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PRODUCTION PROCESS AND INDICATORS OF PRODUCTION SYSTEMS

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ABSTRACT

The concept of a production process can be defined by all the conscious actions of the employees of an enterprise, directed by different machinery, equipment or installations on raw materials, materials or other components for the purpose of their transformation into products, works or services with a certain market value. Taking into account these components, the concept of a production process can also be defined by the totality of work processes and natural processes that compete for the production of products or the execution of different works or services. The production activity is carried out through the production process, which has to be characterized both socio-economically and technically.

KEYWORDS: production process, indicators, systems, industrial, enterprise

1. Introduction

The production of raw materials as a result of the process of industrial production is the main activity of the industrial enterprises. The activity of obtaining material goods presupposes the existence of a set of raw materials and materials, also called labour objects, taken from nature or representing the result of other activities. By processing them with the help of manpower operated or supervised by man, they become economic goods destined to meet the consumption needs of the society.

The production activity includes:

- the actual manufacture of industrial goods, activity carried out through the industrial production process;
- laboratory work, research and assimilation in the manufacture of new products, activities directly linked to the actual manufacture.

It is noted that the factors that condition the process of production are:

- the conscious actions of people, namely the workforce; the objects of labour, respectively natural resources;
- means of work, namely capital;
- natural processes.

From a technical and material point of view, a process of production means all the technological processes, and processes involved in the production of products or the execution of the works and services that are the object of the enterprise's activity.

Classification of production processes. Production processes are classified according to several criteria, such as: how they participate in obtaining the finished product;

► execution mode; how to obtain the finished products from the raw material;

► the degree of periodicity of the time course; the technological nature of the operations carried out;

► the nature of the activities carried out.

In relation to how to participate in the production of the finished product, the production processes are grouped into several categories.

A. basic production processes are processes that aim at transforming different raw materials into finished products, which are the object of an enterprise's business. Basic processing processes, through which the processing of raw materials and materials is carried out in order to obtain finished products.

B. Auxiliary production processes products or works that are not the subject of the core business of the enterprise, but which ensure and condition the smooth running of the core processes.

C. Serving or serving production processes are intended to perform services that are not the object of the enterprise's core business, but which contribute to their performance in both the core work processes and the ancillary processes.

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Table 1. *Stages of the industrial production system*

STAGE	ACTIVITY
PLANNING	- planning workforce; - material consumption planning; - cost planning; - planning of research and development activity; - production planning; - planning of dissolution.
PROCESSING	- drafting the launching order in the manufacture; - production planning; - product design; - supply; - storage of materials; - manufacture of parts; - assembling parts; - product testing; - storage of products; - the transport of products.
CONTROL STAGE	- control of direct and indirect labor costs; - control of material costs; - control of indirect costs; - control of design and development costs; - control of product quality and compliance with storage conditions.
THE FINANCIAL STAGE	- drawing up wage states; - managing orders to collect and collecting them; - managing the amounts to be paid and making the necessary payments; - collection and distribution of data on direct labor costs, indirect costs, materials costs, design costs; - the implementation of new financial regulations; - tax accounting; - stock records; - making financial estimates based on available data; - cashing operations and payments.
INFORMATIONAL STAGE	- design of parts lists; - developing specifications for how to use the parts; - providing data on the safety of the parts; - elaboration of processing programs; - providing information on working standards, quality, staffing.

2. Steps of the production process

Viewed as a whole, the production process consists of operations that can be grouped according to the activity they participate in:

- technological operations;
- control operations;
- transport and storage operations.

The production process has to be divided into operations, because only in this way can the necessary number of workers in different trades be established and their distribution can be achieved as needed in different jobs.

It is also possible to establish a precise record of the results of each worker's work, both with the aim of appropriately remunerating them, and of stimulating the increase in labour productivity.

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Whatever their nature, being executed by a worker, operations can also be called labour operations. Indicators of production systems.

Production includes all the transformation activities of an enterprise. Because of its importance, production is one of the functions of the enterprise. There are several ways to design and lead a business. The enterprise can be compared to a living, biological organism, whose existence is ensured by the performance of certain functions. The function is an abstract theoretical concept used to order the complex and varied activities of the enterprise (as opposed to functions, activities have a specific character). The systemic approach attempts to propose a model of the enterprise, which mainly highlights the interactions taking place within it.

The functional approach uses function identification. The notion of enterprise-wide operation emerged as a result of studies on division of labour and identification of objectives.

Table 2. *Elements of the production process*

ELEMENTS OF THE PRODUCTION PROCESS	CHARACTERISTICS OF THE PRODUCTION PROCESS	EXAMPLES OF ELEMENTS OF THE PRODUCTION PROCESS
TECHNOLOGICAL OPERATIONS LABOR OPERATIONS: CONTROL OPERATIONS TRANSPORT OPERATIONS	- only one executor is responsible for the execution of the operation; - the operation is performed on a particular job within the same technology;	- machining a shaft.
STAGE	- is part of the work operation; - the same work tool is used, - the same technological regime applies; - the subject of the work undergoes only one technological transformation;	- rotary turning; - finishing turning; - drilling.
PASSING OR PASSAGE	- the subdivision of the phase is repeated identically and with the same working regime;	- removing the processing insert by making several passes in the turning stage of grinding.
EXECUTION	- a group of movements of a performer, determined by a well-defined purpose;	- clamping the workpiece in the vice; - measuring the piece.
MOVEMENT	- there is the contact or the detachment of the machine operator or his control bodies, the object of the work; - the displacement of the performer occurs.	- raising your hand to the piece; - moving the piece.

3. Conclusions

The current economic context is marked by the increasing importance of quality as a determinant of the competitiveness of organizations. More and more industrial units and service organizations are concerned to use techniques and tools applied in quality management to facilitate continuous performance improvement so as to fully meet customer requirements in terms of efficiency and effectiveness. Globally, the stock of knowledge grows much faster than in the past. Simultaneously with its amplification, there is a diminishing of the dependence on the classical resources, gradually emerging the primacy of knowledge as the main capital of the organization. For example, in the US there was a 20% decrease in tangible assets to produce one-dollar sales over the existing one quarter a century ago. As highlighted at the 35th Annual Conference of the European Quality Organization, held in Prague in 1991, Dr. Joseph M. Juran, the global symbol of total quality management, for the countries of Eastern Europe, the only chance to succeed in the current situation and to quickly regain lost time is quality.

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A brief analysis of the world economic picture of the years in which we are able to highlight unquestionable defining features: the rapid diversification and renewal of commodity supply under the impact of rapid science and technology development, the globalization of markets, facilitated by advances in telecommunications, customers and society. In these circumstances, the quality of products and services has been imposed as a determinant of the competitiveness of the organizations. On the other hand, there is growing interest in quality assurance issues at national, regional and international level.

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