REGULATION OF TECHNOLOGICAL PROCESSES IN THE DEVELOPMENT OF A NEW ASSORTMENT IN ENTERPRISES

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Abstract*. This article discusses the problems of planning the release of a new assortment at sewing enterprises. A structural and logical model of the production planning process is presented. Recommendations for the correct selection of equipment depending on the type of planned assortment have been formed.*

Keywords*: sewing enterprises, type of assortment, assortment planning, technological process, production volume, new models, sewing machines, number of workplaces, price level.*

Introduction. In retail businesses, the development of a new assortment largely depends on marketing research. All information related to the planned assortment should be analyzed constructively, technologically, and economically. This includes analyzing the relevance and demand of the assortment, compatibility with the technological equipment in the store, and the efficiency of production.

The planning process for developing a new assortment in retail businesses typically involves three main stages:

Designing the assortment to be produced.

Organizing the production process.

Budgeting for expenses related to delivering finished products to customers or buyers.

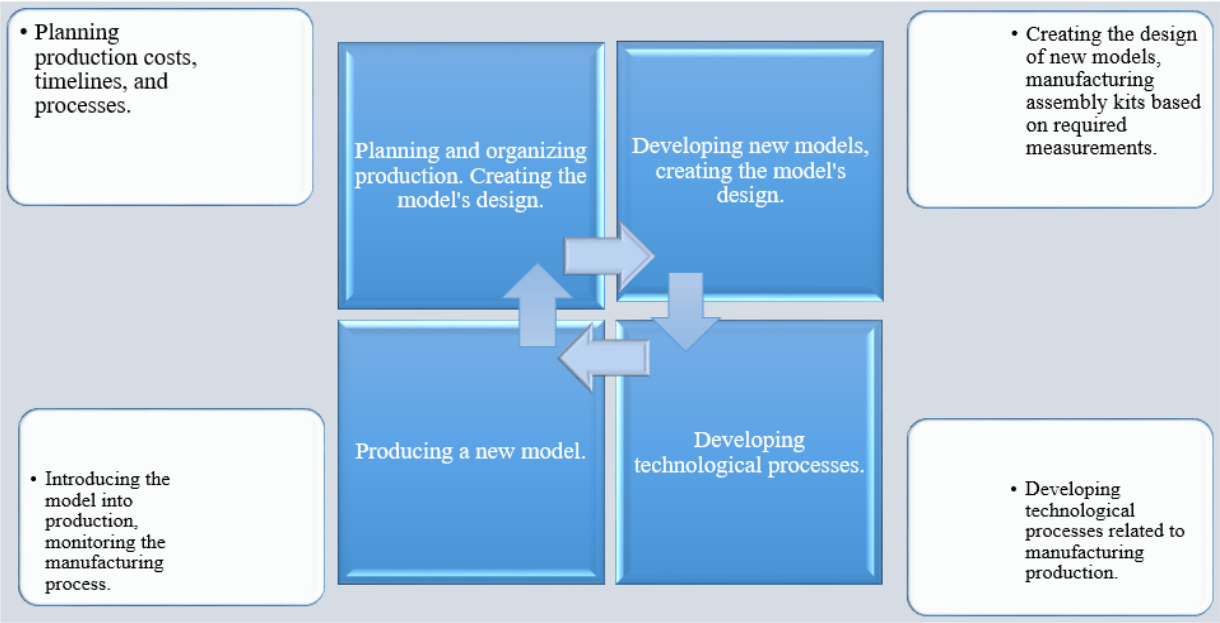
Research methods. The stage following assortment design involves organizing technological processes. Special attention must be paid to the types of garments produced during the assortment selection process, namely outerwear, garments made from knitted fabrics, garments made from synthetic materials, and specialized innerwear. The assortment needs to be clearly defined based on technological and organizational aspects. [1,2,3].

Operations performed by knitting machines differ in thickness degrees of synthetic materials processed, hence a single device cannot accommodate working with various groups of yarns. Additionally, producing various items from different assortments requires the utilization of specific machines tailored to each type. For instance, producing garments from synthetic materials or men's suits would necessitate employing at least 10 different types of specialized machines. Efficient production can be achieved in the project planning phase by minimizing the cost of production through defining the minimum number of production stages required. Ideally, the total number of workstations for assortments manufactured from synthetic materials should average between 25 to 27. (1-Image).

Results. When designing the assortment of products made from synthetic materials, it is essential to consider the unique technological characteristics of each stage of the production process. In the finishing cycle of products made from synthetic materials, the process of bonding (thermal bonding) is carried out. This process not only requires specialized high-value equipment

but also focuses on addressing issues such as energy efficiency, water supply, and waste disposal in compliance with environmental requirements.

The production process cycle



1-Image. Production process cycle in textile factories.

If the production plan in the factory includes the manufacturing of knitted products, it is necessary to consider the technological aspects of printing or embroidery on garments. Along with this, attention should be paid to issues such as the compatibility of different dyes used in printing and the ventilation system, taking into account environmental requirements [4,5,6,7].

The types of assortments also directly determine the production volume. The production volume, in turn, depends on factors such as the number of workers and the production area. Expressing the daily production volume per garment in terms of labor time can be represented as follows:

$$V=T*K*N/C \quad (1)$$

Where: V = Daily production volume;

T- Shift duration;

K- Number of workers;

N- Number of shifts;

C- Time required to produce one unit of assortment:

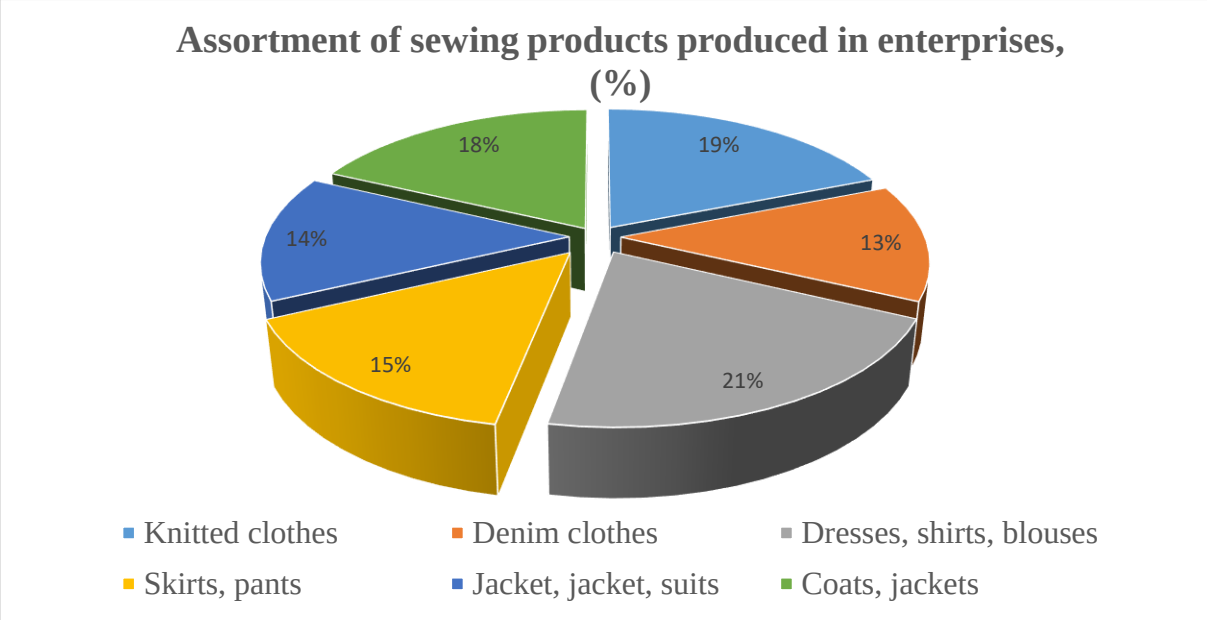
$$S=K*F*A \quad (2)$$

The production area of the factory depends on the assortment, with heavier outerwear assortments requiring more space, so the norm is correspondingly higher. The average F = 4 square meters is calculated according to the goal of taking into account the 8-hour workday. For the production of clothing items, when S = 0.5 hours and the duration of the working day is 8 hours, the daily production volume for 1 square meter of workspace is V = 4.

One of the key factors influencing the production process organization is the characteristics of the materials used. Technological equipment, namely knitting machines, is selected based on the thickness of the materials, namely thick (for heavy outerwear), medium, and thin (for lightweight fabrics). The high percentage of synthetic fibers in the structure of some new fabrics

complicates their processing. Specialized machines with mechanisms for feeding upper and lower materials are required for processing such fabrics. [8,9].

The organizational aspects of the production process also directly affect efficiency. If several types of assortment are planned for production, it is necessary to organize processes based on the types of items or to develop multi-assortment production processes. The use of technological equipment in multi-assortment production processes is more efficient. The paper analyses the enterprises producing certain assortments of clothing. (2- Image). The results of the analysis showed that the assortment of clothes produced at the enterprises is different, the share of certain types of clothes from 13 % to 21 %. These assortments of clothes are diverse in terms of fabric, technological processing. Accordingly, different types of sewing machines, semi-automatic machines for production are required. When planning the production of garments, special attention should be paid to the correct choice of equipment.



2- Image. Proportions of textile products assortments.

Conclusions. The planning of the assortment is closely related to the type of technological equipment. For example, if the planned assortment includes outerwear, then special machines equipped with a visible overlock stitch for finishing the seams of the finished products are necessary. This is because the quality of the finished product is directly determined by the level of technological processing. In the process of organizing the assortment, one company aims to obtain equipment that is sufficiently reliable and guaranteed in terms of both contractual components and warranty issues. Currently, technological equipment, namely sewing machines, mainly differ in price segment in three categories:

High-priced sewing machines: "Pfaff", "Durkopp Adler", "Juki", "Singer", "Brother".

Medium-priced sewing machines: "Global King teks", "Sun Star", "Siruba", "Tekstima", "Taking", "Minerva".

Low-priced sewing machines: "Jack", "Juita", "Baoyu", "Maqi".

Equipment for cutting fabrics and pressing devices are selected based on the type of assortment and requirements for finishing and ironing. The main factors influencing assortment planning in factories include: 1. Demand for specific assortments. 2. Fashion trends. 3.Types of

technological equipment. 4. Supply issues related to primary fabrics, auxiliary materials, and accessories. 5. Organizational aspects of production processes. 6. Production volume. [10,11].

The current volatility in fashion trends complicates the planning process for textile products. For assortment planning with high economic efficiency, it is necessary to streamline the production processes.

Developing optimal mechanisms for designing new collections, planning production, and managing issues related to customer orders and delivery logistics, starting from the sketch design stage of new collections, is essential for optimizing the process of manufacturing textile products.

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