



ANALYSIS OF THE COMPETITIVENESS OF MANUFACTURING SMALL-FORMAT PRODUCTS USING WIDE-FORMAT PRINTING IN COMPARISON WITH OTHER METHODS

Khmeliarchuk O., PhD in technics, associate professor

Bondaryna V., master, NTUU «KPI named after I. Sikorskyi» Kyiv, Ukraine

Abstract. The paper examines the reduction of the cost price of small-format products using wide-format digital printing by optimizing prepress preparation. The advantages and disadvantages of the technology under study are determined.

An important aspect is optimizing the cost of production. Reducing the resolution can help reduce the cost per unit of production. The use of prepress processing using effects allows you to reduce the cost of the finished product, while ensuring its visual appeal.

The variety of printing materials opens up new horizons for creativity, such as printing paintings and then stretching them onto a wooden frame. Applying effects during pre-press processing allows for the use of low resolution, reducing production costs.

In summary, product characteristics and design in the context of large-format digital printing in the printing house create opportunities for the production of unique and effective printed products, contributing to an innovative approach to printing. Product characteristics and design are an important aspect of printing production, in which diverse and functional products are created using large-format digital printing. This method is used to produce paper labels, labels on banner fabric and stickers on self-adhesive film.

The relevance of the chosen topic is confirmed by the results of patent search and analysis. During the study, it was found that this direction is an active area that attracts the attention of scientists and industry leaders. Monitoring modern trends in digital large-format printing made it possible to determine the advantages and disadvantages of this method. Analyzing requests from real customers, the main parameters that are determined by customers were identified. These parameters were the urgency of production, the need for a certain circulation, the cost of services, as well as the requirements for the quality of the final result.

An analysis of requests from approximately 50 companies related to large-format printing was performed. The analysis examined four main criteria that were put forward to the contractor. Each of these criteria was evaluated on a five-point scale, providing an opportunity to gain insight into the requirements and priorities of customers. According to the results of the research, it was established that the quality of the future product is in first place, the cost of its production is in second place, the circulation is in third place, and the last indicator is the timing of product production. This indicates the main priorities of customers in choosing a printing house, serves as a tool for a deeper understanding of customer requirements and optimization of production processes to more effectively meet these requirements.



To analyze the competitiveness of manufacturing small-format products using large-format printing, a comparison of technological processes was performed: large-format printing and other methods.

The analysis results highlighted the main advantages of large-format printing of small-format products.

1. Lower cost: Wide-format printing is more affordable than other printing methods, which helps reduce production costs.

2. Ability to print one product with the ability to obtain many finished products: The flexibility of this method allows for small runs and the use of one layout to create different quantities of products.

3. Greater choice of printing materials: A wide range of printing materials allows you to customize products to specific requirements and standards.

4. Ability to perform post-printing processes: Using the same post-printing processes as in other methods expands processing capabilities and improves the final appearance of the product.

5. Easier pre-printing preparation of the layout: The absence of the need for printing forms simplifies the process of preparing the layout and reduces production time.

However, certain shortcomings have also been identified.

1. Long production process for large finished products and large runs: In the case of large volumes of products and large runs, long production times may occur.

2. Difficulty reproducing "corporate colors": sometimes there can be a significant difference in color tone, which is unacceptable in accurately reproducing corporate colors and brand elements.

3. Poor quality when viewing the finished product from close range when printing low quality. With high demands on detail and reproduction of small elements, a decrease in quality at close range may be observed.

This demonstrates the flexibility of this technology, adapted to different materials and surfaces. The rapid development of digital technologies and their integration with large-format printing contribute to the creation of innovative solutions that can meet the growing needs for personalization and exclusivity and ensure lower production costs. Therefore, it is worth concluding that the production of small-format products by large-format printing is a competitive idea in the printing services market.

References

1. Khmiliarchuk, O. & Bondaryna, V. (2024). Application of wide-format printing for manufacturing non-wide-format products. *Поліграфічні, мультимедійні та web-технології*. Т.1. (с. 56-57).
2. Бондарина, В.В. (2023). Характеристика основних витратних матеріалів для широкоформатного друку. *Друкарство молоде*.
3. Бондарина, В.В. (2023). Актуальні питання вимог підготовки макетів широкоформатного друку. *Квалілогія книги*.