data and documentation found during individual studies on the literature in this field. This analysis showed, firstly the

objective necessity of introducing quality management in all activities to obtain the finished petroleum products, from prospecting, exploration, extraction, transport and marketing stages up to consumption and to ensure sustainable development. We have identified oil reserves prospects, and ultimately contribute to improving the implementation of quality management of oil products.

As noted in the above text, research motivation, most behaviors are learned and the second chapter - the contribution of standards to improve the marketing of petroleum products – will solve this problem. We also stressed the need to know the role of bodies, associations of standardization, definition and knowledge of standards, their content, their role and types of standards that are used in marketing petroleum products.

Chapter Three - quality management in petroleum products marketing companies – in the text, we have discussed in terms of the main types of petroleum products, petroleum products marketing management, quality management systems in the marketing of petroleum products, the risk assessment petroleum products marketing companies, the maintenance and improvement of the quality management system.

This approach stressed the need for implementation of quality management in order to help improve the marketing process.

The fourth chapter highlights the effectiveness (contribution) quality management system implementation in petroleum products marketing companies by addressing concepts, factors, indicators, the direct and indirect influential quality management system on decisions taken by corporate governance, economic and social efficiency of QMS implementation and measures for the implementation and generalization of the system.

In the last chapter we deal with a study of quality management system implementation at a petroleum products trading company - PECO BIHOR - addressing publication and distribution of quality management system documentation, the establishing and confirmation of responsibilities, granting authority, staff training - the main factor in implementing quality management system, monitoring implementation, checking the quality management system implementation.

In all stages of research, we thought we wanted to improve the basic premises of the previous stage, through current or subsequent research.

We started this process and I reached the conclusion only after personal practical actions and documentation that I did. I noticed that most approaches as well as the objectives of the researchers or their actions are determined primarily by their professional field. I found in the Romanian literature and research documentation that we approached, contributions concerning the quality management implementation process as well, meant to improve the marketing processes. After all, I had to establish the extent to which the implementation of a quality management system can be accompanied by a change, an improvement in processing the oil products.

We examined and made a deeper analysis of the situation of firms trading oil products in the past and those procedures have emerged as to impact positively on the

contribution to a quality management system as well as the levels and units of analysis in this approach.

We answer the research objectives by the way I approached the subject of research: inductive or deductive, to requests for research or hypothesis, and the units of analysis, type of study, as a consequence of the previous factors, sources of data to be collected and to respond to validate or reject their own assumptions. Research strategy was considered the analysis, and that gave structure to the investigation which led us to think about data collection methods and sources. Closely related to the methods and sources are the indicators – or the variables - that I selected to answer the questions.

We had a variety of indicators, “core” (quantifiable) indicators and “circumstantial” (hard quantifiable) that worked which gave us the chance to obtain the desired information and conclusions presented in the present thesis. For our work the unit of analysis is the organization, the petroleum products marketing company.

The need and opportunity theme we considered as the basis, is important for establishing a better quality, is a complex process that could lead to market discipline and structure that in turn, allows them to adjust the relationship between supply and demand in general, as well as to change organizational culture and this concept may change the basic model for a quality petroleum products marketing company.

CHAPTER 1

HISTORY AND PERSPECTIVES OF THE ROMANIAN OIL INDUSTRY DEVELOPMENT

1.1. History of the Romanian oil industry development. In light of the research topic - I addressed in this chapter the research method - the interview.

We relied on interviews and discussions with specialists - famous personalities in the Romanian oil industry gaining in this way countless and important information.

After analyzing information from data provided by distinguished speakers and those retained from studies / individual documentation on the history of Romanian oil, we recorded the important parts of oil and gas industry in Romania, from the beginnings to the present (1857 -2010) and during more than 150 years of existence.

"World oil reserves are estimated at 1800 - 2200 billion barrels, of which approx. 1080 billion barrels have been extracted during 1857-2005. 1500-1600 billion barrels still remains to be extracted, of which 1000 billion barrels are proven reserves and other reserves are the potential 500-600 (possible and probable). About 50% of total oil consumption was recorded in the period after 1984, and 90% of this "total" was achieved after 1958. "¹

1.2. Romanian oil industry development and prospects

The new perspective in the Romanian oil industry is the concept and the development of "energy security through cooperation. It is obvious that the energy supply of the European Union (EU) is highly dependent on oil imports and the stability of the markets of Member Union has to be given some high degree of security. Although the European Commission (EC) recommended and planned diversification and increase domestic resources through indirect means of renewable resources (which should reach 20% in 2020), European dependence by oil imports, will remain not only important, but significant for its growth. In neighboring Romania, oil and gas resources of the wider Black Sea, Caspian Basin and Central Asia are considered to be a solution to the energy future of Europe and the world as a whole.

¹ Dumitriu, V., Buliga, G. - *The European Union and the issue of oil and natural gas* - SIPG ALMANAC 2009, Ed "SIPG", Bucharest, 2008;

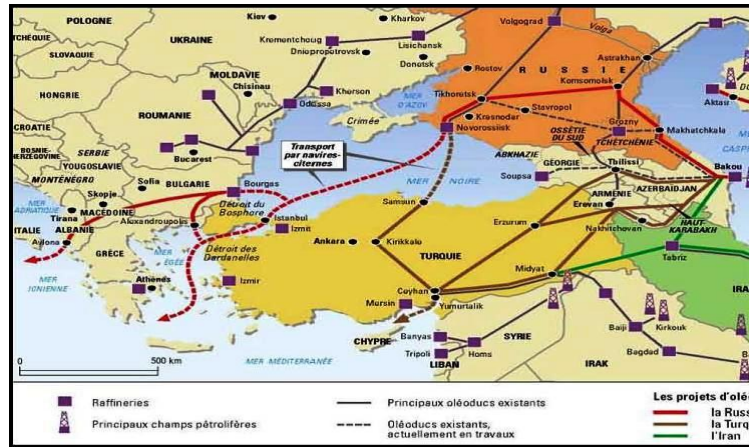


Figure no. 8 Oil and gas route map²

After a brief look at the map the routes of oil and gas, which depends on the energy security of the European Union, including Romania, we could say that energy balance, global economic and strategic importance given the size of oil and gas sources for the world.

On Romania's energy security require the following objectives: the need to review energy policy strategy, which will be focused in particular on security of energy supply, reducing dependence on imported Romania's energy resources, and natural gas, reducing dependence a single supplier and supply diversification, maintaining a balanced mix of energy balance in the structure while developing renewable energy-based or conventional.

Primary structure of Romania's balance of resources will have to undergo a series of changes the dynamic, real-time to accommodate the influence of factors such as rising hydrocarbon product consumption, increasing participation of nuclear energy, coal and renewable energy, energy efficiency diversification of external sources of primary energy, stimulate investment in the energy sector to modernize and streamline it and in this context, pursuing the reduction of negative environmental impact; creating a proper institutional framework for the energy sector (eg Ministry of Energy and Resources). To meet these challenges we believe that the Romanian authorities should promote the concept of critical infrastructure in the petroleum activities on all levels, namely the exploration, mining, processing, marketing, with all related facilities, to enjoy special treatment.

1.3. The current oil crisis: characteristics and growth prospects of hydrocarbon reserves

Effects during the current economic crisis have influenced energy and have manifested in all the fields of national economy, including the marketing of petroleum products.

² Archive magazine "Oil and Gas Journal", Ed USI, Ploiesti;

Taking the test early, we recognized the economic crisis in Romania, beginning in 2008 and continuing until the end of 2010, mostly through the developments in prices of crude oil and major petroleum products that were as follows:

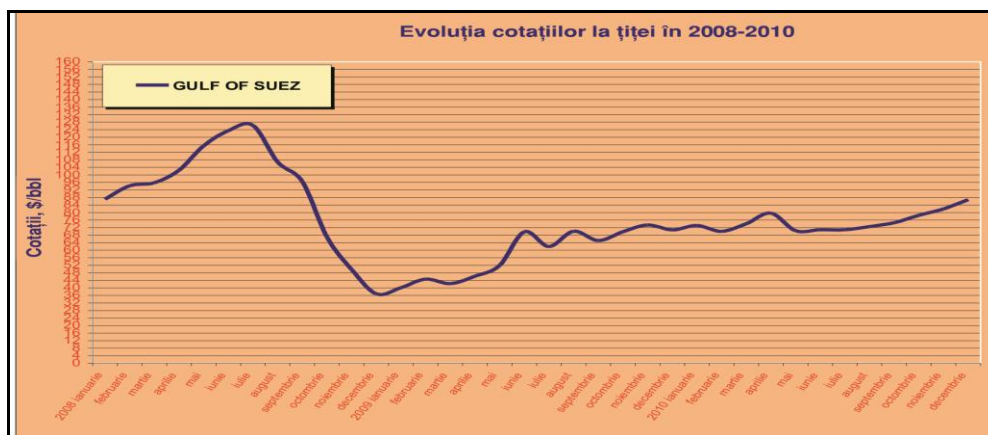


Figure no. 9 Evolution of quotations from crude oil between 2008 to 2010³

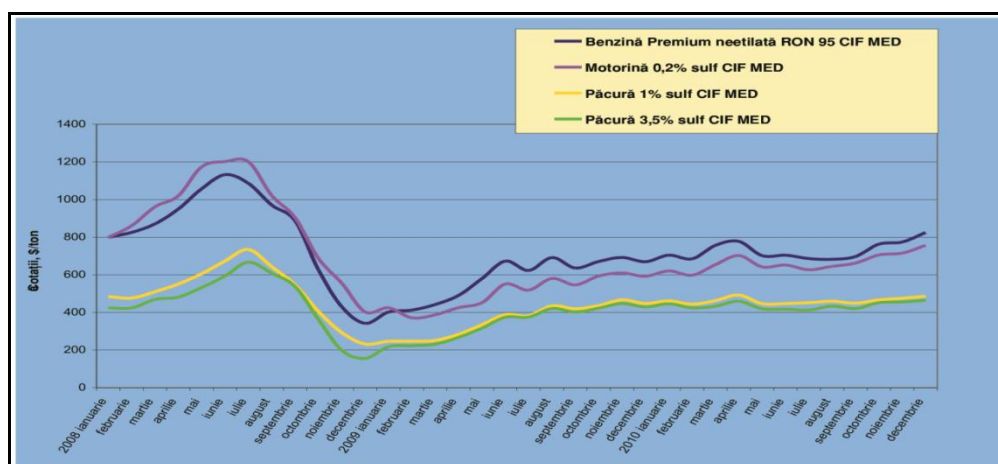


Figure no.10 Evolution quotations from oil products between 2008-2010⁴

World stock market quotations, prices for crude oil known absolute maximum in March-June 2008, respectively 104-149 \$ / barrel (\$ 728 / 1045 / tonne) and oil products, there have been quotes maximum price for the period April to July 2008, as follows: Premium gasoline neetilată in July 2008, was cca.1150 \$ / tonne, diesel 0.2% CIF Med. cca.1200 \$ / tonne, and the rating on oil reached \$ 720 / tonne. Equivalent in lei, return rates at the time, meant about highs. 2.15 Euro/liter for gasoline and 2.2 lei/liter for diesel.

After the spring of 2008, crude oil price began to decline, reaching a minimum period in December 2008, 39 \$ / barrel and the price of oil products continued to decline and reached a minimum in the same month, 400 \$ / tonne for diesel and gasoline and \$ 220/tonne to oil. At the end of 2010 (December), stock market prices of crude oil

³ Archive magazine "Monitor Oil and Gas", 2008-2010, Ed."SIPG", Bucharest, Romania;

⁴ Idem;

stood at approx. \$ 96 / barrel (or \$ 672-675 / tonne), while the quotations of oil products were: Premium gasoline - \$ 810 / tonne (cca.2, 10lei/litru), diesel - \$ 790 / tonne (cca.2 , 05lei/litru) fuel - \$ 475 / tonne (cca.15-20lei/tonă). Analyzing the main types of fuel prices at the pump, practiced by the major operators in the market in our country in 2008-2010, according to fluctuation of the reference currencies, euro and U.S. dollars respectively, find that they have made changes as follows: In January 2008 - December 2010 prices saw an upward trend, with almost weekly fluctuations. Overall, the average increase in the price of unleaded premium fuel was about 30%, ranging from 3.52 to 3.15 euro / liter to 4.54 to 4.73 and even 5.89 euro / liter (Luk Oil) at the end of the period, with a minimum period of 3.3 lei / liter in the summer of 2008;

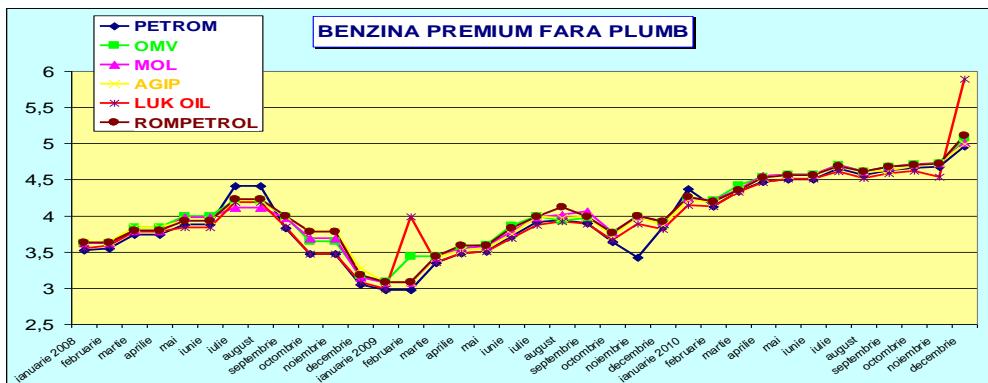


Figure no. 11 Premium unleaded gasoline price change to the final consumer on the fuel market in Romania during 2008-2010⁵

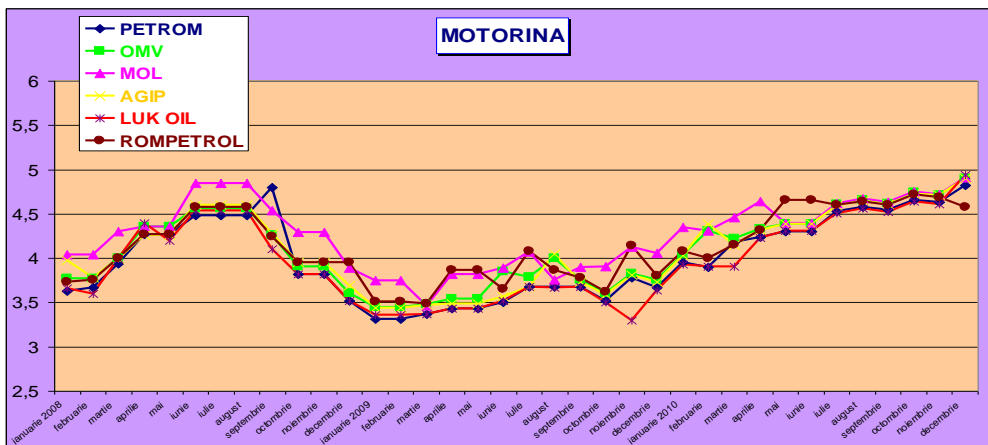


Figure no. 12 Change in price of diesel fuel to the final consumer market in Romania in the period 2008-2010⁶

- For diesel during the same period, price increases have been a percentage of cca.22%, with some smaller fluctuations than gasoline, but on the whole higher than

⁵ Idem;

⁶ Idem;

the price of gasoline (there were variations from 3.30 in summer year 2009 to 4.75 euro/liter in December 2010);

- Rises every time the initiative was a group OMV Petrom, followed by increases of the same amplitude at other companies/firms in the fuel market. Long time the highest prices were maintained at Petrom, with a few brief exceptions, the absolute maximum was recorded at Lukoil (in January 2009 and December 2010). Gasoline and diesel prices charged by major companies / firms, operators on the Romanian market, ranged up to 0.10 to 0.30 lei/liter, which leaves room for assumption of the existence of a cartel policy.

This stage is characterized by the extensive globalization, which also includes Romania as a E.U. member state, where free competition in domestic markets have been replaced by large corporations with integrated production activities, marketing, finance, insurance, reinsurance etc., all that favor a monopole policy having the main purpose to increase sales volume and maximize profits, leaving the background issues behind, or even ignoring the means to obtain the so valued customer satisfaction.

Bellow we can find a revision of the Romanian national policy and The European Union in reference quality.

CHAPTER 2

CONTRIBUTION TO IMPROVING STANDARDS OF PETROLEUM PRODUCTS MARKETING

In the second chapter we analyzed the contribution of standards to improve the marketing of petroleum products. We stressed the need to know the role of the Romanian certification, accreditation and standardization - RENAR and ASRO - economic development and optimize performance of Romanian companies on the national, international and European, in particular, the definition and knowledge of standards, their content, their role and types of standards that are used in the marketing of petroleum products. Fundamental requirements and standards refer to terminology, metrology, conventions, signs and symbols in petroleum products, they must be learned and applied. Without such knowledge of standards for testing and analysis methods that measure the characteristics of petroleum products, we can not talk about finding quality management contributions to improving the marketing of petroleum products.

Important are also the standards that define the characteristics of a product, product standards or specifications for service - the standards for service activities, and performance thresholds that are to be achieved (appropriate use interface and interchangeability, health, safety, environmental protection, standard contracts, documentation accompanying products or services, etc.). It should be known also, that the improved standards shall define the functions of a trading system for petroleum products (firm, company etc) and the relation between these structures and activities (management and quality assurance, maintenance, value analysis, logistics, quality management, project management or systems, production management) system which is otherwise support the thesis research. A quality management system approach encourages organizations to analyze customer requirements, define processes that contribute to an acceptable product for the customer and keep these processes under control so that the guarantees offered to the customer that the products / services meet quality stated. A quality management system provides the framework for continuous improvement to increase the likelihood of raised customer satisfaction and increase the satisfaction of other stakeholders. This system provides a reliable organization and assures its customers that it is able to provide products that consistently meet the requirements. The Quality Management System Standards refers to the quality of the goods declared in good faith, fair statement considering the trader. Customer finds, unfortunately, the accuracy/ inaccuracy of quality petroleum products often after purchase. Note that their marketing petroleum products and a strong social component. If the oil and gas industry, for companies that specialize in exploration, pipeline construction, transport and refining of oil and gas products is a standard - ISO / TS 29 001 - QMS unique referential, the marketing of petroleum products such standard has not was developed. The current trend of globalization, by which large corporations focus in international business, international trade liberalization and reducing the powers of national governments, brings in addition to the benefits of

better management of the planet's natural resources and environmental protection, but also brings a series of negative economic consequences by imposing protectionist legislation, incomplete and unjust rules, and these may seriously distort domestic markets by eliminating local competitors in the goods and services (practicing monopoly policy), marketing of irregular, counterfeit, corruption, fraud, piracy, etc.. Initiative emergence of quality management standards is appropriate and necessary, but their content will be improved in parallel with the development of national quality infrastructure. A review of ISO 9000 standards and other industry standards, taking account of major changes imposed by globalization in trade practice and beyond. Research conducted showed that the Romanian market: currently there is no law on oil trade and no trade law in general, commodity product is not defined (which can be sold) there is no obligation to declare/ product approval (new product or imported for marketing in the Romanian market)/ registration of the mark or product, the characterization of the conditions of realization, the materials used and labor necessary skills involved, quality certificate, etc. mandatory.

CHAPTER 3

QUALITY MANAGEMENT SYSTEMS AND THE MARKETING OF PETROLEUM PRODUCTS

3.1. The main types of petroleum products

The supply of petroleum products, liquefied petroleum gas (LPG) and complementary products in the market includes products in the form of marketed goods (petrol, diesel, LPG, light fuel oil, petrol, oil, auto parts, auto accessories, additives, etc.) and specific services associated to retailing them (car wash, oil change, service at the doorstep of LPG cargo, hotel, restaurant, etc.).

The classification and definition of classes of petroleum products is standardized in ISO 8681:1992 STAS Romania - Petroleum products and lubricants - System of classification - Definition of classes of goods. The standard was approved on 28 June 1991 with effect from 1 January 1992 and replaced the STAS 6985/2-84.

The range of petroleum products, and lubricants with similar destinations is has a very large and varied composition, based on properties and field use. International Organization for Standardization has developed a classification of products covered under the scope of use (for lubricants) and the kinds of the products (fuel/fuel). Each product is linked to a host of other products. They meet all kinds of specifications, from satisfying basic needs to those that meet the individual needs of consumers.

For the purpose of this paper, I propose their ranking to be done on seven levels:

- *Product range and market needs*
- *Product Family*
- *Product Class*
- *Product line*
- *Types of products*
- *Trademark*
- *Type of Product (Article)*

There are also two other commonly used terms. The system designates a category of goods produced differently, but “related” to each other. For example: a company sells complementary products: motor oil with oil filter and oil change service. The term product mix (or product assortment) means all the products and items that the company provides to the buyers.

Typically, classification of products, namely oil, is based on the characteristics of each type of product claiming a specific strategy:

a) **OIL PRODUCTS** : gasoline, diesel, liquid fuels for heavy industrial outbreaks, mineral oils, waxes, paraffin and ceresin, bitumen oil, gas extraction, White Spirit refined, artificial technical grease;

b) **Liquefied petroleum gas (LPG);**

c) **Complementary products** that can be classified according to their durability and function of tangible or consumer buying habits.

Having known the basics, I could make analysis decisions on product mix, product lines and individual products that the company marketing oil products offered for sale to it's buyers. We appreciate that product mix is called a whole range of product items and product lines that the company for marketing oil products offered for sale to buyers. For example, the company's product mix consists of three strong lines: petroleum products, complementary products and services LPG cargo. Company's product mix is characterized by a certain width, length, depth and consistency. All four dimensions of product mix are important for defining the marketing strategy of the company products. In general, planning of product mix to be sold meet service marketing firm that using the information provided by marketers, its members must determine which product lines will be expanded, maintained, operated and dismantled.

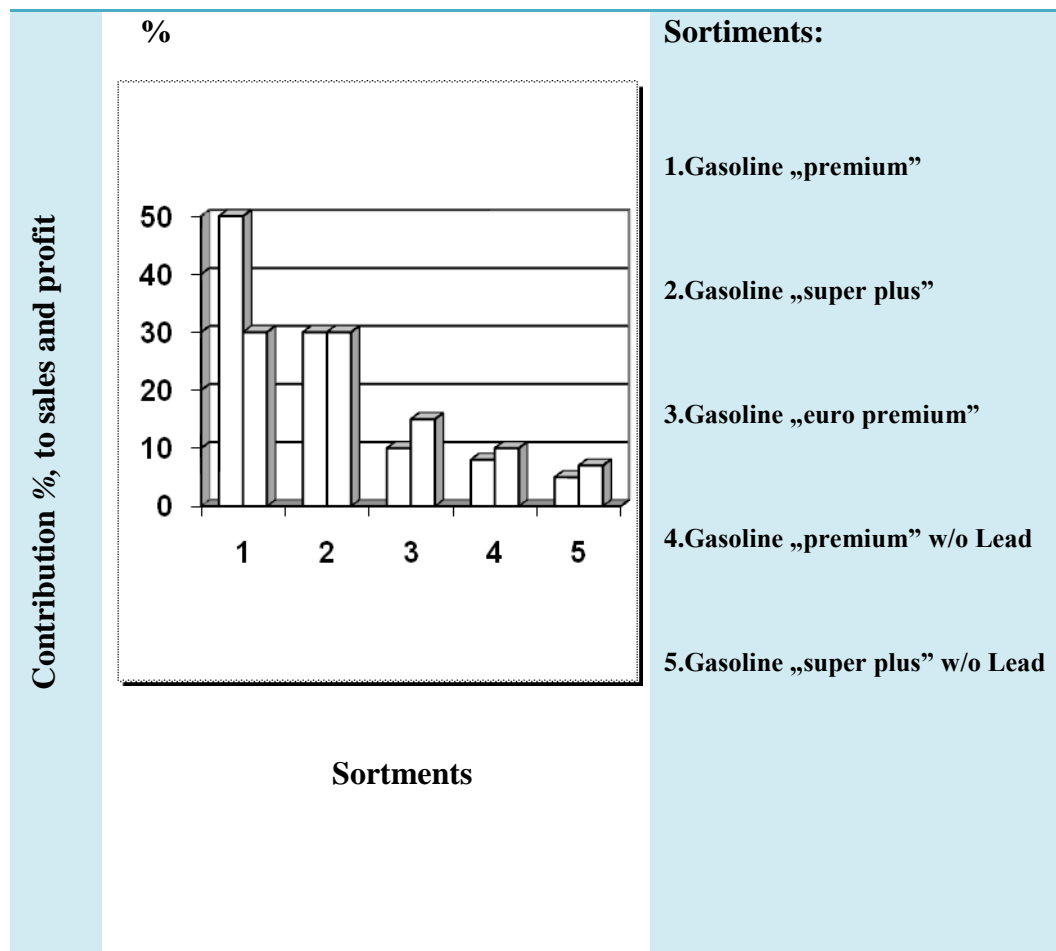


Figure No. 15 Valuation model for a product line.

The head of the line product should look and how it is positioned in the market compared to competitors' product lines.

pay a surcharge, and who benefits from the sale of an improved product that will quickly become the expected benefit for the company as well as for the buyer.

Quality, quality assurance and quality management are concepts, themes that are emerging in an increasingly central task for any company that wants to be a player in the global market. Quality has become a matter of survival. The productive organizations, and the service centers are also facing domestic markets, but especially international markets, with competition becoming stronger. A successful organization is the one that places the client's individual needs at the center of its efforts.

3.2. Petroleum products - marketing management

We examined in a unit of oil production, the Quality Management System in order to meet the requirements of ISO 9000, as well as the integrated quality requirements, posed by the environment and safety and appreciated its implementation as a change associated to the improved document management. Through theoretical analysis of the standards and requirements, specification and services carried out in a company selling petroleum products, action that revealed the following:

- The oil industry is now the main branch of energy and related products and services that in principle are considered public.
- Oil companies are usually large corporations, are in a continuous process of globalization through mergers, vertical integration, at this time, controlling all sub-branches of the processing and sales operations.
- Due to the specificity, the construction and certification of QMS in the field, can only have a holistic character, but must be addressed both at the corporate level and within each horizontal branch entities (including each unit as is the case of PECO BIHOR SMC).
- The basic objectives of a corporation, consists of increased turnover and profit, generating monopoly policy that ignores customer satisfaction. The Cluj school concept, the modern management is constantly under pressure to resolve the dilemma "with fewer resources, financial and human resources to satisfy the growing number of necessities (needs) social-human." The problem of petroleum products is not only a corporate component, but also a social component. Therefore, national governments have a duty to protect consumers against abuse of monopole by creating specialized institutions to promote laws and regulations (Office of Competition, Consumer Protection Agency, etc.), Which may require certification of a QMS.
- Petroleum products market in Romania, competition is relatively weak, a few large companies: OMV, Petrom, Rompetrol, Moll, Luk Oil and ENI holding oil trading stations, area, in most counties and controls over 90% fuel in the Romanian market.
- The central issue of a Quality Management System for a company selling petroleum products, is the ability to always offer the consumer the type of fuel needed, the same quality and same origin, to organize the type of transfer services asked oil (petrol, diesel, LPG, oil, etc.) container customer promptly and professionally to provide specific complementary services and products competitive.
- In our opinion, the company for marketing oil products is part of the scope of the provision of traditional services. In this sense, thought management should result in

the sale of petroleum products, complementary products, services, oil change, cleaning and maintenance of motor vehicles, hotel and restaurant etc.

- Appreciate that management intends to work outside usual business of marketing petroleum products: training, pricing, distribution and promotion of services to customers and internal management refers to an activity of the company for marketing of petroleum products: the training and motivation of their employees in order to provide quality services to consumers. There are also views it considers that the main contribution of the company's sales department for marketing of petroleum products is the "ability" to determine each member of its employee to learn and apply in practice management optics.

- One of the most important ways that highlight the company's service is the continuous improvement of their services compared to the competition. To achieve this, it must provide the desired level of consumer service and even exceed that level.

- The current economic environment, strong competition, we believe that all organizations must work energetically to improve performance and competitiveness domestically and internationally.

- The quality has become a matter of survival. The success of the company for marketing oil products depends on its organic customer satisfaction.

- Consider that the development and implementation of quality management system in the company for marketing oil products should follow several steps necessary: identifying needs and customer expectations and product requirements, defining policy and setting quality objectives, identifying processes and establish responsibilities to carry out marketing and service quality objectives, providing resources necessary to carry out policy and objectives, planning methods for measuring and monitoring processes, using measures to evaluate the effectiveness and efficiency of processes, identifying means of preventing nonconformities and eliminating the causes their implementation of a process of continuous improvement of management efficiency.

- Appreciate that management at the highest level must use the quality policy as a tool leading petroleum products marketing company to improve its performance, given the level and type of future improvements and satisfaction expected and desired clients.

3.3. Quality management systems in the marketing of petroleum products

In the current economic environment, is highly competitive, all organizations must work diligently to improve performance and competitiveness on domestic and international markets. One way that can be devoted to achieve these objectives is the design, implementation and certification of a quality management system to effectively and efficiently manage all processes in the organization to provide products / services continue to improve competitive performance. It is extremely useful for marketing oil products company that intends to design, implement and certify its own system of quality management to have a set of tools to guide this enterprise. Company for marketing oil products, providing products and services related to marketing of petroleum products to meet customer needs and requirements facing increasing competition and increasing overall plan of growing customer

expectations consistent with the quality and services. Start from the premise that consumers will buy oil products, complementary, LPG trucks from the company which they believe offers the greatest value. These factors can be better planned and secured (controlled) if the firm operates using effective management systems. The current evolution of globalization quality products and services tends to reach a constant size worldwide. New challenges for business management success petroleum products today are growing. Success can be achieved only if a systematic approach and uniform processes. A successful integration of various systems management companies for marketing oil products that they want developed, depends essentially a good planning and effective implementation.

ISO 9001 does not include requirements specific to other management systems, but it allows oil products trading company to implement and develop management systems that can be correlated or integrated with quality management system.

3.4 Maintaining and improving Quality Management Systems implies continuous improvement of the quality management system performance and that is a permanent objective of any company marketing oil products.

In our opinion, it can result in improvements in both the change in the typology of petroleum products, the provision of services for petroleum products marketing and quality management system or even the company itself. The means that the company continually improves the effectiveness and efficiency of quality management system are: the use of quality policy and objectives, using internal and external audit results, analysis using data collected through monitoring and measurement processes/ petroleum products, the use of corrective actions and preventive utilization management review.

The quality policy is reviewed periodically by management at the high level to ensure that: is updated and appropriate business purpose, including management commitment to meet and continuously improve the effectiveness of management quality framework for establishing and reviewing quality objectives, it is communicated and understood by staff. Management at the highest level of quality objectives established leading to improved performance marketing company of petroleum products and periodically review the quality management system to ensure that it remains appropriate, adequate and effective. This review includes assessing opportunities for improvement and the need for change in quality management, including the quality policy and quality objectives. Internal audit is also used for independent evaluation of the quality management system and any process or activity. Management at the highest level ensures that all the corrective action or preventive, are used as tools for improvement. Corrective and preventive actions are included in the analysis of management.

We appreciate that such a process for continuous improvement can be used as a tool for increasing effectiveness and efficiency of internal organization for marketing oil products and improve customer satisfaction and other stakeholders.

Improving the effectiveness and efficiency of quality management, business performance is generally is achieved through the use of all means that are available to management for implementation of the quality certificate (declaration on quality).

CHAPTER 4

The effectiveness of implementing a quality management system in companies processing oil products

4.1. Concept, factors, indicators.

Efficiency is part of the rationality of human action. It manifests itself through the concrete form that requires the market to have a relationship between efforts (costs) and effects (results) in the fabric of any of society. Economic efficiency provides the widest range of concrete action that turns rationality into economic activity.

To increase efficiency and enhance competitive strength, the organization should take into account several essential factors, namely: knowledge and anticipation of market demand; promotion of modern technologies that result in increased activity; cost reduction; improving quality of the goods; choosing the best methods of management and management etc.

The increase or decrease of economic efficiency is closely related to the relationship between balance and imbalance in the economy, being the condition and expression of the economic phenomena.

The subject of this paper considers specific indicators in addition to quality, productivity and profitability, customer satisfaction - the feeling that the result of performance is a comparison (of results) of a product perceived expectations, as well as other indicators such as increased customer loyalty to the product, market share, reduced complaints and requests for "service" to LPG cargo, obtain higher prices in the market, the company's growth (increase the amount of income per unit for a period of time following the implementation of quality management system). Figure # 22 scheme and its forms of economic efficiency .

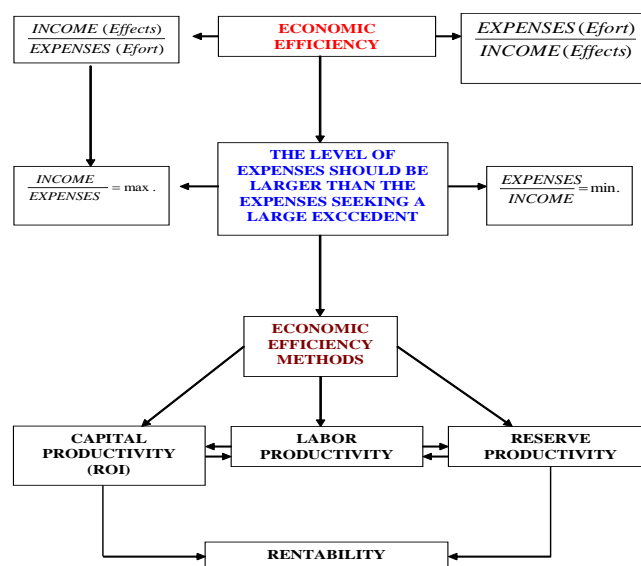


Figure no. 22 Proposed scheme of economic efficiency and its forms.

4.2. Direct and indirect influence of the Quality Management System on decisions taken by the management company for oil products

For a management system to be effective the society as a whole must be prepared to accept it and intensify it. This implies the existence of an infrastructure based control laws and bodies endowed with qualified personnel to promote fair competition and quality, and to punish violations. Company plans to have the objects of the marketing of petroleum products and related services to current work will allow to establish the value of sales and profits to be made. Portfolio Plan will include activities that will be removed in time and will be replaced by others.

It is considered that the company can cancel the existing strategic planning gap implementing Quality Management System and applying the following methods:

Development opportunities-intensive method is to identify new opportunities for the development of oil sales activities, complementary and LPG;

	Current products	New products
Current markets	1. Market penetration strategy	3. Product renewal strategy
New markets	2. Market development strategy	(Diversification strategy)

Figure no. 23 products to market expansion grid

Development opportunities through integration-method is to identify opportunities for creation/ acquisition related activities (restaurants, hotels, transport); It is estimated that in many cases, company sales and profits for the marketing of petroleum products can be enhanced by integrating upstream, downstream or horizontally in that field.

Developing opportunities through diversification - the method is the purchase of recreational activities (tourism, sports, etc).. Such a possibility requires, on the one hand, high attractiveness to the new field of activity and on the other hand, the company's ability to capitalize on the opportunity arose.

There are three types of development through diversification strategies: concentric, horizontal and conglomerate.

It is estimated that implementing the Quality Management System determines the company for marketing oil products to apply the proposed strategic planning process.

After defining the mission defined in accordance with the Rules of Organization and Operation and analysis of the company's internal and external environment for the

marketing of petroleum products is going to establish specific objectives for the planned period, this operation is called objective formulation. Objectives should be measurable, realistic, consistent.

The company should develop an appropriate strategy to achieve goals. Preferably the following strategies: the lowest total cost strategy, differentiation strategy, focus strategy. After setting the strategy for marketing of petroleum products company must evaluate programs that will support the line of action chosen.

As implementation of the strategy, the company must assess the results, to monitor the environment in which it operates. If the environment will change, the company will be forced to reconsider how implementing programs, strategies and even goals.

Implementing Quality Management System in the marketing of petroleum products has a significant influence on market characteristics and content plan. Basically, it determines in its entirety.

A Company for marketing oil products will give special attention to the analysis of opportunities and problems which we must face, and conclusions drawn based on the company's future direction is defined.

4.3. Economic and social efficiency of the implementation of Quality Management System. Measures for implementation and system generalization

Given the existence of an infrastructure to control the power market, we believe that the key factors for efficiency and increasing the competitive strength of the organization to be taken into account are: knowledge and anticipation of market demand, promotion of modern technologies that result in increased activity; reducing costs, improving quality and economic assets, choosing the best methods of management and management etc.

We believe that markets and the business of marketing petroleum products have certain characteristics that contrast sharply with those of consumer markets: fewer buyers, more buyers, the close relationship between supplier and customer demand derived, inelastic demand, demand, professional purchasing techniques and the presence of several factors influence the buying process. In our opinion, companies are subject to a wide range of influencing factors when deciding to buy.

Company for marketing oil products claims that it has the greatest influence of economic factors, as buyers prefer on that supplier offering the lowest price.

Company for marketing oil products should be aware of the needs, resources, policies and techniques of purchasing all customers and potential customers in order to know how they can sell products: oil, complementary and LPG cargoes.

The need to identify major competitors should be analyzed in terms of strength, goals, market share, product quality, marketing strategies and other features.

The company must know five things about the contestants: Who are they? What are their strategies? What are their goals? What are their strengths and weaknesses are? How they react to market challenges?

Based on the degree of substitution of the product, there are the following levels of competition: competition for brand competition in an industry, competition formal and generic competition. Effects of implementing the Quality Management System are held on new methods of supply management, market competitiveness and entrepreneurial development of the petroleum products as a marketing firm.

We find that the lack of competition in the fuel market in our country SMC distort the efficiency and effectiveness, so far, there was an increase in economic performance in the firms that have implemented a quality management system, compared to that such a system was not certified. Lack of legislation and control bodies has given way to spread phenomena of non-compliance with quality products declared.

To be able to exploit the potential of SMC's management in the oil market competition, taking into account the nature and importance of these products, the social implications of the supply of products inconsistent with those stated, we consider absolutely necessary to develop trading laws for the petroleum industry and empower existing body (consumer) or the newly created to manage this act.

To demonstrate conformity of products, we consider that each unit of petroleum product distribution should take samples daily, in order to control all quantities of products sold and that the evidence should be analyzed in laboratories and the approved application should be binding on third parties.

CHAPTER 5

THE IMPLEMENTATION OF QUALITY MANAGEMENT SYSTEM IN SC PECO BIHOR S.A.

5.1. Publication and distribution of Quality Management System documentation

After editing, the quality management system documents are reviewed, approved and copied for circulation control. Officer(representative) for quality management established (in collaboration with the leadership of the SC PECO BIHOR SA) when and where to broadcast and share documents.

5.2. Determination and confirmation of responsibilities, providing authority.

Management has the highest level of the job change and issue all decisions necessary to establish responsibilities and authority necessary to grant each function to ensure effective administration of quality management system: Annex 7 (7.1-7.5) - system documents quality management in S.C. PECO BIHOR S.A.. It is emphasized here that the authority should be equally responsible. If a person has the authority without responsibility, it will ignore the tasks without any consequences and if it has responsibility without authority which is often the case will not be able to solve tasks. On the other hand, if there is a clear responsibilities and authority, there may only be misunderstandings and unproductive duplication of activities.

Responsible for quality management approval at the highest level established SMC PROGRAM IMPLEMENTATION: Annex nr.7.6. - Quality management system documents.

SC PECO BIHOR S.A. considers that, in a period of several months it will implement quality management system, and being also responsible for its internal audit should plan the whole system.

5.3. Staff training to implement the Quality Management System

Responsible for quality management sets the theme for all staff training to ensure: explaining the principles of quality management, the fundamental principles of quality management systems and staff awareness of the importance of attitude towards client knowledge of legislative and regulatory environment, the knowledge system quality management under implementation, study and acquisition documentation, knowledge and understanding of the processes.

Quality management representative with the head of human resources training program and establishes prepare logistics. We believe that management training S.C. PECO BIHOR S.A. must be based on a package of training or courses covering all subjects. Theme, and availability of logistics training program will be approved by the leadership at the highest level. Assessment of training is carried out by lecturer and

responsible for quality management: assessing staff knowledge and training effectiveness evaluation. Quality management officers will monitor its functioning.

Experience shows that by changing processes and management system structure is easier to change attitudes than mentality (One of the essential characteristics of the behavioral approach is that it focuses on behavior rather than trying to change personal characteristics such as personality). It is essential that each person-employee to be convinced to understand the point, understand what to do, the expectations and behave accordingly.

5.4. Monitoring implementation - The Officer in charge of quality management with its team members will continuously monitor the functioning and will assist whenever requested.

5.5. Checking the Quality Management System implementation, in accordance with the standards and management systems theory, implementing a quality management system is an associated change management improvement act, system implementation is a strategic business improvement in SC PECO BIHOR S.A.

Our approach, which is to detect contributions that have quality management implementation in the marketing of petroleum products in SC PECO BIHOR, was a long and careful analysis of the provisions of ISO 9000 series standards compared to real phenomena encountered in retail marketing of petroleum products.

We started with the idea of the **implementation of a quality management system to help improve storage capacity and storage products, both in company warehouses and stations belonging to the company**. Management was required, standards and regulations applicable quality system implemented, to make investments to improve the system of tanks and piping, unloading and receiving products. Improved laboratory systems at the reception and delivery of deposit and stations. Automation systems have been upgraded in the measurement and monitoring of stocks to avoid contamination between products, in bad faith or by mistake. The laboratory was equipped with modern analysis of the product and has been accredited to undertake such internal analysis and testing.

Implementation is enhanced and improved oil product portfolio shall meet all requirements of our clients with the thought that the high level of quality and continuous improvement of business products and services to improve the process of marketing. Company management decided to sell mainly products company Petrom, whose product portfolio, launched in January 2009, is the most complete and appropriate customer requirements, with special care for the environment. Petrom fuel helps improve engine protection, maximum operating power driving with low fuel consumption. Moreover, low sulfur content (up to 10 ppm for all fuel Petrom) reduce pollution contributing to environmental protection. Also, improved marketing process by offering a wide range of lubricants for both automotive and industrial sector or various railway applications. The range includes 15 types of high quality oil, the

multigrade oils or monograde, which protects the engine, hydraulic and transmission oils to streamline the functioning of the machine components. Were introduced with the implementation of quality management services to access data sheets for each product. Liquefied petroleum gas (LPG) which is a mixture of gaseous hydrocarbons in different proportions, is brought into pressure liquefied state (cylinders / tanks). At normal temperature and pressure these hydrocarbons are gaseous. To enable the storage and use in good conditions by final consumers, they are liquefied. That is why, for end customers, LPG is stored in a closed container under pressure. In Romania, given the temperatures in winter / summer, the maximum storage pressure is 17.65 bar. Management company, following the implementation of quality management system pays special attention to safety, the process of bottling LPG and containers (bottles, tanks) where it is bottled. He developed this service verification to the consumer use of LPG and cooking appliances (stoves), the power for heating or hot water, laboratory analysis and testing using LPG.

We appreciate that the implementation of quality management to improve the quality of products and services in general and in particular the activity of oil products and increase safety in the transport system of these products, particularly by upgrading to increase safety in operation of the park Auto and auto tanks and transport vehicles cylinders. They can not work without authorization to transport dangerous goods without drivers trained and certified to do so.

We believe that the marketing is constantly improving, following the implementation of quality management system, given that quality characteristics are defined for each product, there is the possibility of testing and acceptance of products in the laboratory by weighing the possibility of "the car "Cargo LPG by introducing a system for receiving and handling complaints from customers, the introduction of measuring customer satisfaction by introducing hotline for customer complaints, etc..

We note that following the implementation of quality management system, improve marketing process by increasing / size of product quality. Management at the highest level of the company priorities quality, both in phase supply from suppliers (refiners, importers, etc.). And the stage of delivery / sale of course and intermediate stages of the process: reception, storage, management, handling, transport, etc. To similar products sold by competition, company management decided to differentiate based on service component (eg. Transport of products at the doorstep checking devices to use LPG to customers, etc.

On measurement and evaluation of products, mention that, following implementation of quality management system, the company has the use of control criteria and assessment products and measurable objectives. In most cases it is possible to compare the product specification or other products.

The concept of ISO 9000 quality management system implementation, we believe, contributes to improving the overall management of the company management process oil products and management culture. First this implementation allows the firm guidance and control quality. Establishing a quality policy: fairness, responsibility and respect is the essence of collaboration with all stakeholders: customers, employees, shareholders and company in general. Company seeks to maintain long term relationships with partners and gain their trust through open communication and intercultural cooperation. The objective is to create a mutually beneficial environment, social and economic partnerships, following current environmental requirements.

We particularly appreciate the marketing improving quality by establishing staff training, both directly involved in the process of marketing and other personnel of the company. Then, establish procedures for the system: Control of nonconforming product, corrective and preventive action, by establishing procedures for measuring customer satisfaction, acquisition and handling of customer complaints, the procedures of analysis, measurement and monitoring of the functioning of management quality improvement system and thus continue the process of trading oil products.

Finally, we consider that the implementation of Quality Management System helps to increase sales volume, market share growth of the company, increase performance and competitive marketing process.

Conclusions, contributions and original proposals

1. The thesis developed, and supported during the PhD program papers, answers fundamental pre-defined targets based on theoretical research and results obtained pursuant to SMC PECO Bihor.

2. The activity of oil products is the last link in the food chain oil from geological research - exploration - exploitation - refining - marketing that connects with the final consumer product called oil.

3. In terms of standards on Quality Management systems, oil product sales units are entities with limited autonomy, generally without legal personality, and is a subsystem built in large national or transnational oil companies, occupying large segments of the market (Petrom in Romania is about. 35-40% of the national market), generating monopoly policy can ignore customer satisfaction.

4. Oil is a product specifically at this stage, vital for the economy and people's living conditions.

The future perspective of the Romanian energy based on oil, we analyzed it in terms of internal resources and the new concept of "energy security through cooperation" proposed by analyst Robert Cutler, customizes for Romania's geopolitical conditions and prospects of our country's connection to new projects corridors of European power.

5. Romania's energy security we emphasize the following objectives:

→ reduce dependence on imports of Romania's energy, and natural gas, reducing dependence on a single supplier;

→ maintain a balanced energy mix in the structure of energy balance, while developing energy mainly based on renewable resources or unconventional, stimulating investments in this area and create a proper institutional framework;

→ promoting the concept of critical infrastructure in all activities of petroleum on all levels, to enjoy special treatment;

→ economic crisis since 2008 - by reviewing the prices of energy policy and by creating mechanisms of quality management system.

6. We showed that Romania has organized national standards bodies, certification and accreditation, conformity assessment laboratories, etc.. Recognized in European and international level, able to implement, certify and audit the quality management systems and integrated systems as- environmental-health-safety, in accordance with ISO 9000 standards of families, ISO 14000, ISO 18000.

7. According to our experience and the development of management policies based on the provisions of ISO 9000 standards should lead organizations to analyze customer

requirements, define processes that contribute to an acceptable product for the customer, keep these processes under control so that through guarantees provided to ensure the customer that the products / services meet stated quality and customer satisfaction and thus obtain all the advantages of generating corporate success.

8. In analyzing specific marketing services for petroleum products in accordance with the provisions of ISO 9001, we defined the main types of products and areas of use, product mix, and the breadth and length, depth and uniformity of product mix. We established indicators of efficiency and effectiveness, sales value and profits that a line of products, taking into account the market structure. To enable management to assess market positioning of varieties sold compared to those sold by competitors, we designed the original chart positioning allowing rapid management organization.

9. We developed the concept of improving the management services, for which purpose we have proposed an original model for measuring customer satisfaction for quality service.

10. We developed the concept of traceability of the product and introduced the concept of external traceability which I attributed great importance in the context of economic globalization, the compliance of the product originally declared may suffer many changes on the route manufacturer, exporter - importer - wholesaler - retailer - final consumer, for which we consider necessary to develop a new standard for declaring the quality of the product / service to the end customer interface.

11. Detailed analysis of all theoretical requirements and specificity of standards activities and services carried in a petroleum products trading company highlighted the following:

- Construction and certification of QMS in the field can only have a holistic character, but must be addressed both at the corporate level and within each horizontal branch entities (including each unit as is the case PECO Bihor);

- Marketing of petroleum products is not only a corporate component, but has a strong social component to ensure accessibility to the product in terms of existence and compliance product product / service with quality and price declared;

- The basic objectives of a corporation, consisting of increased turnover and profit, generating monopoly policy can ignore customer satisfaction;

- The role of national governments to protect consumers from abuses of monopoly and cartel, the legislation proposes to promote specific purpose of marketing petroleum products and creating a special body to monitor compliance and sanction non-conformities products;

- In this respect have brought criticism of the ISO 9000 standard that covers only the responsibility of management and employees to the organization and does not mention anything about social responsibility.

12. During the analysis we made a series of original proposals for increasing customer confidence, if a company trading oil products by:

- indication of the display manufacturer for each class of product types and prices of existing products the day;
- fuel supply new types of vehicles goes into production, without ignoring other fuels for vehicles in circulation;
- complementary range of products for traffic safety items, emergency telephone services, repair services or first aid, etc..;
- internal management must train and motivate employees to provide quality services to acquire and to practice procedures SMC.

13. Continuous improvement of the quality management system performance must be a permanent objective of the organization and must have traceability and communication as the main media.

14. Economic efficiency of any activity on the market can be only in fair competition, free, observing specific loyalty, arbitrated by a competent body of the state.

15. Economic efficiently increase or decrease of activity is also closely related to the ratio of balances and macroeconomic imbalances, economic and social policies of national governments and international political events.

16. For a stable market of oil products marketing services we examined quality indicators measured by economic indicators such as productivity, profitability, market share, reduce complaints, etc. and shown to be beneficial influence of implementing a Quality Management System.

17. Nationwide found that it can make a difference in the net increase in economic performance of marketing organizations that have implemented and oil products certified Quality Management System (QMS) those that have such a system, because lack of effective competition in the fuel market since several corporate monopoly on this market.

18. For petroleum products marketing company in a competitive market we have developed an original model of a strategic planning process, after the implementation of QMS, which from a business mission for the marketing of petroleum products and analysis of internal and external environments, to draw the targets and using tools QMS to obtain expected results.

19. In this context, noting that the Romanian market with quality products declared as to whether acquired special dimensions due to changes in manufacturer-retailer of quality route, increasing the share of counterfeit or unauthorized qualitative changes substantially, we proposed initiating a trading laws petroleum products and setting up

a special body to monitor compliance products and compliance system for evidence of oil products sold.

20. The application of QMS implementation in S.C. PECO Bihar have developed stages of the QMS, taking into account the specifics of the tradition and mission, that in accordance with ISO 9000 standards to transform the unit into a modern and profitable organization and equally to meet expectations customers.

In the generalization of the implementation of the QMS, we have emerged as new original need for pre-project, taking into account the semi-structured interview method for sizing QMS and its relationships with other quality management systems in corporate and interfaces between these .

We proposed that the new, before the declaration at the driver level, develop a pre-project on the current situation of petroleum products trading company and the economic conditions in which they operate. Preliminary aims to avoid problems that might occur.

We consider and propose, also by way of novelty for QMS preliminary, semi-structured interviews introduction. The novelty lies in the role of these interviews to determine initial situation on attitudes to quality and quality culture in the company.

Based on the information and opinions we can introduce the novelty concept of internal customers and suppliers (each organizational structure - the station, station, warehouse, office, office, department, etc.. - Is to treat as the previous structure as a supplier and the result as it would have been a customer).

We also propose a team improving the quality department.

We appreciate in particular, the importance of establishing a baseline level (measuring the existing level of behavior) before any intervention. This will allow measuring the effects after the implementation of QMS quality management.

From practical experience, we can say that the definition of behavior and then positive reinforcement behavior "acceptable quality" is a viable approach to improving the quality, but it must be supported by a structure and a climate that facilitates the necessary changes.

We can also say that the definition of quality and cultivation of behavior resulted in acceptance of change and led to the continuing improvement of service quality on all levels of activity.

21. In the current context of globalization, in which Romania is part of European Union membership, unlocking the potential of the generous standards of ISO 9000 is facing a number of difficulties related to the regulation of authority and responsibility between national and EU bodies. In this regard we believe that this thesis opens the way for large multidisciplinary research on:

- Free movement of goods and services - the responsibility of nation states and corporations;
- Reports of responsibility and national bodies of the EU bodies in drafting legislation, regulations against their effects on the population of countries, emerging countries;
- The role of state supervision bodies in preventing and combating domestic markets manipulation and skidding;
- Social responsibility of business organizations;
- Unfair competition between large corporations and new entrants, etc. businesses.

22. This paper is the first of its kind which deals exhaustively applying QMS to process oil products.

Our approach could not fully exhaust the contribution of research on quality system implementation in improving the marketing of petroleum products is very limited literature in this area and complexity of issues involving stakeholders: shareholders, suppliers, customers, employees, competitors, government , environment, energy security, sustainable development, highlights the need for further study of multiple issues involved in this field specifically.

Thus, we propose new topics for research on implementation of a quality contribution to improving the marketing of petroleum products on the following:

- implementation of a quality contribution to improving human resources work in the marketing of petroleum products;
- implementation of a quality contribution to improving sustainable resource use in the development process of oil products;
- The contribution of quality system implementation process of marketing activities of suppliers of petroleum products;
- The contribution of quality system implementation process to improve customer satisfaction marketing of petroleum products;
- Contributing to the improvement of quality system implementation of the shareholders on the sale of petroleum products.
- Possibilities for restructuring current units / stations oil products to provide electrical energy for driving engines or fuel other than those used today;
- Studies on the effectiveness of implementation of QMS in units of oil products compared with feasibility studies of each entity individually and overall the firm/company.

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