

QUALITY MANAGEMENT AND CLASSIFICATION IN ENGINEERING PRODUCTS

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ABSTRACT

Through this paper it is intended to analyze the managerial level and its impact on the products of engineering equipment.

The elements that push the production of products using engineering equipment are: presentation of human needs for material goods, analysis of demand and needs, knowledge of the means for their realization, organizational and managerial skills in production, as well as production, sales and product distribution considering meeting customer need.

All this procedure therefore has its origin in a request or "problem", and the result should bring the most adequate solution without misuse of resources.

This following topic addresses four key points, which are:

1. Legal businesses and business classifications
2. Legal application in business management
3. Business economics of productive organizations
4. Quality management and classification in engineering products

Introduction

Productivity is one of the most important stages of economization. It must meet as fully as possible the human, personal and general needs, which are ever-increasing. Thus productivity

has simultaneously become a condition for the existence of people and human societies, and a major carrier of prosperity and social progress.

In order for production to be able to respond as accurately and easily as possible to the requirements and tasks that are set, the need has arisen for a theoretical and practical study of production issues. As productivity is the interest of social activity, it must be studied comprehensively, to find its features, to follow and analyze the directions of its development, as well as to determine the laws of its most successful development with volume in the direction it has taken.

The study of all these problems should be done as comprehensively as possible, with the participation of experts of all profiles and on a scientific basis. For a more detailed analysis of all the problems of economics, and thus of productivity, in the first place should be engaged economic sciences. However, in addition to economic sciences, no less important task in studying and finding the orientation of the further development of social economics and thus production have other sciences such as social and legal sciences, as well as natural and technical sciences and art. . Among the social and economic sciences, which directly or indirectly have to deal with research and study of economic developments and thus short-term or long-term social needs, which also nurture the orientation of economization, undoubtedly occupy an important place in the sciences of economic policy. Economic policy must study the laws of social development and must provide the most appropriate forms of interconnection between productive forces and productive relations, including the social economy from every point of view.

In the modern economy, among the many problems that require adequate solutions, a special place is occupied by issues such as those related to social reproduction (social reproduction). Among them as the most relevant for our studies here are the problems, namely issues related to production (technical and economic part of business), and then other issues related to production, such as: distribution, exchange and spending. New forms of economic activity of the company are developed through separate organizational units called economic enterprises, respectively economic organizations. The productive activity of the company takes place through separate productive economic organizations, the so-called productive enterprises, respectively the productive working organizations or simply the productive organizations.

The industrial productive activity of the company through the industrial productive organizations is called industrial production. The term "industry" is of Latin origin and means: diligence, diligence, diligence and hard work in general, as creativity. Industrial production represents the

process of obtaining material goods by applying mechanical work, wherever and whenever the conditions exist. The ever-increasing presence of mechanical work in industrial production is ensured by the uninterrupted exchange and development of tools and work items. Industrial production must provide products for both personal use and for common and general social use, as well as for the further purposes of industrial production. For this reason, the process of obtaining material goods with industrial production must be well thought out and purposeful, because the way and speed of obtaining usable values in industrial production gives many products but also consumes many tools and labor items. Therefore if the process of obtaining material goods in an industrial way is not well thought out large losses of labor, time, energy and tools occur.

Industrial production consists, therefore, of the change of form and appearance, first of all of the natural goods, and later of those items which are separated from the bosom of nature, and which from the beginning of human action have, enclosed in itself the considerable amount of work. The results of industrial production are called industrial products or simply products. In parallel with industrial products, with usable material goods, or usable material values, in industrial production are also announced "unusable industrial products" - production services (transport, information, nutrition, etc.).

Work tools (machines, tools, installations, etc.) and work items (facilities), means of production, means of production are exchanged and developed inseparably. The means of production form the material basis of industrial production. The mode of industrial production depends on the relationship between the productive forces and the productive relations. The more developed the means of production and the more perfect the productive forces and productive relations, the more suitable will be the conditions for meeting the human needs of a society with industrial products, both in terms of variety and in terms of quantity and quality.

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1.1 Why quality management is needed

Quality management - the activity of managers and employees of an enterprise, which aims to continuously improve product quality. Moreover, it can be performed not only by senior management but also by ordinary staff.

Product quality management should be present in every organization, because it is this system that allows you to formulate the goals and objectives of the enterprise, and also provides the

necessary conditions for production and resources that contribute to the production of products that meet the set standards. .

The quality management system in the enterprise should function at all stages of the product life cycle, starting from the idea and preparation of project documentation. Once the product is put into operation, the information collection continues in order to make the next series of products more perfect.

The object of quality management is production, the subjects are the heads of the enterprise (not only the top managers, but also the heads of departments).

1.2. The main functions of quality management

- Planning;
- Organization;
- Coordination;
- Motivation;
- Control.

The quality management process in different organizations is carried out in its own way. However, there is a generally accepted scheme that defines the main actions of leaders at different levels.

Quality management and administration form a certain hierarchical system. For example, the senior manager must fully interact with the external environment, ie, respond in a timely manner to any changes in standards, as well as monitor innovations in the legislation governing this issue. Furthermore, he is obliged to draft a policy and define an action plan that will aim at improving the products.

The middle level manager must fulfill the duties of senior management related to compliance with quality standards. It's the bosses of this level who directly control the entire production process. That is, senior management sets the strategy, and middle managers build short-term action algorithms based on it. Thus, a multifaceted quality management system is formed.

Such quality management has certain features.

- a strategy aimed at improving products is reflected in managers at all levels;
- motivating employees to achieve high quality products;
- the production process is flexible in order to quickly adapt to changing standards and customer needs;
- the issuance is carried out in accordance with international criteria;
- quality management system in line with modern approaches and theories;
- all products must be certified.

Modern quality management presents many challenges for manufacturers, the implementation of which ensures its proper level. Despite the fact that following international standards is a voluntary initiative, a growing number of firms are joining it to strengthen their market position. Quality management objectives can be described as follows:

- improving the quality level, as well as ensuring product safety;
- improving the production process to achieve the highest economic results;
- creating a positive image in the market, which will significantly increase sales;
- gaining a significant advantage over competitors;
- investment attraction;
- entry into new markets;
- in case of following international standards - export of products abroad.

The company manager should be aware that ensuring a high level of quality is essential not only for the end customer but also for the enterprise itself. For what A competent quality management organization, as well as following all national and international standards, open new markets for products, therefore, they allow to achieve maximum profit.

1.2.1. Why quality management

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voluntary initiative, a growing number of firms are joining it to strengthen their market position. Quality management objectives can be described as follows:

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1.2.2. Quality management system

Enterprises have a certain structure, which means the interaction of all levels of management to ensure the proper quality of products. This is one of the preconditions dictated by modern market conditions. This phenomenon is known as a quality management system, which is guided by a number of principles:

- there should be a clear interaction between the heads of the various departments;
- quality management should use a systematic approach;
- it is necessary to distinguish between the product development process and its direct production process;
- this system must perform a limited number of functions that clearly separate it from the others available in the enterprise.

1.2.3. Quality management methods

Quality is a fairly broad and broad category, which has many features and aspects. One of these features can be considered the quality management method, a list of which is as follows:

Administrative methods are some directives that are mandatory. These include:

- regulations;
- regulations;
- standards;
- instructions;
- management orders

1.2.4. Basic principles

The principles of quality management are the basis of the system of international standards, and they can be described as follows:

- the production strategy must be completely customer-oriented (this applies not only to the assortment, but also to the level of quality of the goods);
- the management of the enterprise is responsible for providing the necessary conditions to achieve a certain level of quality;
- all company staff - from top to bottom - should be involved in the product quality improvement process, for which a motivation and incentive system should be used;
- quality management should be based on a systematic approach, which is the perception of all departments of the enterprise in their inseparable relationships;
- it is unacceptable to set final quality limits, but it is worth being guided by the principle of continuous improvement of its level;
- the adoption of any decision relating to changes in production technology to improve product quality must be justified by the figures characterizing the economic feasibility of introducing certain innovations;
- in an effort to improve the quality of the final product, it is worthwhile to demand the same from suppliers of raw materials, supplies, and machinery and equipment.

Compliance with these principles is key to an effective quality management organization.

1.2.5. The main elements that affect the quality of final products are:

- Elements of productivity
- investments
- Work organization
- Organizing protection at work
- Supply
- Organization of creation
- planning
- selling

1.3. Elements of productivity

In order to create certain material goods, it is necessary to have certain elements of production. In the work process these elements are announced in the role of:

- work tools,
- work items, and
- workforce

1.3.1. Work tools

With work tools man acts on work items to create usable material goods. Narrow-minded and broad-minded work tools are distinguished. Work tools in the narrow sense are those tools that one uses directly in the work process. And the means of labor in the broad sense include those passive means of work, without which the process of reproduction can not take place.

Without active and passive working tools no modern productive process can take place. In the work process work tools can participate in:

- the direct form of work, when they are acted upon directly on the objects of work, and in
- indirect form of work, when they do not act directly on the work items, but help the development of the work process.

According to the physical shape of the work tools are divided into:

- Land for production, auxiliary and construction purposes,
- Buildings for production, auxiliary and residential purposes,
- Operating and energy machines,
- Ancillary equipment, operating or supply,
- Means of transport (internal and external),
- Tools, apparatus, instruments, models,
- Inventory (manufacturer and auxiliary).

Although there is a similarity between knowledge of working tools and knowledge of fixed assets, however, this knowledge must be distinguished, because we have the inequality:

$$M_{th} > M_p$$

Where are:

M_{th} - the basic tools of the manufacturing organization, and

M_p - the working tools of the production organization.

1.3.2. Work items

Work objects (objects) which are used in industrial production organizations are either direct natural fruits, or are natural fruits on which a work process has been carried out, but in order to obtain the desired products they must be processed.

Depending on the degree of work done, work items are classified into:

- manufacturing material,
- semi-finished products,
- parts (of products), and
- unfinished products.

According to the commitment in the production processes of industrial production, the material is divided into:

- basic material,
- auxiliary material, and in
- supplementary material.

1.3.3. Working force

Man, work tools and work items participate in the work process. In order for a person to be able to produce any amount of necessary products with the work tools he has and from the work items he has at his disposal, he must have skills and opportunities. certain physical and intellectual.

Man's productive activity represents the work, the intentional activity of man in order to obtain the necessary material goods. So we can look at the work from many points of view, such as:

- mechanical (physical),
- economic,
- social (sociological, ecological, legal)
- physiological,
- psychological.

Division of labor. A special problem for the production organization is the division of labor force. In this view it should be known:

- the required number of employees, and
- their ability to perform certain work tasks.

1.4. investments

1.4.1 General knowledge on investments

Expenditures of financial means for the establishment, maintenance, replacement, expansion and increase of the utilization rate of facilities and other production facilities, as well as working tools in general, are called investments.

Work items in the production process are spent in full, and make working capital, which must be indivisibly compensated, work tools are gradually spent for more production cycles or for more years, and make fixed assets, which should not be replaced and compensated from time to time, but may be technically or economically obsolete, or altogether.

1.4.2 Types of investments

With the classification and study of investments, opportunities should be created for making the most appropriate decisions regarding the engagement of new financial means. Investments should have priorities, so it should be known with certain means where to invest.

Investments can be classified according to different criteria, among which are distinguished:

- Investments according to the basic commitment,
- Investments according to the technical structure,
- Investments by economic features,
- Functional investments in reproductive processes, and
- Investments by sources of financial means.

1.4.3 Investment efficiency

With investments, the basic social and economic goal of material production must be realized: to produce the necessary material goods to meet individual, common and general social needs. The production achieves the expected economic results with the positive technical and economic business and the positive economic and commercial business.

The productive organization that invests reduces the cost in the present, but with these creates the material basis for greater spending in the future.

Investment activities as well as the whole business policy of the enterprise should be based, from the point of view of investment efficiency, on the rationalization, modernization and replacement of the existing capacities of the enterprise.

1.5. Work organization

1.5.1 Workplace

The workplace is the designated space where work items are operated on. The workplace is organized to meet the technological and biological working conditions. Technological working conditions include tools and work items with which a certain work process can be successfully developed. Biological conditions include the conditions of the workplace in which man can most easily release the working energy without harmful consequences for his health and the environment to which the workplace belongs.

The necessary jobs are provided by the division of labor in the process of reproduction. We distinguish:

- horizontal division of labor, and
- vertical division of labor.

With the horizontal division of labor in the process of reproduction, certain complex tasks are subdivided into work tasks which can be performed by individuals in the workplace. In this way the number of jobs and the necessary number of executors of work tasks are found.

With the vertical division of labor in the process of reproduction becomes the global division of general working tasks of the enterprise into special tasks. With such a division are the types of functions and their sizes in the enterprise.

1.6. Organization of the defender at work

In different work processes act people with different professional training and with tools of different technical and technological levels on different items more or less harmful work. Different work processes take place at different speeds and in different working conditions. Therefore, protection at work is done in order to preserve the good health of the members of the working collective and the property of the enterprise.

According to this we distinguish:

- labor protection, and
- protection of enterprise assets.

1.7. Labor protection

In the process of work the human body is exposed to various harmful influences. These harmful impacts can come from work tools, work items, driving energy and other energies which are used in the work process. Risks from work are threatened in the form of various diseases or injuries. These risks generally represent risks in the workplace. So in order to avoid injuries, precautions must be taken which provide the worker during his work, so it is always better to prevent the occurrence of diseases and injuries at work than to cure them.

For this purpose in our country there are a large number of general acts and regulations for protection at work and for the protection of the environment.

From what has been said we learn that the role of labor protection at work is directly related to the preservation of human health in the work process, in some cases, when he works with life-threatening items, and that may have effects lateral.

1.8. Supply

1.8.1 Organization of supply

According to the functions performed, the supply is part of the economic and financial business of the enterprise. However, because it is a phase which precedes the beginning of the production process, it represents the important conditional function of production, respectively it represents the important subsystem of the production system.

Figure 5.1 shows the organizational diagram of the supply subsystem of an industrial manufacturing organization.

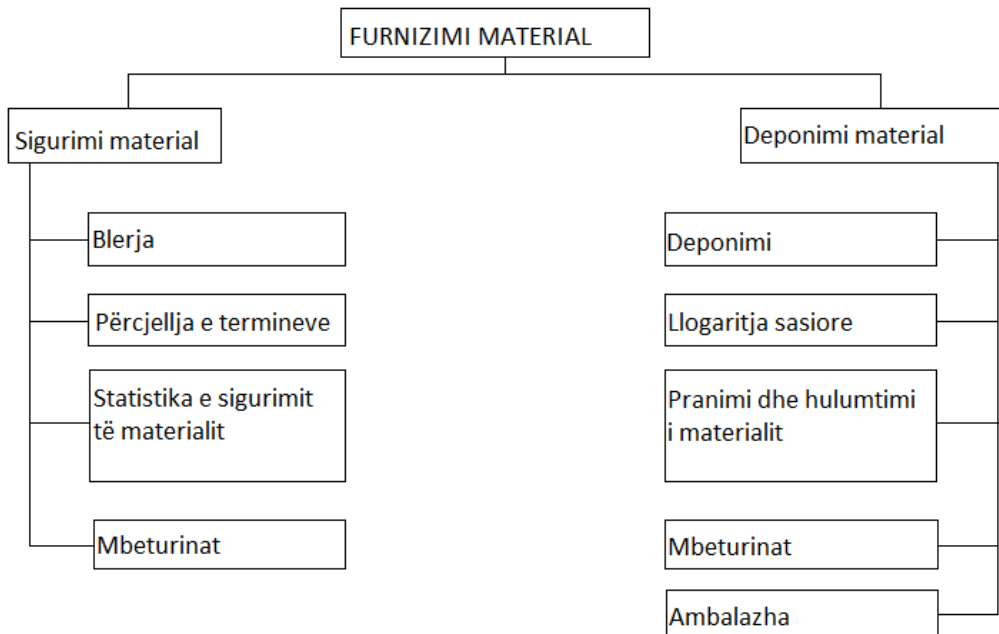


Figure 5.1. Organizational scheme of the supply subsystem of an industrial manufacturing organization

1.9. Organization of creation

From an organizational point of view, we distinguish between narrow-sense productivity and broad-sense productivity.

Broad-minded productivity represents the production process of industrial enterprises, which includes all the work which serves to turn raw material into finished production.

Production in the narrow sense, represents the basic production process, the direct processing of the raw material into finished product, respectively the technical and economic function of the general business of the industrial production organization.

Production process consists of one or more technological processes. The technological process represents the direct change of work items, in terms of appearance, shape, dimensions, properties, etc.

1.10. planning

The rapid development and advancement of the productive forces and the existence of a great opportunity for their concentration and productivity and placement of various products in ever-larger markets, etc., increasingly pose the need to harmonize the various business elements with the development of the productive forces and with the changes of the productive relations, more and more developed.

This predictive activity of future events and the orientation of the economic activity of a social community, economic activity or branch, of the enterprise or its organizational unit to the workplace, or of the individual within a certain period of time is called meaningful planning. wide.

There are different plans. The developed economic system differs:

- The development plan of the whole social community
- The plan of the republic
- Regional plan
- Municipal plan and
- Enterprise plan.

Planning should be done on the basis of scientific and professional studies of all elements with an impact on the results achieved under the plan. For this reason the planning process is based on several principles which are:

- Economic principles of planning and
- Methodological principles of planning

These principles apply from the beginning of planning, when the goals and tasks of planning are set, to the end of the planning process.

1.11. Sales organization

Sales is the latest activity in the extensive production process, and is implemented in market-dictated conditions. Market research determines the requirements of consumers, which serve to design the production plan and program.

By organizing the sales system, the enterprise ensures the conversion of assets engaged in the production process into cash, with which it meets the requirements of suppliers, pays personal income and fulfills legal and social obligations.

The basic tasks of sale, respectively realization are:

- Sales market research,
- Sales planning,
- Sale of goods and services,
- Economic propaganda,
- Receipt and delivery of finished products,
- Evidence of sales,
- Economic analysis, audit and sales control.

According to this, the task of the sale is to turn the products into money, while with the organization of the sale, the orders and their fulfillment in time must be ensured.

1.11.1 How to build modern quality management in a company

Tip 1: Quality management should start at the top, not the bottom. If the initiative is shown from below, then the system is not taken seriously, and the effect will only be official.

Tip 2: It is necessary to train all staff and management involved. Often, managers believe they have enough knowledge to properly manage the company. However, you need to understand that employee thinking still needs to be adjusted, it is necessary to focus on well-coordinated teamwork and customer loyalty.

Tip 3: The implementation should not be organized with the help of any internal service of the enterprise. All staff should be involved in this process, without exception.

Tip 4: It is necessary to link the quality management system with the already existing concepts in the company (motivational, strategic management, etc.), as it is necessary to create a single integrated management system.

conclusions

Managing an organization, in terms of quality, means that all activities are subject to defined quality objectives, and to achieve these objectives, the organization has developed a system of plans, has the necessary resources and takes action to achieve the goals. .

In order for the consumer to receive quality products, a management system is needed that takes into account the interests of all actors. This approach makes the implementation of the quality system throughout the integrated supply chain less controversial. The implementation of the proposed system may allow the production manager of:

- Manage production immediately, minimizing risks;
- Avoid unreasonable losses and minimize production costs;
- Receive real-time operational information;
- Manage processes flexibly.

These principles of quality management form the basis of the philosophy philosophy of quality management system standards in the ISO 9000: 2000 family.

Evaluating the effectiveness of quality management systems, as well as any systematic changes in the activities of the organization, is a very difficult task. Although improvements resulting from the regulation of quality management system activities should actually (and not formally) be qualitatively tangible, the systemic effect is difficult to determine.

Product quality management should be performed systematically, ie. the enterprise must establish and operate a product quality management system.

recommendation

As we have mentioned business is the basic cell in which income and profit are created, but this is not the main reason for doing business. The main reason for doing business is to meet the common needs of society.

In the competition in the market, functional quality is becoming more and more important. This requires the introduction of new organizational systems not only in production systems but also

in quality management systems. Quality management systems are increasingly integrated with the organization's management system. High quality is becoming the factor that unites organizational units, connects them with a common goal, breaking down barriers between them.

For products to be competitive, constant, focused, attractive work of manufacturers to improve quality, systematic quality control is necessary, in other words, we can say that any enterprise that wants to strengthen its position in fierce competition and to maximize its profit, should pay close attention to the quality management process.

It is worth noting the annual increase in competition in the market. One of the key aspects of this process is precisely the compliance of the goods with the quality standards. As a result, companies need to pay more and more attention to this aspect of production. In this regard, there is a need for a certain material base, as well as modern equipment and technology. However, the most important point is the staff. It is important to implement the right motivation system as well as a management philosophy in which each employee will feel personal responsibility for the final characteristics of the product.

conclusion

Company management plays a key role in the success and the way a company operates and operates.

Managers are those who carry on their shoulders a great responsibility in the failure or success of the company.

The objective of this paper is to elaborate as best as possible the impact that the managerial level has on engineering products, or we can say the impact on a company of a different nature. Recognizing the requirements and interests of employers and employees or employees, managers and owners of capital, as common and non-antagonistic requirements is the new basis of company management.

The real interest of these stakeholders in the general economic activity is really the same. We can justify this with the example of providing conditions for the existence of one party as a condition of existence of the other party. Prosperity of employers can not last for a long time if it is not accompanied by prosperity of workers or other stakeholders and vice versa.

So finally we can say that successful implementation is possible if:

- The main regulated activities of the company, as well as compliance with the documentation system of its real activities.
- Process management, within the framework of which the requirements for resources, inputs and procedural results are clearly defined, the criteria for evaluating customer satisfaction and performance and fixing deviations by identifying the causes and their further elimination.
- Direct involvement of senior managers in planning, analyzing and coordinating system performance.
- Improving process efficiency indicators, in the presence of increased customer satisfaction and product quality.
- Willingness of staff to work (with the right motivation and resources needed).
- Improving the overall performance of manufacturing companies.

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