

УДК 657.1

JEL Classification: M41; M11

DOI: <https://doi.org/10.54929/2786-5738-2023-9-09-01>

## PROCESS-ORIENTED MANAGEMENT OF PRODUCTION INVENTORIES: ACCOUNTING AND ANALYTICAL ASPECTS

## ПРОЦЕСНО-ОРІЄНТОВАНЕ УПРАВЛІННЯ ВИРОБНИЧИМИ ЗАПАСАМИ: ОБЛІКОВО-АНАЛІТИЧНІ АСПЕКТИ

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*Increasing the adaptability of enterprises to the external environment and increasing the efficiency of inventory management is extremely important in the context of martial law. At the same time, high-quality accounting and analytical support plays an important role. The article studies theoretical issues and practical aspects of accounting and analytical support for process-oriented management of production stocks. It considers the role of accounting and analysis in ensuring the process-oriented management of production stocks of an enterprise. The accounting and analysis of production stocks as auxiliary processes in the enterprise's activities have been described. The study of the peculiarities of documentary registration of production stocks of enterprises is in-depth. Directions for improving the primary accounting documents in order to improve the analytical support of production inventory management have been proposed.*  
**Key words:** documentation; process; process-oriented management; accounting; analysis; stocks; production stocks.

*Підвищення адаптованості підприємств до умов зовнішнього середовища та зростання ефективності управління виробничими запасами є надзвичайно актуальним в умовах воєнного стану. Складність управління господарською діяльністю на сучасному етапі господарювання обумовлена тим, що облікова інформація, яка є ключовою для ухвалення управлінських рішень, може мати ризик невідповідності критеріям повноти, аналітичності, оперативності та достовірності. Тому наразі гостро стоїть проблема формуванні достовірного обліково-аналітичного забезпечення процесно-орієнтованого управління виробничими запасами, які є вагомим частинкою матеріальних активів будь-якого виробничого підприємства. Концепція процесно-орієнтованого управління передбачає необхідність виділення підпроцесів надходження, вибуття у виробництво та іншого вибуття виробничих запасів при формуванні облікового забезпечення управління ними. Використання саме цього підходу і розробка первинних документів за виділеними підпроцесами дозволить підприємству отримати інформацію для реалізації системи «Kanban», концепції*

*постійного удосконалення управління виробничими запасами та забезпечення конкурентоспроможності діяльності. В статті досліджено теоретичні питання та практичні аспекти формування обліково-аналітичного забезпечення процесно-орієнтованого управління виробничим запасами. Розглянуто роль бухгалтерського обліку та аналізу в системі забезпечення процесно-орієнтованого управління виробничими запасами підприємства. Описано бухгалтерський облік та аналіз виробничих запасів як допоміжні процеси в діяльності підприємства. Доведено, що процес бухгалтерського обліку виробничих запасів повинен включати власника процесу (бухгалтера з обліку виробничих запасів), первинні та вторинні входи, первинні та вторинні виходи, діяльність з перетворення виходів у виходи, діяльність з управління процесом. Поглиблено дослідження особливостей документального оформлення виробничих запасів підприємства. Запропоновано напрями удосконалення первинних бухгалтерських документів за рахунок доповнення їх додатковими реквізитами з метою покращення аналітичного забезпечення управління виробничими запасами.*  
**Ключові слова:** документування; процес; процесно-орієнтоване управління; бухгалтерський облік; аналіз; запаси; виробничі запаси.

**Statement of the problem in a general form and its connection with important scientific or practical tasks.** In the context of martial law, the issues of increasing the adaptability of enterprises to the external environment, improving the quality of customer service, and increasing the efficiency of all enterprise processes become particularly relevant.

The complexity of managing business activities at the current stage of economic activity is due to the fact that accounting information, which is key to making management decisions, may be at risk of not meeting the criteria of completeness, analytical quality, efficiency, and reliability. Therefore, there is an acute problem of forming reliable accounting support for the management of production stocks, which are a significant part of the material assets of any manufacturing enterprise. This can be solved by building an integrated organizational and economic mechanism of process-oriented management. In this context, an important condition for the implementation of process-oriented management is the description of all processes existing at the enterprise (both basic, managerial, and supporting).

**Analysis of the latest studies and publications, which the author relies on, which consider this problem and approaches to its solution.** The development of certain aspects of the implementation of process-oriented enterprise management is the subject of research by domestic and foreign scholars such as D. Jeston [1], Davenport T. H. [2], who described the essence of the process approach, L. Shymanovska-Dianych [3], which developed a mechanism for implementing process management at trade enterprises.

The peculiarities of documenting transactions in accounting on the basis of the process approach were studied by S. Legenchuk, K. Volska, O. Vakun [4].

The use of the process approach to the organization of the accounting system was described by O. O. Osadcha, A. O. Akimova, Z. V. Gbur, I. I. Krylova [5].

**Highlighting previously unsolved parts of the general problem, to which the specified article is devoted.** At the same time, the issues of organization of supporting processes, in particular

accounting and analysis, in the process-oriented management system are not sufficiently and one-sidedly covered in the scientific literature. There are practically no studies on accounting and analytical support for process-oriented management of production inventories.

Therefore, it is constructive to study the peculiarities of the organization of accounting and analysis of production stocks in the system of process-oriented management of an enterprise.

**Formulation of the goals of the article (statement of the task).** The article is aimed at clarifying the peculiarities of organizing accounting and analysis in the system of process-oriented management of production stocks of an enterprise.

**Presentation of the main research material.** Process-oriented management is a management activity based on a system of interrelated processes and aimed at achieving targets to ensure the competitiveness, efficiency, and success of the enterprise in the long term by meeting customer needs [3].

The purpose of process-oriented management is to identify and manage a set of processes to ensure the long-term efficiency and development of the enterprise. This necessitates a clear understanding of the essence of the process and a description of all enterprise processes (main, managerial, and supporting).

We propose to understand the concept of process as a sequence of logically connected, repeated operations, the implementation of which requires resources that, using a certain technology, are transformed into products and services that are valuable to the consumer and create the prerequisites for achieving the goals and effective operation of the enterprise.

Accounting and analysis, as enterprise processes, are considered to be supporting processes. Their primary purpose in the process-oriented management system is to provide users with relevant information for making informed decisions, as well as to determine the degree of achievement of previously set goals.

However, research shows that the main problem of existing accounting and analysis systems at

Ukrainian enterprises is their inability to provide timely information to management and other users for making management decisions.

Financial statements prepared in accordance with the requirements of accounting regulations (standards) are specific, complicated by a lot of data that are not important from the point of view of the management, difficult to understand, and do not provide the information necessary for the operational management of inventories. As a result, management makes unreasonable, unjustified, and erroneous decisions based on financial statements, which often lead to losses for the company.

One of the ways to resolve this situation is to organize accounting and analysis based on the principles of the process approach. It allows to eliminate existing cross-functional barriers, accelerate the execution of enterprise processes, and most importantly, orientate each process to meet the needs of its customers. In other words, process-oriented management changes the management philosophy. All processes are described from the opposite: first, the requirements of process consumers are determined, and only then are ways to meet these needs sought. In this case, an important step is to describe the process of accounting for inventories in the process-oriented management system.

The concept of process-oriented management of production stocks implies the need to allocate sub-processes of receipt, release into production, and other disposal of production stocks when forming accounting support for their management.

Fig. 1 shows a diagram of the accounting process as an essential element of the accounting organization in the system of process-oriented management of production stocks.

To achieve the planned result, a process management system is required, which, at a minimum, should include a process owner who acts according to certain rules, has the resources necessary to perform the process, is responsible for its outcome, and has a high level of efficiency. For the inventory accounting process, the process owner is the inventory accountant.

The requirements for the inventory accounting process are determined by the highest management body in relation to this process. These are the top management of the enterprise, the chief accountant, and government authorities that form the regulatory framework and requirements for mandatory reporting of the enterprise. Management information from them (orders, plans, regulations, budgets) is received as input to the process, and after the end of the reporting period, information in the form of analytical reports is received from the process owner to the top management level in relation to the process.

Since a process is a sequence of logically related, repeated operations, each process must have boundaries, i.e., a beginning and an end, which should be designated by inputs and outputs, which can be informational or material.

The primary input is an input that initiates the start of the process and receives material flows and information from primary suppliers. For the process of inventory accounting, the primary input is usually a transaction and a primary document confirming it.

It should be noted that a serious problem with the formation of accounting support for inventory management is the lack of standard forms of primary accounting for inventories for Ukrainian enterprises. Currently, all business entities are forced to develop their own forms of primary documents to reflect the movement of inventories and approve them by an enterprise order, which additionally specifies the list of persons responsible for the business transaction and authorized to sign primary documents.

In our opinion, the basis for the development of primary documents for the accounting of inventories may be the forms provided for in the Methodological Recommendations on the use of specialized forms of primary documents for the accounting of inventories in agricultural enterprises [6] or the Order of the Ministry of Finance of Ukraine No. 431 «On Approval of Standard Forms for Accounting and Write-off of Inventories by Public Sector Entities and the Procedure for Their Preparation» [7]. These documents define the list of primary documents that accompany the movement of inventories. In particular, it is stated that «acceptance and posting of material assets received from suppliers or outsourced processors may be documented by a consignment note using a stamp (mark) of posting» [7].

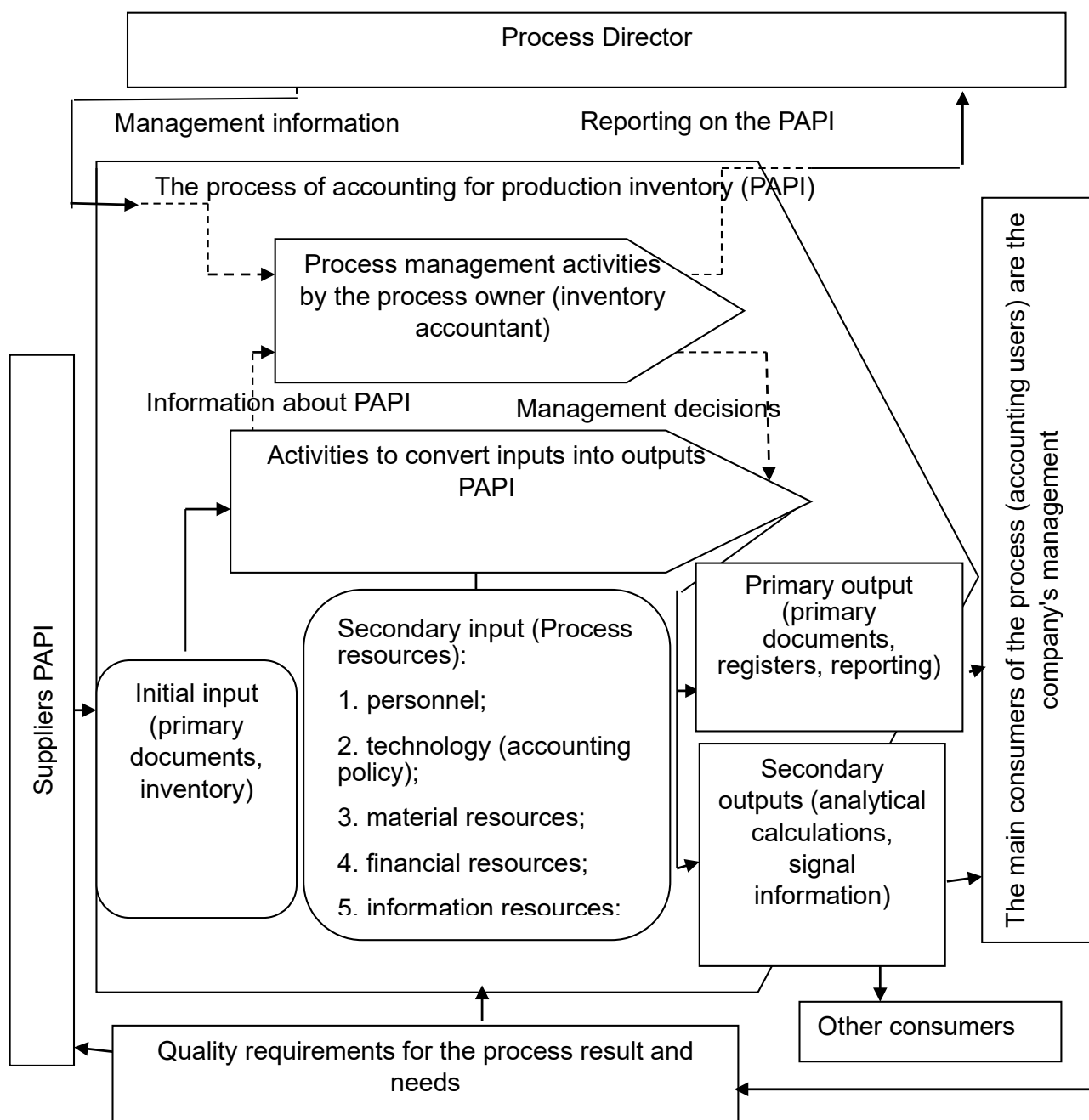
In case of free receipt, an inventory transfer and acceptance certificate is drawn up, and if the company has identified quantitative or qualitative discrepancies between the actual production stocks received and the supplier's supporting documents, an inventory acceptance certificate is drawn up.

In addition, in accordance with Order No. 431 [7], a receipt order may be drawn up on the basis of the supplier's documents, which confirms the fact of the receipt of production stocks at the enterprise and is recorded in the stock accounting card (book). When releasing production stocks into production, it is recommended that a limit and pick-up card be issued and an entry made in the warehouse accounting card. Despite the fact that these forms are up-to-date and take into account all legal requirements, in order to improve the analytical quality of accounting information, we suggest that the receipt order and the warehouse accounting book be supplemented with the «group of production stocks» requisite.

This will improve the quality of accounting support for inventory management when using the Kanban system, which is extremely relevant in

today's environment and allows for minimizing the cost of storing inventory and, as a result, reducing the cost of finished goods. The introduction of the proposed requisites will allow for to division of the

inventory into groups at the stage of receiving it and to transfer the information to the company's management in time to order the next batch while minimizing the cost of storing inventory.



**Fig. 1. Scheme of the accounting process in the process-oriented inventory management system**

Source: compiled by the authors

We suggest dividing all received inventory into three groups:

group A - production stocks that are of primary importance for production. The balance of such inventories in the warehouse should be at least three days' worth of their production requirements. When choosing a supplier of inventories for this group, the quality of the inventories, reputation, and reliability of the counterparty should be of primary importance;

group B - inventories that are essential for production but are readily available on the market.

The balance of such stocks in the warehouse should be at least two days before their production requirements. When choosing a supplier of inventories in this group, the main criterion should be the price-quality ratio;

group C - production stocks that do not account for a significant share of production and can be replaced by analog stocks. The balance of such inventories in the warehouse should be at least equal to their one-day production requirement, and the main criterion for choosing a supplier of inventories of this group should be the price.



Secondary input is an input that occurs during the course of a process, an input that receives resources to ensure the smooth execution of the process. This includes, in particular, personnel, material, financial or information resources, as well as formalized process technology.

In the context of the process of accounting for production stocks of an enterprise in the context of the war between Ukraine and Russia, the choice of information technologies used for accounting is an important issue. This is primarily due to the fact that most Ukrainian enterprises until recently used a specialized accounting computer program of the aggressor country 1C-Enterprise and are now forced to switch to domestic IT systems. In our opinion, it is advisable for manufacturing enterprises to switch to the Debit Plus v12 software, which contains a separate module for inventory accounting and meets the typical analytical requirements of a modern enterprise for inventory management.

It should be noted that the activity of converting inputs into outputs of the process is shown separately in the diagram, since there may be a difference between the work actually performed within the process and the methods of its implementation, which are documented in the form of technology and fixed in the accounting policy. Therefore, in the process of analyzing the effectiveness of inventory management, it is necessary to constantly monitor the compliance of the inventory accounting technology with the actual activities to transform inputs into outputs of the accounting process.

With regard to production inventories, the elements of accounting policy (accounting technology) are: «unit of accounting for production stocks; method of accounting for transportation and procurement costs; methods of disposal valuation; basis for distribution of transportation and procurement costs directly included in the initial cost of production stocks; frequency of determining the weighted average cost of a unit of production stocks; purpose and conditions of use of production stocks» [4, 5].

During the course of a process, it produces a certain number of primary and secondary process outputs.

The primary output is an output that signals the completion of a process and produces process results (material, information, or financial flows) that are transferred to primary consumers and

transformed using technology. For the process of inventory accounting, such primary outputs are summary documents, as well as financial, statistical, tax, and management reports. Management reports on the use of inventories may include a report on the rhythmic use of inventories; a report on the balances of inventories as of a specific date; a report on the excessive consumption of inventories by divisions, etc.

Secondary outputs usually initiate the start of other processes. The secondary output of the inventory accounting process is analytical calculations and signal information about the need to order the next batch of inventory.

It is the definition of process inputs and outputs that allows you to identify process interfaces - mechanisms (organizational, informational, technical) through which the process interacts with the previous and subsequent processes; determine the appropriate resources required to perform the process (material, financial, informational, etc.) and determine the goal of the process, which it is aimed at achieving.

**Conclusions from this study and prospects for further research in this direction.** Summing up, it should be noted that process-oriented management focuses on the interconnection of objects: «processes-people-technologies-laws». The use of this approach and the development of primary documents for the selected subprocesses will allow the enterprise to obtain information for the implementation of the concept of continuous improvement of inventory management and ensure the competitiveness of activities.

The peculiarity of organizing inventory accounting in the process-oriented management system is that it is based on user requirements, and therefore fully realizes the main purpose of accounting, which is regulated by the Law «On Accounting and Financial Reporting» [9] - providing users with complete and unbiased information about the company's activities. This information will vary depending on the types of users and their information requirements.

A detailed description of the components of the inventory accounting process and the improvement of primary documents will increase the analytical capacity of the accounting system and provide users with better information for decision-making.

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