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THE HIGHEST HIERARCHICAL PRINCIPLE FOR QMS IN PROFIT-ORIENTED ORGANIZATIONS

Abstract: *For each structural and functional design of the organizational system, it is necessary before the start of design to know which is the highest hierarchical principle for the organization. The paper presents the results of research that give an answer to the question "What is the highest hierarchically principle for QMS in profit-oriented organizations?". Presented the highest hierarchical principle is explored for the purpose of orientation of quality management system in profit-oriented organizations. Defined principle should be used for the decomposition of lower hierarchical principles and objectives (6.2, ISO 9001: 2015). Defined principle enables the necessary integration of quality management systems in the business system of profit-oriented organizations.*

Keywords: *quality, profit, principle, costs, resources, ISO 9001:2015*

1. Introduction

The problems of profitability are constantly present in business organizations. Their study has a relatively long and scientific content-rich past. Nowadays, the increasing complexity of organizations and their environment, profitability problems have become even more significant. Very complex and responsible task, which still has not given sufficient importance, is researching the structure of the business system.

The organization as a supplier of products and services wants to meet their customers because this in turn receives the money. In addition, when the organization is doing well creates an essential prerequisite to satisfy the demands of other stakeholders. The fact is

that the concept of quality occurs in parallel with the development of human civilization so that customers historically have learned to be cautious and to use their own methods of inspection and testing. That is why today in everyday speech more than ever hear the word quality. Access to quality varied depending on the social and economic conditions, and market conditions. The first phase was the manufacturer of the market, which is characterized by excess demand. The second phase of the consumer market, which is characterized by excess supply. The third phase of the competitive market, which characterized an excess supply of goods and services. Today, the market is characterized by high quality products and services at competitive prices.

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William Edwards Deming, was the first who developed a philosophy of quality that is based on the assumption (hypothesis), 'everything begins and ends with the customer/user, which is the most important factor in the production line. He made a significant contribution to the development of statistical governance processes and other methods for determining the validity of the process. According to Deming, deviations and bad impact on quality arise due to poor technology, poor design, poor working conditions especially due to lack of knowledge, skills and responsibilities. Deming, basing their teaching on specific cases, particularly emphasized the importance of management and managerial structure in improving the quality, regardless of the type of organization. Deming approach to the development of the science of quality is based on the theory that if the system will control and quality improvement based on the cycle: planning, application (implementation) plan, checking scored and application of corrective measures. The concept of cycles Japanese scientists called the "Deming cycle" or methodology that is known in the literature as Plan - Do - Check - Act [ISO 9001: 2015]. PDCA concept through a cycle of four steps briefly describe: Plan: Identify objectives and establish the processes necessary to obtain results in accordance with customer requirements and the organization's policies. Do: Implement processes. Check: Monitor and measure processes and product, comparing them with the policies, objectives and requirements for the product and report the results. To take one: Take action to continually improve the effects (of performance) process. Through the above four steps to adopt and standardize procedures and solutions necessary for the permanent (continuous) process of quality improvement. Joseph Moses Juran, the largest contribution to the quality of scientific thought is given through the following basic ideas (concepts) Quality: Internal users (eng. Internal customer). According to this idea (concept) of quality, each participant in the

production chain is an internal user, a supplier for the next perpetrator, which means that at each stage of production can apply the "three role model": *supplier* —► *process* —► *users*. By applying this model it is possible to decompose the entire chain of production on processes and process activities, where each process and activity is an opportunity to improve quality. Juran has paid special attention to Cost of Quality. According to this idea (concept) of quality, costs arise when the quality of the material and service the product does not do well on the first try, and are classified into three groups:

- costs of nonconformity relating to wastes, improvement, corrective action, warranty, complaints and loss of customers.
- cost estimates which include control, inspection and search pattern.
- costs of prevention which include training costs, preventive checks and process improvement.

The spiral quality. According to this idea (concept) of quality, as well as the Deming, advocates a continuous spiral of activities by the applicable (competent) quality management throughout the organization, which includes: market research, development of product, designing, production planning and procurement, process control, final inspection and testing, sales and feedback from users.

Quality Trilogy. This idea (concept) of quality has a special significance for the development of modern directions of movement (trends) Quality Management, which focuses on three key of quality process:

- *Quality Planning* process aimed at establishing quality objectives and necessary operational processes and related resources to fulfill the objectives;
- *Quality Management* process that is focused on meeting the quality requirements;

- *Quality Improvement* process which is aimed at increasing the ability to fulfill quality requirements.

Philip Bauard Crosby scientific contribution is based on the assumption (hypothesis) "quality is free", claiming that the money spent on poor quality ie. all activities that are not carried out correctly the first time. It is believed that it is conceived and formulated a concept known "Zero defect", which is based on the fact that when you do something, do something good, which positively affects the quality of the scrap. The creator of the idea (concept) "Zero defect" proposes the establishment of teams to improve quality, quality evaluation of all activities, training in quality management, quality committees, which actually published (promote) a new quality, ie. the day when the company accepted the work without defects. Karou Ishikawa, stated: quality is determined (defined) as equivalent to the satisfaction of the customer. He says that the quality must be carefully defined and certainly not enough to say that the product must be of high quality. Attention must be focused on every point of view (aspect) organization and indicates that customer requirements are constantly changing which is why the definition of quality is always changing. According to the founder of the science of quality, price of the product (or service) is an essential part of meeting the demands of the customer, if the product can not be overestimated obtain customer satisfaction. In Tokyo in 1943, has developed a method of relations of cause and effect, a method that has been marked as Ishikawa diagram, or diagram of the causes and consequences (Cause - And - Effect Diagram C & E diagram, "herringbone"). The objective of the application of the method is the separation the priority of cause and in this regard the launch of appropriate measures to reduce the negative consequences.

2. Experimental section - elements of importance for the profit-oriented organizations

The author of this work is carried out research and produced a thesis entitled "Development of systematic approach to quality assurance integrated into the business model of the system to achieve maximum profit." The results of this survey are used to define the elements of importance to profit-oriented organization and defining the highest hierarchical principles of quality management systems.

Quality is reflected in the function of the market, which means the organization must have a quality product, better than the competition in that it meets the requirements of users and consider the interests of other stakeholders. Quality must be a function of the business aspect (quality improvement of business processes in the organization, reducing costs, increasing productivity and profits). There is also a social aspect of the quality, quality is facing quality of life and satisfaction of individuals, groups and society as a whole. The essential conclusion is that the business success of the organization depends on the quality of products and services.

Without a functional and profit-oriented quality management system inconceivable survival of any market programs, both in terms of the acceptability by the users, and in terms of costs.

Time to create additional value today is much shorter than before. To profit must be created to work today and tomorrow. Profit-oriented organization to the quality management system set up three core orientation and to:

- **consumer confidence** - to gain the trust over the quality of the user (customer);
- **impact of competition** - to minimize the impact of competition including associating with it;
- **changes** - the products and services implemented in accordance with the

changes and that the quality of creating the modern scientific and technological level.

Consumer confidence gains are directional to:

- products and services according to customer needs,
- a quality that will meet the customer's requirements,
- delivery to the customer's plans, and
- price and payment method to suit the customer.

Profit-oriented organizations should know that today there is only known by the buyer. Know the customers must not be to lose because the loss of one customer does not mean the emergence of a new one. Every customer wants to be treated separately (individually) according to their needs individually. Therefore, management system rests on the principle of "Focus on the user". A large number of requirements in ISO 9001:2015 is derived from the this principle.

The impact of competition is constantly growing in any area of business organizations. It can be concluded that a permanent supplier, without competition does not have, nor will it be. The new findings suggest that we should go on cooperation with competition and joint appearance on the market in the form of partnerships. Speed of joint responses to all the changes of the market, allows the optimization of resources and minimization of costs. As long as the market works on the basis of supply and demand, products and services will always sell based on price, quality and/or selection (preference).

Today the need for change is continuous and not sporadic. Accelerating scientific and technological developments in the world of all organizations are forced to sell their products and services continually improve. Changes mode to go in two directions. First, they relate to the improvement of the characteristics of existing products and services. Secondly, to develop new products and services. Rapid technological change,

promote innovation. The product life cycle is shortened without changing constantly. Products require constant changes (modification of inherent characteristics) in terms of improvement and adaptation (adapting) to meet new needs and expectations of customers at a higher level. The essence is reflected in the introduction of innovations (added value) and the more modern and better technology in the major processes. They have a life cycle of products, but also have its own development cycle. Everything must be coordinated and take place more quickly in accordance with market needs.

3. Experimental section - the highest hierarchical principle

For each structural and functional regulation of an organizational system, it is necessary before the start of design to define the context of this organization (item 4 ISO 9001: 2015) and the highest hierarchical principle for the organization. The highest hierarchical principle is the desired achievement of the organization as a whole. From the highest principles are derived other principles and objectives necessary for the operation of the business system.

Starting from the required 4.2 b) standard ISO 9001: 2015, it can be concluded that the requirements of stakeholders and their fundamental to the accomplishment of an effective quality management system. However, the request of interested parties may be opposed from the ratio of price-quality-profit. Customers want maximal quality for a minimal price. Owners want profit organization and satisfied users of its products and services.

We know that the product or service "generator" of all developments in quality management system. Therefore, we can say that through the characteristics of the products or services can be created the interests of stakeholders. Therefore, it is necessary to investigate the quality of the

product as a factor in the interests of stakeholders.

Most owners of organizations want the maximum total revenue $TR(t)$, which are calculated by the simple formula:

$$TR(t) = Q(t) \cdot Wp(t) \quad (1)$$

where it expressed as the product of the total quantity of the product - $Q(t)$, which are placed in a time interval (t) and the selling price $Wp(t)$. Top management of the organization if it wants to maximize the total income means that it should accomplish the following performance (measurable result) Quality Management System

$$TR(t)_{max} = Q_{opt}^*(t) \cdot Wp(t)_{max} \quad (2)$$

The optimum amount of product that is put in the time interval (t) is a function of the inherent characteristics of the main processes in the quality management system (internal issues - 4.1, ISO 9001: 2015) and the business environment (external issues - 4.1, ISO 9001: 2015). This leads us to the conclusion that maximizing total revenues $TR(t)$ in the time interval (t) reduces to solving external and internal issues (6.1, ISO 9001: 2015).

The main goal of the business system and the quality management system that the production possibilities $Q_P(t)$ equalize with the needs of the market for the product $Q_M(t)$. This should be a continuous trend - (\cong equivalents) for the near and distant future. That orientation must include an increase in demand for products and services, and through continuously improving the inherent characteristics of products and services.

$$Q_P(t) \cong Q_M(t) \quad (3)$$

Based on the previous analysis, we conclude that the value of units of product that balances the requirements of interested parties and that it should be given special attention.

In terms of market exchange product can be established the following criteria for

evaluating them. These criteria are:

- **the level of product usability** - which defines the use properties of products and services, for example, for technical products are: material properties (physical, chemical, metallographic and technological properties); structural properties (complexity, resilience, and the technology of unification; making properties (machining - accuracy and precision machining and assembly - accuracy and precision assembly, properties effectiveness (efficiency, reliability, suitability for operation and maintenance) of permanency (lifetime and warranty period), the ability of resistance (resistance to the shock, resistance to electronic effects, heat resistance, resistance to humidity, resistance to mechanical shocks and vibrations, etc.).
- **aesthetic value of the product**, which includes specific properties, appearance and attractiveness of the product, which motivate the customer to procure;
- **the market value of products**, which includes service properties, aesthetic the attractiveness, as a basis for exchanges with other things that determine the appropriate amount of money;
- **production value of products**, which includes the sum of costs, materials, labor, tools and other investments necessary for its development.

The usable characteristics and esthetic value are the essence of the values for the user, in terms of the exchange, determines the corresponding monetary value. If two different products or services can meet the needs and aspirations of people at the same level and at the same time are sold at the same price for the user then they have the same value. The products of better quality (higher

the usable and esthetic characteristics) for the user create the conditions for the acceptance and higher prices.

In the $p_v^{UE}(t)$ are defined (U) and a usable and (E) as esthetic value that is qualitative value, for which the user is interested, then the product has the appropriate exchange value. Then we can say that each product in terms of the exchange unit has its own value judgments, higher or lower levels - $V(t)$ depending on usable and aesthetic values - $p_v^{UE}(t)$ and the selling price $Wsp(t)$.

$$V(t) = p_v^{UE}(t) \cdot Wsp(t) \quad (4)$$

The quality level of products and services (usability and esthetic value) determine the area of the unit price, which the user is willing to pay as against the value of this level, and that has a significant impact law of supply and demand. For an organization is of the utmost importance that product and service, with maximum unit value judgments - $V(t)$ max, for such a product and services maximally meets the needs and expectations of users. This means that the maximum evaluative unit:

$$V(t)max = p_v^{UE}(t)opt \cdot Wsp(t)max \quad (5)$$

That is the highest level of quality (usability and esthetic value), which means that the "optimal" because that gets the maximum cash equivalent - $Wsp(t)$ max, to given trading conditions.

The main objective of the quality management system is to establish the equivalent of a production level of inherent characteristics (**Realized Quality**) - $p_v^{RQ}(t)$ with the specific features for which the user is willing to pay:

$$p_v^{RQ}(t) \cong p_v^{UE-tr}(t) \quad (6)$$

ie. to reduce the difference,

(*internal issues - 4.1*) $p_v^{OK}(t) \neq p_v^{UE-tr}(t)$
 (*external issues - 4.1, ISO 9001:2015*) (7)

Given that the value of the product or service for the organization is conditioned and production value (cost price) - $Wcp(t)$, we can concluded that the maximum effect - $E_f(t)_{max}$, be the quotient of the maximum selling price (sp) and minimum cost price (cp):

$$E_{f_{max}}(t) = \frac{Wsp_{max}(t)}{Wcp_{min}(t)} \quad (8)$$

From the previous analysis we can conclude that the first element of the highest hierarchical principles - $E_{f_{max}}(t)$.

3.1. Resources ("an energy potentials")

The needs for resources in a specific organization arising out of its context (Item 4. ISO 9001: 2015). In most organizations, the most common needs for resources are related to:

- **Human resources**, which include the competent executives in all workplaces. Staff must be aware of the context of the organization, educated, trained and has the necessary experience to perform their tasks and that the required level included in communications (Pavlovic et al., 2011);
- **infrastructure** (buildings and associated utilities; equipment, including hardware and software; resources to transport, information and communication technologies) - (Ranković et al., 2012);
- **environment**, including environments benefit from aspects such as the physical environment (eg. temperature, heat, humidity, light, airflow, hygiene, noise); psychological environment (eg. reduce stress, prevent "burnout" emotional protection); social environment (eg. non-

discriminatory, calming, non-confrontational) - (Item 7.1.4, ISO 9001:2015);

- **knowledge** that is specific to the organization. It is usually acquired through experience. This information is used to achieve the goals of the organization - (Item 7.1.6, ISO 9001: 2015).

For different types of organizations costs of quality have different structure. These reasons for difference are different processes. So in ELV (End-of-Life Vehicles) recycling (Pavlović et al., 2011) in dismantling centers as organizations, dominant types costs are:

- cost of labor for dismantling with appraisal costs and internal failure related labor cost,
- costs related to destroying of parts of ELV because low competences, lack of equipment, etc.

- cost of external failures because “hidden” failures, which is expressed in reclamation costs.

Costs of prevention are very small because the manual process of dismantling is very simple. For automated dismantling is necessary to invest in prevention. For calibration of costs of quality is important to know to know costs of purchased material. It depends on right selection of supplies (Ranković, 2012).

In addition to these resources, the majority of profit-oriented organizations are of great significance information about:

- The Availability of the Resource on Market - **ARM(t)**;
- The Absorption of Market Opportunities - **AMO (t)**, for products and services, and
- Available financial resources, as well as essential drivers of improvement (Item 10. ISO 9001: 2015).

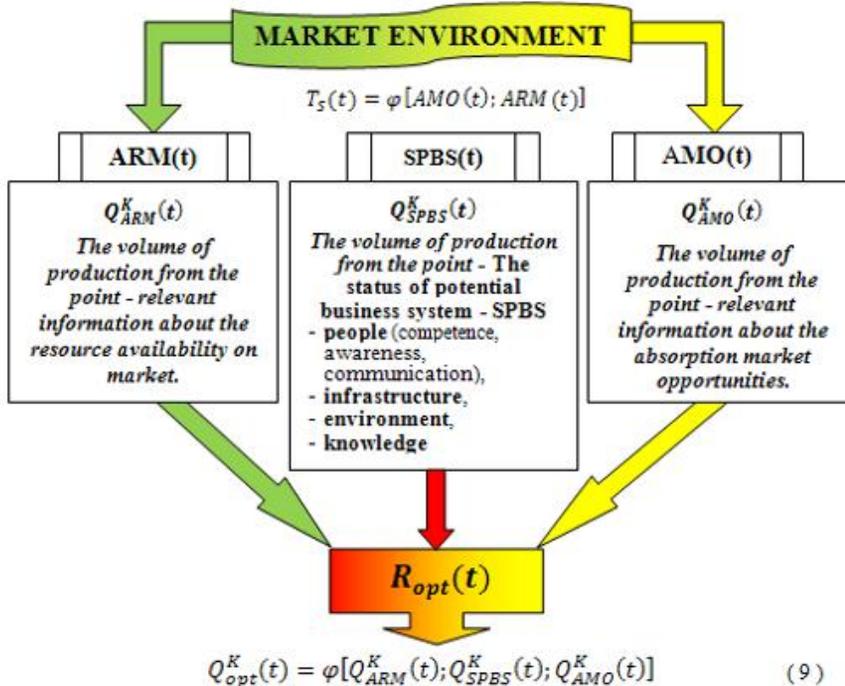


Figure 1. The essential elements of the profit-oriented organizations

The optimal amount of production - $Q_{opt}^K(t)$ is a function of the state of potential business system SPBS (t) and market functions $[T_S(t)]$. There are two key elements of the market functions - $[T_S(t)]$: resource availability on the market - ARM (t) and the possibility of absorption of the market - AMO (t). It is important that production in profit-oriented organizations is realized with optimal resource - $R_{opt}(t)$.

Resource management includes adequate external and internal issues (Item 4.1, 6.1, 7.5 ... ISO 9001: 2015). Relevant information includes the type, quantity and characteristics of the resources. Details to the extent required to work processes in the organization (Item 9 ISO 9001: 2015). This control mechanism is completed through a phase of improvement (Item 10 ISO 9001: 2015).

From the above analysis it can be concluded that the second element of the highest generic hierarchical principles - $R_{opt}(t)$.

3.2. Cost of Quality

One of the major goals of profit-oriented organizations is a permanent orientation to minimize costs. Determined by the nature and the functional structure of a business system is synergetic [SPBS (t)] with the available resources - R (t), allows to define the next potential equivalent:

$$[SPBS(t)]_{R(t)} \equiv Q^{*K}(t) \tag{10}$$

which can be used under the following conditions:

$$Q^{*K}(t) = f \left[Beh \sum P^{*K}(t); \sum VI(t) \right]_{R(t)} = k(t) \cdot \sum VI^*(t) \tag{11}$$

where are:

$Q^{*K}(t)$ - maximum possible score in quantitative and qualitative terms;
 $Beh \sum P^{*K}(t)$ - the behavior of a set of

people that the quality of their work should ensure realization $Q^{*K}(t)$;
 $\sum VI^*(t)$ – value of investment (conditions) to ensure the realization $Q^{*K}(t)$;
 $k(t)$ – efficiency ratio (of rationality) the invested funds.

Synergistically structure of a business system to effectively and efficiently, according to the available resources $R(t)$, will achieve a $Q^{*K}(t)$ the lowest investment $\min \sum VI^*(t)$, ie. can be realized by a maximum efficiency ratio (of rationality) $k(t)$.

Expression (11). will be expressed in the following form, ie .:

$$Q^{*K}(t) = f \left[Beh \sum P_{opt}^{*K}(t); \min \sum VI^*(t) \right]_{R(t)} = \max k(t) \cdot \min \sum VI^*(t) \tag{12}$$

For the realization of $Q^{*K}(t)$ must first of all to define the conditions with the highest rationality - $\max k(t)$. These conditions must be the basis for solving the problem of maximizing the economic and production results in real conditions. These real conditions are defined in Figure 1. and the expression (9). So, the goal is to achieve maximum rationality for a given volume of production (in quantitative and qualitative terms).

$$\max k(t) = Q_{opt}^K(t) / \min \sum VI^*(t) \tag{13}$$

When defining actions to address risks and opportunities (Item 6.1 ISO 9001: 2015) must always keep in mind the minimization of costs - $C_{min}(t)$. So it is essential that costs minimize whenever possible.

From the above analysis it can be concluded that the third element of the highest hierarchical principles - $C_{min}(t)$.

4. Results

Bearing in mind the previous analysis, the answer to the question "Which elements are the parts of the highest hierarchically

principle for QMS in profit-oriented organizations?" is as follows:

- **The first** element of the highest hierarchical principle is to maximize the effectiveness of the specified coefficient - $E_{fmax}(t)$;
- **The second** element is the optimization of available resources - $R_{opt}(t)$;
- **The third** element is the minimization of the total cost in the organization, while not diminishing the achievement of the first element of the generic principles and quality assurance of products and services within the balanced interests of stakeholders (third element principle - $C_{min}(t)$).

The highest hierarchical principle for profit-oriented organizations - $HHP_{QMS}(t)$ is:

$$HHP_{QMS}(t) = [E_{fmax}(t); R_{opt}(t); C_{min}(t)] \quad (14)$$

Defined highest hierarchical principle is relevant for most organizations where the profit is in the first place (Defined principle represents the striving of the author to contribute to role of quality management systems in profit-oriented organizations).

5. Discussion

In this paper, the quality management system is treated as an integral part of the business system. The author's approach is consistent with the new definition of the quality management system (3.5.4 of ISO 9000: 2015), which reads: "The quality management system is part of a management system with regard to quality". From this approach follows a fundamental difference results presented in this paper and the works of other authors in the field of quality management.

The nature of the problem to be studied in this paper is related eclectic approach to the creation, maintenance and implementation of quality management systems. The eclectic approach in this context should be understood that an element get out of the context of the organization inflate it as a "bubble" in all aspects of science for that element. When try it to get back into the context of the organization, we see that the "bloated". Example: We know that the measurements in the organization consume resources. If you have a larger volume of measurement in relation to the legal obligations and the true needs of the processes in the organization then we will have a negative impact on profit organization. It is therefore important to examine what is the profit-oriented organizations for the highest hierarchical principle, which will be guided by the top management of the organization.

Defining quality objectives in profit-oriented organizations should be used to achieve the $[E_{fmax}(t); R_{opt}(t); C_{min}(t)]$. In addition, there are several other important aspects. First, in the context of the organization (external and internal issues, vision, mission, policies, risks and opportunities), which determines the strategic orientation of the organization. Second, based on the previous, according to the structure and the possibility of engaging resources (energy potentials) in the organization - SPBS (t). Third, it is always taken into account, according to resource availability on the market - ARM (t) and the possibility of absorption of the market - AMO (t). Together speaking, creation of additional value can be found between: goal-management-need-possibility.

Defined highest hierarchical principle $[E_{fmax}(t); R_{opt}(t); C_{min}(t)]$, allows the orientation of the organization towards the creation of profit and the achievement of general goals ($GG_{1n}^q(t)$).

If the $GG_{1n}^q(t)$ is defined as the coefficient of efficiency and effectiveness of the quality management system, we have that:

$$GG_{1n}^q(t) = \frac{p^{AQ}(t)}{p^{RQ}(t)}; GG_{1n}^q(t) \rightarrow 1 \quad (15)$$

where is: $p^{AQ}(t)$ - the achieved quality;
 $p^{RQ}(t)$ - the required quality

Balancing required - $p^{RQ}(t)$ and the achieved quality - $p^{AQ}(t)$ the assumption for achieving the maximum effect - $Ef_{max}(t)$.

Height coefficient $GG_{1n}^q(t)$ despondent in two ways to **profit**:

The first way: through an increase in the quality of the inherent characteristics of the product increases the demand for the product [$\Delta Q_{opt}^K(t_1)$ tends to increase]. Over profit per unit of output is also growing a total revenue - $[TR(t) \rightarrow max]$, **coefficient** $GG_{11}^q(t)$;

Another way: Based on the increase in the quality of the inherent characteristics of products and services compared to the competition, providing the conditions for a higher price, which means higher total revenues - $[TR(t) \rightarrow max]$, **coefficient** $GG_{12}^q(t)$.

Thus, the coefficients of effectiveness and efficiency of the quality management system $GG_{11}^q(t)$ and $GG_{12}^q(t)$ are:

- $GG_{11}^q(t)$ - the coefficient of effectiveness of the quality management system, which is reflected in the population growth optimum quantity of production - $\Delta Q_{opt}^K(t)$ based on increase product quality;
- $GG_{12}^q(t)$ - the coefficient of effectiveness of the quality management system, which is reflected in the increase of sales prices on the basis of a higher quality product.

Quality Management System contributes to elements of the highest hierarchical principles [$Ef_{max}(t) \uparrow; R_{opt}(t); Tr_{min}(t) \downarrow$], through continuous contribution to achieving the general objectives, which are contained in the general parameters $GG_{11}^q(t)$ and $GG_{12}^q(t)$. **This means that the average increase total revenues faster than the average growth of total costs for the (n x t) of time intervals** (illustrated in Figure 2.)

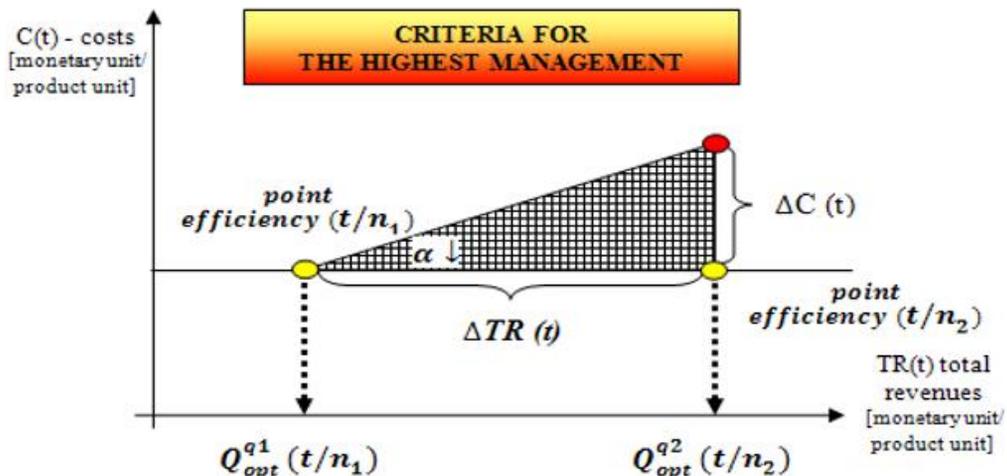


Figure 2. Criteria for decision-making regarding approval ideas for improvement from the standpoint of impact on profit

There is a possibility that the organization costs are higher in the near future from total revenues. This means that the organization expects higher total revenue in future. In this case, the organization must have evidence (estimate of justification investment).

By fulfilling of this requirement, we can say that **the quality is in the function profit.**

Responsibility for the indicated achieving at the leaders of profit-oriented organizations (Item 5.1, 5.3 ... ISO 9001: 2015).

6. Conclusions

In this paper is emphasized that as the results achieved with the same available resources, do not have the same significance for profit-oriented organization. More significant are the results that have been achieved with greater utilization of available opportunities. The question of the effectiveness and efficiency of quality management systems related to the business system is the central issue of profitability. Linking business system with quality management system to the one an harmonious system is imperative for any

organization. Defined highest hierarchical principle is the basis for decomposition of the business system of profit-oriented organizations at lower elements, including elements of the quality management system. For further research, it can be take in consideration an idea of decomposition highest hierarchical principles into three synergistic subsystems: subsystem for maximize profit, subsystem for optimizing resources and subsystem for cost reduction. When the three of these sub-systems owners have agreement and harmony regarding improvement of the project (Item 9, 10, ISO 9001: 2015), then we can say that the project fulfilled initial evaluation.

Based on elements of the highest hierarchical principle, and in the context organization (Item 4 ISO 9001:2015), it is possible to establish criteria for deciding on actions to address risks and opportunities (Item 6.1, ISO 9001 ... 2015). For further research is necessary to the specific requirements presented in ISO 9001: 2015 implemented in the light of the highest hierarchical principles $[E_{f_{max}}(t); R_{opt}(t); C_{min}(t)]$.

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