

**CONSIDERATIONS ON THE PRODUCTION SYSTEMS
ORGANIZED “JUST IN TIME” AND MANAGERIAL
ACCOUNTANCY IN THE ROMANIAN ZOOTECHNICAL
ENTERPRISES**

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Abstract:

The economic enterprises must produce based on performance and competitiveness criteria, regardless of the field of activity and national belonging. This is possible only based on advanced production technologies and competition strategies adequate for the continuously shifting market situations.

The managerial accountancy system also has to be adapted to the advanced production technologies.

Thus, a new concept emerges, a new philosophy related to the production management system: JIT – JUST IN TIME (production system in useful or real time).

The JIT operational system includes the reduction of production cycles and the production of high quality goods, exactly at the moment and in the quantities requested by the market.

According to the JIT philosophy, we do not produce everything and in any quantity, but only what was requested and in the requested quantity.

The activity of the Romanian zootechnical enterprises has to be oriented towards this philosophy, where the implementation of the JIT operational system is possible.

Keywords: *JIT operational system, stock reduction, increase the quality of products, Kanban, customer*

JEL Classification: *L25, J24.*

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The continuous globalization of markets, based on the current economic crises and taking into consideration the limited resources, determine the economic organizations to adopt the fast changing attitudes of the production technologies and to create competition strategies capable to “save” them in this competition battle.

The advanced production technologies include the reorganization of the production processes and the restructuring of the main activities, based on which both the producers and the consumers (customers) gain advantages.

The idea of advanced production technologies represents a general name which includes the ecological production technologies, computer aided design and production methods, flexible production systems, total quality control, advanced production management elements, including the planning systems of all the production resources and they are related to:

- the computer aided design and production methods (systems):
 - CAD Computer Aided Design
 - CAM – Computer Aided Manufacturing
- the flexible production systems:
 - FMS – Flexible Manufacturing Systems
- the total quality control systems:
 - TQC – Total Quality Control
- the production management systems:
 - MRP – Materials Requirement Planning
 - JIT – Just in Time

The traditional managerial accountancy systems and instruments to measure the performance become inadequate within the new production systems. Once the enterprises implement the advanced production technologies, the accountancy procedures and techniques necessary to monitor the activity also have to be modified. The main objective of the advanced production technologies is to “support” the enterprises to fulfill the performances established and, thus, to become competitive in the competition battle.

The JIT operational system consists in the reduction of the production cycles and the production of high quality goods exactly when they are required. It aims to produce or buy the requested good/service only in the necessary quantity and quality, in useful time, in order to be available in the requested place, in the following manner:

supply of materials and products necessary to start the manufacture of products;

manufacturing of semi-finished products in a manner in which at the end of their manufacturing, they would comply with the effective start date of the manufacturing of semi – finished product;

execution of the finished products in a manner in which at the end of their manufacturing, they would comply with their delivery.

Subsequently, the JIT system is a system where the manufacturing is generated by the demand, and the production process is only initiated when there is a demand of products from the customers so the product is not stored.

The customers became increasingly less tolerant towards the inadequate quality and delay in deliveries. In order to satisfy their customers, managers seek efficient means in terms of costs, to continuously improve the quality of their products and reduce the delivery time (storage costs).

The quality costs are related to the costs undertaken in order to prevent the low quality production or the costs occurring as a result of this production.

The storage costs are related to all resource consumptions generated by the storage facilities (their construction and operation), the deterioration of stocks, the control instruments of stocks, the inventory management personnel, etc.

Beyond the reduction of stocks (if possible, even the orientation towards their zero level), the objective of JIT is to totally eliminate the waste from all stages of the production process: supply – manufacturing – delivery and the reduction of any activity which does not add value to a product (the transportation, storage, waiting in-line, inspection period). Thus, the JIT system also represents a managerial philosophy of progress.

The JIT operational environment includes the following elements:

Elimination of stocks;

Creation of a pull – through production planning and scheduling system;

Division of batches;

Fast and cost efficient adjustment of devices;

Creation of flexible operational cells;

Training of a multiple qualified labor force;

Maintenance of high levels of product quality.

1. The elimination of stocks impacts the costs through:
elimination of the space necessary to store any kind of stocks;
reduction of the volume of goods damaged throughout storage;
reduction of the control instruments of stocks;
reduction of the technical – operational and accountancy records of stocks;
reduction of volume of products to be manufactured.

The fulfilment of such orientation supposes that the level of the basic material stocks should be near the zero value. In this case, the following conditions must be fulfilled:

the selection of the providers available and able to supply basic materials on time

the selection and maintenance of the suppliers whose geographical position is as close as possible to the enterprise which implements the JIT system

the maintenance of the relationship with the suppliers which guarantee the supply of basic materials of highest quality.

The “zero stocks” goal is not necessary to be achieved because some uncertainties may occur (for example, strikes of transporters).

2. Creation of a pull – through (determined) production planning and scheduling system. It supposes that:

- the production should be scheduled taking into account the orders of the customers;

- the orders of the customers determine the purchase of the basic materials;

- the purchase of the basic materials is done taking into account the necessity.

Thus, the production takes place depending on the market demand and not otherwise. A larger production leads to a waste of basic materials and to the formation of stocks, while a smaller production leads to unsatisfied demands.

3. The division of batches supposes that both the purchase of the basic materials and the production and supply of products should be done depending on necessities, in smaller batches. This assures:

- the maintenance of the low level of stocks;
- the aim of production is not the storage.

4. The fast and cost efficient adjustment of devices by creating a monitoring and a preventive maintenance system in order to avoid the unexpected (unwanted) derangements.

5. The creation of flexible operational cells supposes:

the grouping and arrangement of devices in order to form an autonomous production line, a flexible operational cell, able to fulfil all the necessary operations continuously and efficiently;

the fulfilment of processing of products having similar forms and dimensions (family of products);

families of products imply a number of adjustments of devices when passing from an order to another;

the more flexible the operational cell, the smaller the total production time.

The total production time= the time used for value-added activities+ the time used for the non-value-added activities.

6. Training of a multiple qualified labor force, able to lead in each individual the operational cell (a person can use simultaneously some different types of devices, can have duties like adjusting, re-equipment and even the current repairs of the devices).

7. The maintenance of high levels of product quality is assured as it follows:

basic materials of high quality;

verifications during the production process;

incorporation of the inspection operations in the continuous production activity;

the verification of the quality of products by the equipment operators as they cross the production process;

the detection not only of the potential defaults but also of their causes.

The use of the JIT principles has both advantages and disadvantages.

Advantages:

Low investments in stocks;

Reduction of costs with administration of stocks (including the record activity);

Reduction of the total production costs through the elimination or diminution of the non-value-added activities;

Saving storage facilities by reducing the stocks;

Reduction of delivery terms to customers;

Superior satisfaction offered to customers through the superior quality of the products;

The capacity of a prompt adaptation to the market changes;

Reduce the risk that the stocks become overdue.

Disadvantages:

Keeping some unused resources, the production being demanded on the market;

Any incident, default, strike, non-quality generate implications for the production process as a whole

The KANBAN method is an integral part of the JIT system.

The KANBAN system is created in order to produce on demand. This means that an upstream production process has to produce only what was demanded by a downstream production process which, in its turn, has to produce only what was demanded by another downstream production process and so on.

Kanban is a supervision and information system which controls the production. It is the “heart” of the JIT system. The enterprises which want to become and remain competitive must evolve towards JIT. It’s also the case of some zootechnical enterprises from Romania, i.e those enterprises which production is based on advanced technologies.

Nowadays the Romanian zootechnical enterprises produce by virtue of inertness, becoming bankrupt after some years. Those who choose the advanced and competitive zootechnical production have only a variant: advanced production technologies and appropriate managerial accountancy techniques.

Although it implies consistent investments, the implementation of the JIT system in the zootechnical production is possible in all the zootechnical sectors where the production is automatic and is done based on orders.

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