

# Management of Working Production Assets As the Basis For the Formation of an Operational Strategy

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## Abstract

The production activities of an industrial enterprise are of great importance and are aimed at producing products based on the use of various resources and materials. Working capital management plays an important role in the operating activities of an enterprise, including the purchase of raw materials, supplies, fuel and electricity. Effective management of working capital helps improve production efficiency and ensures positive results. Working capital represents the necessary resources for the continuous operation of an enterprise, and their optimization contributes to the success of the enterprise. Thus, effective management of production activities and working capital is a key factor for the successful operation and development of industrial enterprises.

**Keywords:** production, industrial enterprise, resources, working capital, efficiency, management.

## Introduction

Production in an industrial enterprise requires the use of financial, material, information and human resources. Operating expenses of a business are often associated with material costs, which include raw materials, fuel and electricity costs. The efficiency of using these material resources significantly affects the operating results of the enterprise.

Management of an enterprise's working capital is important to its operating strategy. Working capital constitutes the resources necessary for the production of an enterprise's products, and their effective management allows one to achieve better results. They include various resources such as raw materials, materials, fuel, electricity and others that are necessary for the smooth operation of the enterprise.

Thus, the working capital of an enterprise plays an important role in its operating activities. Their effective use and management help optimize the production of products or services and bring positive results to the enterprise.

**Methods.** In order to study the issues raised in this particular article, to explore in more detail the role of staff motivation in development of small business and private enterprises, during our research we used the methods of scientific abstraction, induction and deduction, methods of observation, logical and structural analysis, grouping, mutual and comparative comparison.

**Results.** Management of an enterprise's working capital is a strategically important task aimed at optimizing the use of resources and increasing financial performance. Key aspects of working capital management include modeling optimal batch sizes, cash optimization, and planning and monitoring functions. Monitoring allows you to compare actual indicators with planned ones and make management decisions to minimize deviations. Sound management of working capital helps reduce costs and increase the competitiveness of the enterprise.

Speaking about working capital management, Yu.N. Kulakova notes that an important aspect is the definition of goals in the management system. Goals may vary depending on the life cycle of the enterprise and the conditions of its operation. However, the main goals can be considered to be maximizing net profit and profitability, increasing sales volumes of finished products, expanding market share and ensuring a stable financial condition of the enterprise. When analyzing the various goals of working capital management, two main directions can be distinguished: rationalization of the enterprise's production activities in order to achieve maximum efficiency and minimizing financial risk. Thus, working capital management should be carried out keeping these two factors in mind.

Inventory management operational strategy plays an important role in achieving business goals. When forming it, managers are faced with a choice between maximum efficiency and minimal financial risk.

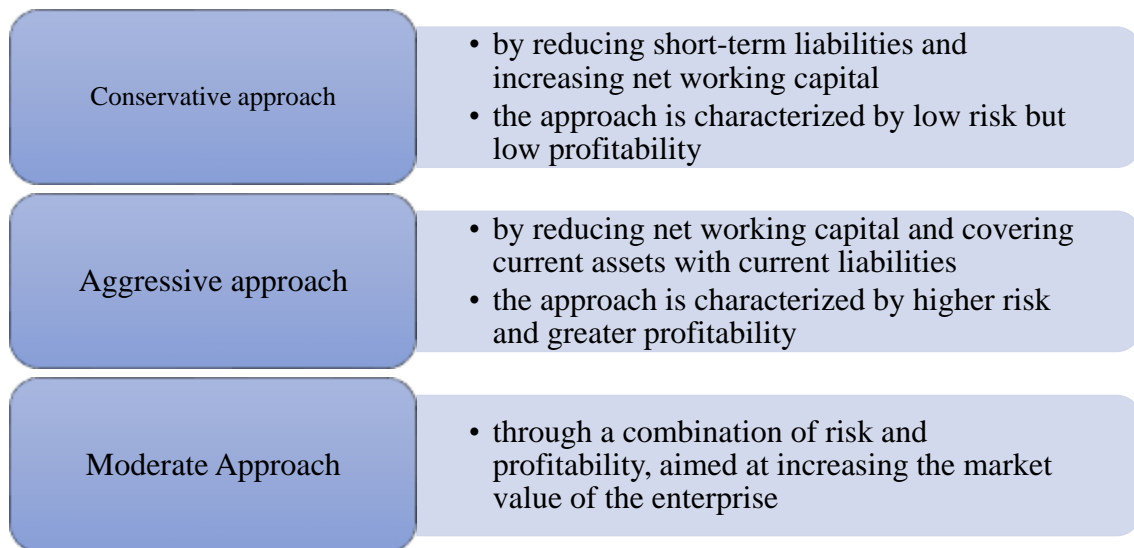
Increasing asset turnover is often achieved through the use of financial instruments with increased risk, which can lead to a decrease in the reliability and solvency of the enterprise. Therefore, to achieve a balance between efficiency and risk, it is necessary to make a compromise decision, taking into account the operating conditions of the enterprise.

Indicators of turnover and duration of turnover of working capital are important when assessing the efficiency of using working capital. The growth of these indicators indicates an increase in the efficiency of the use of working capital and the efficiency of the enterprise.

However, working capital management depends not only on turnover, but also on other factors such as production capacity, product quality, logistics system and timely fulfillment of obligations to suppliers. To fully analyze the efficiency of using working capital, it is necessary to take into account all these factors.

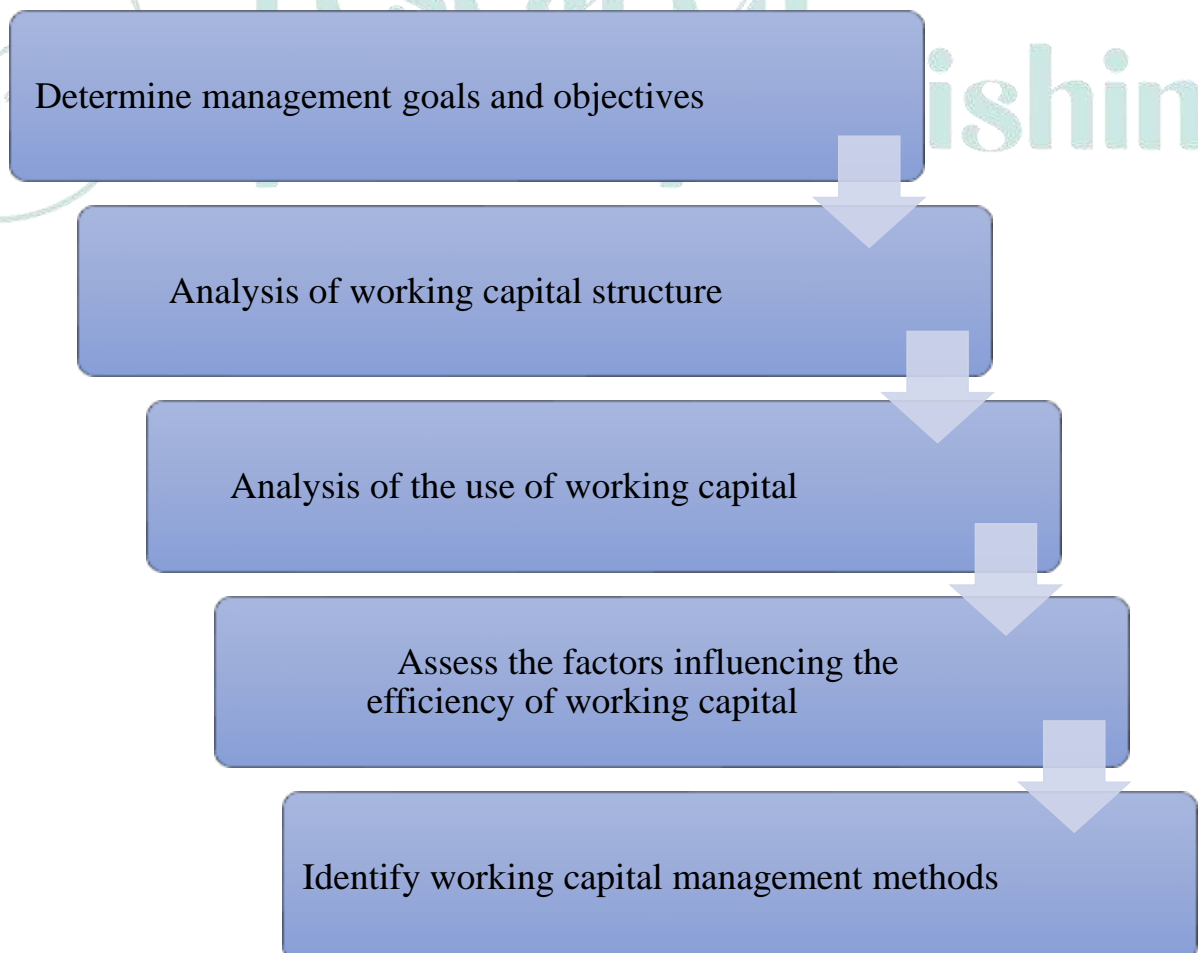
The inventory management operational strategy establishes the link between the overall enterprise strategy and the operational strategy. It defines specific tools, methods and management algorithms that are used to achieve the goals set by the main strategy.

When forming an operational strategy for inventory management, various approaches are distinguished that take into account the characteristics of the enterprise and its needs. (Fig. 1).



**Pic. 1 Approaches to the formation of an operational strategy for inventory management**

The amount of working capital, in accordance with the approaches discussed above, is determined taking into account the optimal combination of the efficiency of using working capital and financial risks in the form of loss of solvency. These approaches are based on a compromise between the risks of bankruptcy and the maximum possible profitability of the enterprise, subject to mandatory consideration of the timing and costs of attracting certain sources. In order to ensure the functioning of the enterprise, competent management of working capital is required. The working capital management model determines the efficiency of the entire enterprise.



**Pic. 2 Working capital management methodology**

An important element of the working capital management model is inventory management. The following techniques are most commonly used in inventory management.

Direct counting method. This methodology is based on the rationing of enterprise inventories by summing up the following necessary elements of inventory storage: current stock (T1), safety stock (T2), transport stock (T3), technological (T4) and unloading stock (T5).

The standard stock in days N is determined as follows:

$$H = T1+T2+T3+T4+T5 \quad (2.4)$$

For planning purposes, the standard must be defined in monetary terms:

$$F = \sum [Hi \cdot Pi / 100] \quad (2.5)$$

Where F is the need for inventories in monetary terms,

Pi – consumption of each type of inventory for 1 day

Hi – standard reserve in days.

This method is quite actively used by enterprises in such industries as industry and construction. The direct counting method is not difficult to understand and is sufficiently justified; it makes it possible to accurately calculate the enterprise's needs for different types of reserves, taking into account the enterprise's technological cycle. The disadvantages of the method include its significant labor intensity.

2. Analytical method. This method is based on the presence of average actual balances at the enterprise. Applicable if in the planned period there will be no fundamental changes in the technology and organization of the enterprise, and the share of working capital in the structure of the enterprise is quite high.

When using this method, inventory requirements are determined using the following formula:

$$Oz = Vp / Vb \quad (2.6)$$

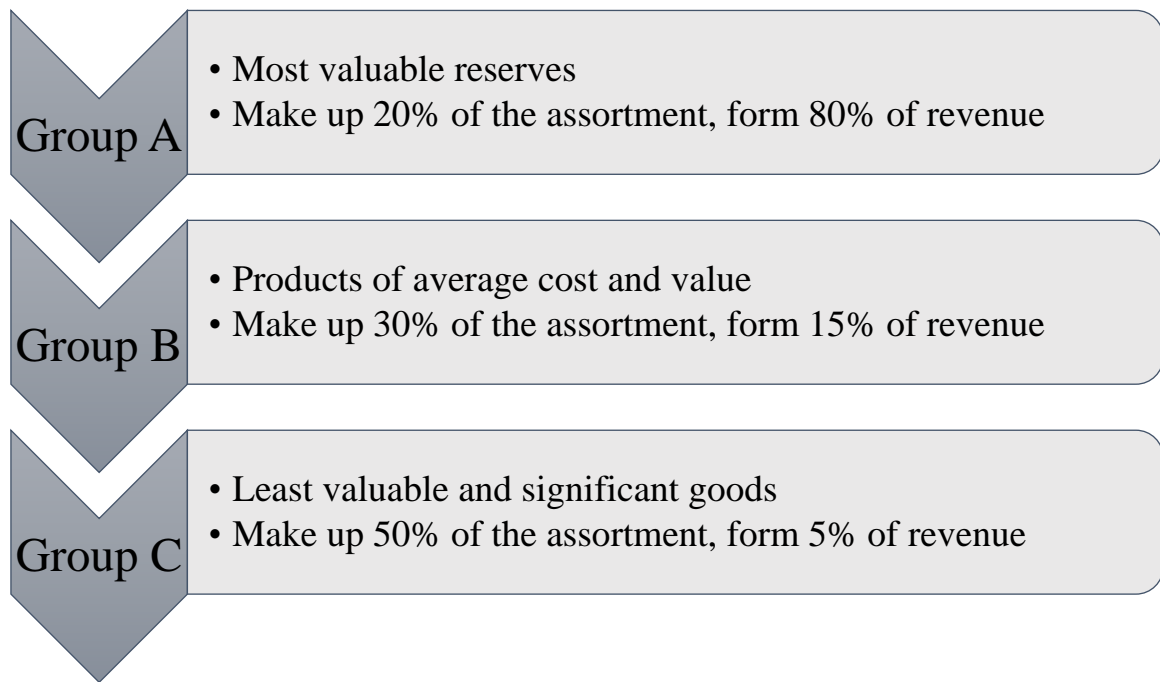
Where Oz is the planned amount of inventory

Vp – production volume in the planning period

Vb – production volume in the base period

The essence of the technique is to plan the amount of inventory in proportion to the increase or decrease in production volume. However, this method is not accurate, since it does not take into account the influence of many other factors on the amount of required reserves.

3. The ABC method is based on grouping inventories into categories, depending on their significance. Category A contains the most significant reserves, category B contains reserves of medium importance, category C contains the least significant. This method is quite simple and convenient in calculations.



**Pic. 3. Methodology for grouping inventories using the ABC method**

The disadvantage of the ABC method is the possibility of grouping inventories by only one characteristic and the lack of consideration of seasonal fluctuations in inventories.

4. EOQ model (Wilson formula). The model makes it possible to calculate the optimal volume of inventory, at which the volume of costs for ordering, delivery and storage of inventory is the minimum possible. The popularity of this model is explained by its simplicity and accuracy of calculations. However, this model also has disadvantages related to the fact that the model does not take into account possible delays in the shipment and delivery of inventories to the enterprise. The optimal stock size is calculated using the formula:

$$EOQ = \sqrt{\frac{2 \times D \times S \times C}{H}}$$

Where EOQ is the optimal inventory size;

D - required amount of inventory in a given period

S - costs of ordering and delivering inventories

C – cost of purchasing or producing a unit of inventory

H – inventory storage costs

The difficulty of using this model is also associated with the selection of incorrect initial data for calculation. The cost of purchasing and storing inventory is often overestimated, which leads to a distortion of the optimal inventory size.

5. Just-in-time method. An inventory management method in which goods are received from suppliers only when they are needed. The main goal of this method is to reduce inventory holding costs and increase inventory turnover. This model involves the purchase and delivery of only the necessary inventory, therefore, less working capital is required to finance working capital.

Despite the significant savings, this method has a number of disadvantages:

- the model depends on the timely delivery of raw materials and supplies by suppliers, which is difficult to ensure;

- in case of emergency delivery situations, production may stop due to lack of supplies.

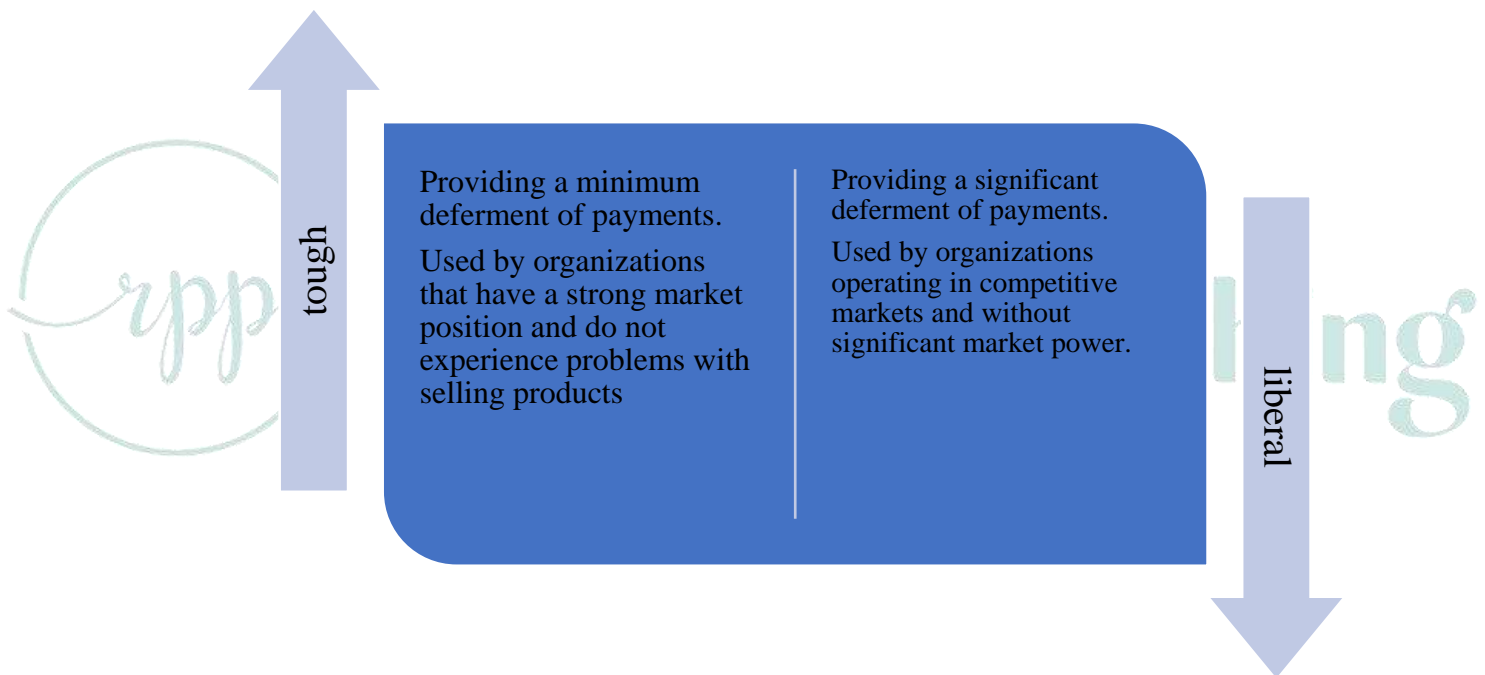
The process of working capital management when forming an operating strategy also includes managing the company's receivables. Managerial impact on accounts receivable is associated with the need to maintain its optimal size. Accounts receivable management is carried out by monitoring the timeliness of payment by counterparties, monitoring their financial condition in order to avoid shipping products to insolvent enterprises, and creating optimal conditions for the payment of debts by debtors.

An increase in the amount of accounts receivable contributes to a slight increase in the liquidity of the enterprise's assets, but negatively affects the financial result. Therefore, the goal of management is to find the optimal amount of accounts receivable, which will provide a compromise between the profitability of the enterprise and the risk of loss of solvency.

**Analyses.**

Traditionally, the most popular methods for optimizing the size of accounts receivable in the management of enterprises are: development of credit policy, cluster analysis, life cycle theory, factoring.

1. Development of a credit policy, which includes certain measures and rules for the provision of commercial loans by an organization to its counterparties. Credit policy can be of two types (Fig. 4).



**Pic. 4 Types and content of the organization’s credit policy**

Each type of credit policy has advantages and disadvantages. Advantages of a strict credit policy: minimizing the risks of non-payments or delays in payments for sold products. The disadvantages of a rigid policy include the risk of losing product buyers who are not satisfied with the lack of even a minimal deferment of payments.

The advantages of a liberal policy include its attractiveness to buyers, which contributes to an increase in product sales; the disadvantages are a high risk of non-payments and the cost of servicing accounts receivable.

Cluster analysis. The cluster analysis method consists of dividing all debtors of an enterprise into clusters depending on the timeliness of their payment. Using cluster analysis, unreliable debtors are identified. The unreliability coefficient is calculated using the formula:

$$K_n = 1000 \cdot V_u / S \quad (2.8)$$

Where  $K_n$  is the unreliability coefficient

Vu – amount of debt

S – order amount

Based on the unreliability coefficient, a cluster analysis of problematic counterparties is carried out using the merging method (tree clustering). Cluster analysis allows you to identify groups of debtors (clusters) based on the unreliability coefficient, which allows you to identify “good”, “situational” and “bad” debtors and work with them differently, optimizing the size of receivables.

3. Life cycle theory is based on the concept that the functioning of an organization can be described on the basis of life cycle theory. Knowing what stage of the life cycle the enterprise is at, it is possible to determine the optimal strategy for managing receivables. The essence of this theory is due to the fact that at the stage of formation and growth, an enterprise is looking for a market niche, looking for buyers of its products, and therefore provides them with a deferment in payment for shipped products, that is, it uses a liberal credit policy. Accordingly, the use of such a policy leads to an increase in accounts receivable.

At the maturity stage, when the enterprise reaches a stable position, the management of the enterprise switches to a strict credit policy that does not allow deferred payments, which leads to a reduction in accounts receivable. At the destruction stage, accounts receivable grow again and the company uses a strategy to sell it.

The use of the enterprise life cycle theory makes it possible to timely change the receivables management policy, preventing loss of solvency and bankruptcy.

4. Accounts receivable factoring is a financial transaction of assignment of the right to claim debt from the customer to a third party (most often a credit institution). An enterprise wishing to assign receivables to a factor bank receives funds from the bank as payment for the assignment of receivables, minus the bank's remuneration for this operation.

In accordance with the contract, the factor fulfills the obligation to recover the full amount from the debtor, and assumes all risks associated with this process.

The advantage of factoring is an increase in the speed of turnover of working capital, an increase in the share of liquid assets, a reduction in the operating cycle of the enterprise, and an increase in sales volume.

Let's consider the advantages and disadvantages of each of the considered methods of managing receivables

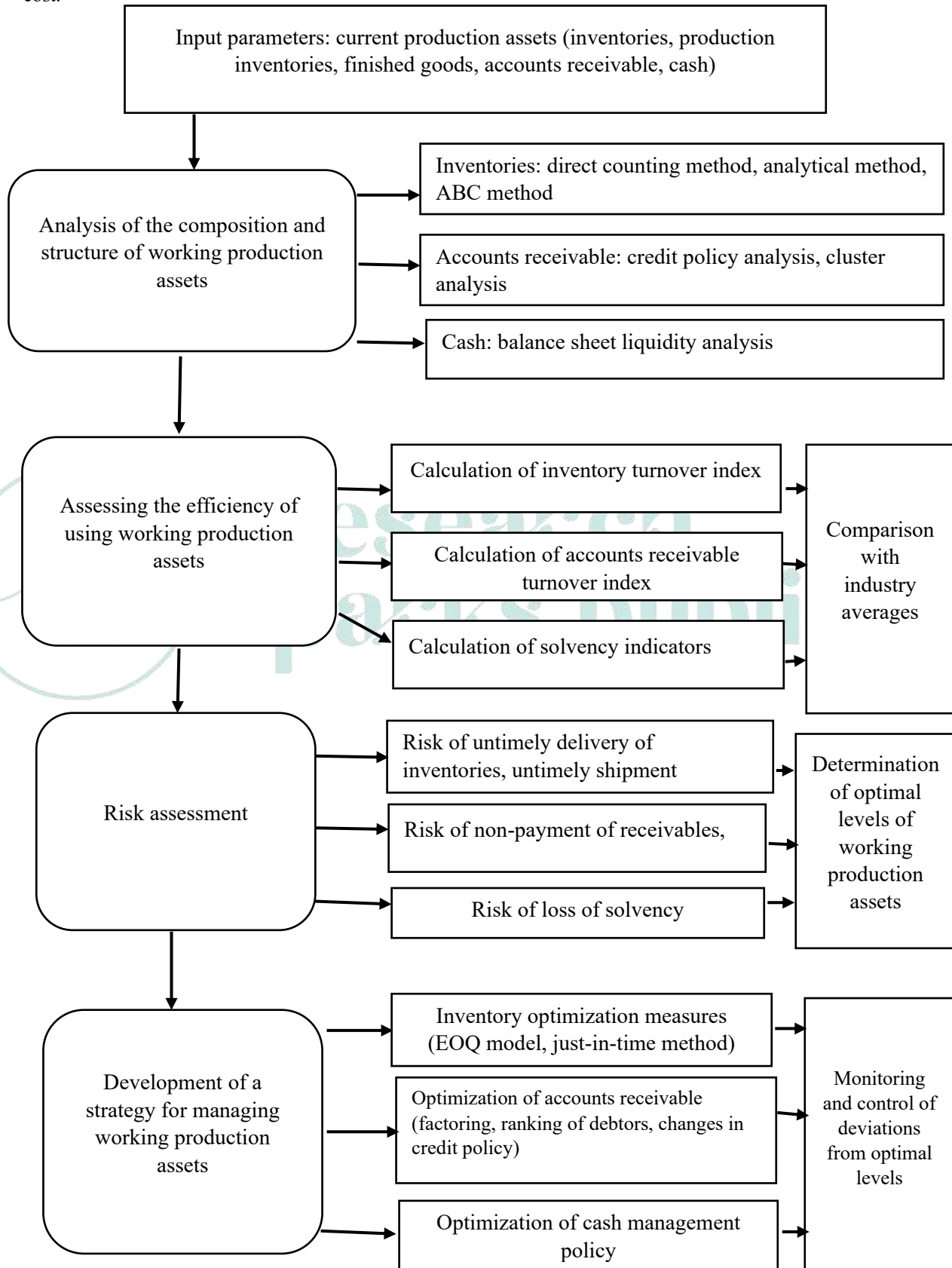
**Table 1**

**Advantages and disadvantages of accounts receivable management methods**

Method	Advantages	Flaws
Credit policy	Monitoring the status and size of receivables, their timely repayment	Risk of error when choosing a credit policy that does not reflect the characteristics of the enterprise
Cluster analysis	Distribution of debtors into groups depending on their solvency	Risk of errors in distribution, change in the solvency of debtors
Life cycle theory	The ability to choose the right credit policy, minimize crisis situations in the enterprise	Risk of incorrectly defining the stages of the enterprise life cycle
Factoring	Increasing profits and increasing asset turnover	Not always applicable due to the high cost of services of the factor bank to which claims for collection of receivables are assigned.

The choice of methods for managing accounts receivable depends on the characteristics of the enterprise's production activities, market capacity, profitability of sales, and the strategy for further development of the enterprise.

It should be taken into account that the working capital of an enterprise can be in all of the above forms during one analyzed period simultaneously, but in parallel, and not sequentially, that is, the arithmetic summation of the duration of each form is not correct. To determine the average duration of stay of working capital in various forms in the analyzed period, in our opinion, a calculation should be carried out in the form of an arithmetic average weighted value, based on the duration of stay of working capital separately for each form, taking into account the share of each element in their total cost.



**Pic. 5. Methodology for managing working production assets**



Let's consider each of the stages of the proposed methodology.

1. Analysis of the composition and structure of working production assets. The analysis includes the study of all categories of working capital assets: inventories, accounts receivable, cash. It is proposed to analyze the composition and structure of inventories using the following methods: direct counting method, analytical method, ABC method.

It is recommended to analyze the composition and structure of receivables using credit policy analysis or cluster analysis.

2. Assessing the efficiency of using working capital in the production process. Conducting an analysis of the efficiency of working production assets (calculation of the inventory turnover index and receivables, solvency and financial stability indicators) and comparing them with average values for the industry. This allows you to identify potential problems and opportunities to improve the use of working capital.

3. Assessment of risks associated with working production assets. Risks may include inventory shortages, late deliveries, non-payment of receivables, and solvency risk, which may affect the financial stability of the organization due to the organization's inability to meet its payment obligations.

4. Determination of optimal levels of working production assets. Based on the analysis and risk assessment, the optimal levels of inventories, accounts receivable and cash are determined to ensure the continuity of production and the solvency of the organization.

5. Development of a strategy for managing working production assets. Based on the calculated optimal levels, strategies are developed for the effective management of inventories, receivables and cash. The strategy may include measures to reduce inventory, improve accounts receivable management processes and optimize cash management policies.

6. Monitoring and control. The implementation of strategies for managing working capital assets must be accompanied by constant monitoring and control. This allows you to identify deviations from optimal levels and, if necessary, adjust the strategy.

The methodology for managing working capital assets, based on a detailed analysis of working capital taking into account risks and assessing the level of solvency, helps the organization optimize the use of its working capital and ensure the stability and sustainability of its financial position.

Thus, the operational strategy of an enterprise largely depends on the methods of managing the enterprise's working capital, since it is the correctness of the strategy for using fixed assets that is designed to balance the risks of loss of profitability and loss of solvency.

When managing working capital of an enterprise, the following contradiction occurs: maximum efficiency in managing current assets is achieved at the maximum level of risk and minimizing indicators of operational reliability (solvency).

Due to the need to find a compromise between efficiency and reliability in working capital management, the author reviewed several methods for inventory management and accounts receivable management, each of which has its own advantages and disadvantages. The choice of methodology should be made depending on the characteristics of the enterprise's production activities, its marketing and sales policies.

The choice of methods for managing accounts receivable depends on the characteristics of the enterprise's production activities, market capacity, profitability of sales, and the strategy for further development of the enterprise.

Due to the importance of calculating working capital, the author proposes a method for calculating the average duration of working capital in different forms, which takes into account a greater number of factors and, as a result, is more accurate than traditional methods.

**Discussion.** Summarizing the methods for developing an operational strategy for cotton-textile clusters, the following conclusions can be drawn. Light industry enterprises form the basis of textile clusters in many countries, and the efficiency of their activities is increased due to the guaranteed availability of raw materials within the cluster and due to economies of scale.

Since the textile cluster includes enterprises of different sizes, technical equipment and other parameters, the issue of developing an operational strategy for them is of paramount importance.

We have developed a methodology for developing an operational strategy, consisting of an initial assessment of data from all aspects of the enterprise's activities: analysis of production capacity, social and personnel aspects of activity, financial indicators, organization of sales and promotion. Based on the results of such a multidimensional analysis, "bottlenecks" in the management of the enterprise are identified and management decisions are made to eliminate them.

The operational strategy of an enterprise largely depends on the methods of managing the enterprise's working capital, since it is the correctness of the strategy for using fixed assets that is designed to balance the risks of loss of profitability and loss of solvency.

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