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Project on using the INCOMING Program to Control Product Quality in Manufacturing Enterprises

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Abstract: *This article analyzes the importance and effectiveness of the incoming program used in the process of product quality control at manufacturing enterprises . The program examines the possibilities of assessing the quality of raw materials and components, identifying defects and automating the control system. It also analyzes aspects such as improving the quality control process, reducing the human factor, and increasing production efficiency. The article also highlights the results of the use of the incoming program at manufacturing enterprises and its future development prospects.*

Keywords: *INCOMING program , Quality Control , Production release , Product Quality , Automated control , Raw material inspection , Defect detection, Efficiency improvement , Quality management , Technological control.*

ENTRANCE

“UzAuto Motors” JSC, as a leading company in the automotive industry of the CIS countries, has once again confirmed its leadership in quality and innovation. The plant recently successfully defended the BIQ IV (Built-In-Quality) quality standard certificate. In turn, this achievement demonstrates the plant's adherence to high quality standards and its desire to provide customers with the best quality products, helping to conquer new markets and further increase the share of existing ones. According to the conclusion of international experts who conducted an external audit, the Asaka Automobile Plant successfully defended the BIQ IV level with an overall result of 91.1% in implementing the requirements of the GM-GMS system, 100% in fulfilling the GMS absolute requirements and 100% in quality indicators of the enterprise. In the coming years, the UzAuto Motors enterprise has set a goal to obtain the highest quality level in the GM system, BIQ NEXT.

The audit process was conducted by international experts from General Motors International Organization on the basis of the 5 principles of the GM-GMS system over the past 4 years of improvement work. It examined the level of work carried out in coordinating the enterprise's production processes, continuous development of employees, organization of standard work processes, development of the quality system, and ensuring the continuity of the supply system.

In modern manufacturing enterprises, product quality control is one of the most important processes. Product quality plays a major role in increasing the competitiveness of the enterprise, gaining consumer trust, and ensuring the efficiency of production processes. Therefore, improving quality control systems, increasing accuracy and speed are one of the urgent issues for manufacturers. One of the most important

stages of quality control in production is the process of checking incoming materials and components. Because if poor-quality or non-compliant raw materials are received in production, this directly affects the quality of the final product. To prevent such situations and keep quality under constant control, modern management systems such as the incoming program are being introduced. This program is designed to control incoming raw materials, components, and materials at manufacturing enterprises , which serves to ensure that product quality meets requirements. Through the incoming program, quality control processes are automated, as a result, the influence of the human factor is reduced, and the results of the inspection are accurately and systematically maintained. The program allows you to record data during the acceptance of products and compare them with established standards. Also, with the help of this system, the management of the enterprise can monitor quality indicators in real time , identify defects and make quick decisions on their elimination. This allows you to increase production efficiency, reduce the number of defective products and optimize overall production costs. Currently, many manufacturing enterprises are striving to modernize their quality control systems. Because as competition in the market intensifies, customer demands are increasing. Improving the efficiency of quality control should be carried out not only with traditional inspection methods, but also with the help of modern automated programs. As a result of the introduction of the **incoming** program at manufacturing enterprises, the possibility of preventing quality problems, effectively organizing production processes and adapting to international standards for product quality will expand. Thus, the article will extensively cover the role of **the incoming** program in improving product quality , the results of its application at manufacturing enterprises and future development prospects. This program will analyze the role it plays in improving efficiency and taking production processes to a new level by automating quality control processes in enterprises .

Materials and methods Improving product quality control processes at manufacturing enterprises is one of the most pressing issues today. This study investigated the use of the incoming program at enterprises and its effectiveness. During the study, traditional methods of product quality control and control processes implemented using the incoming program were compared, and the results after the program was implemented were analyzed. Within the framework of the study, quality control processes at manufacturing enterprises were directly observed, and the results of inspections carried out using the program were recorded. Documents, reports, and technical regulations on product quality indicators were studied. Interviews were also conducted with specialists from the quality control departments of enterprises , and practical experiences and problems in using the program were analyzed. The main focus of the study was to determine what advantages the incoming program provides in the process of product quality control . The control results before and after the program were compared to compare with previous quality control systems. This comparison used data collected on the quality indicators of raw materials and components entering production . All inspections were conducted based on international and local regulatory documents (ISO, GOST, technical regulations). This made it possible to assess how quality control processes have improved as a result of using the program. The opinions of employees on the use of the program in production processes were also studied, and changes and difficulties arising as a result of the program's implementation were analyzed.

Using the statistical analysis method, it was noted that as a result of using the program, the share of defective products decreased and the efficiency of production processes increased. The results obtained served as the basis for developing proposals aimed at further improving the product quality control system. Based on all the studied data, experiments and statistical analysis, the role of the incoming program in production processes, its role in improving product quality and future development prospects were determined. The results of the study are discussed in detail in the following sections .

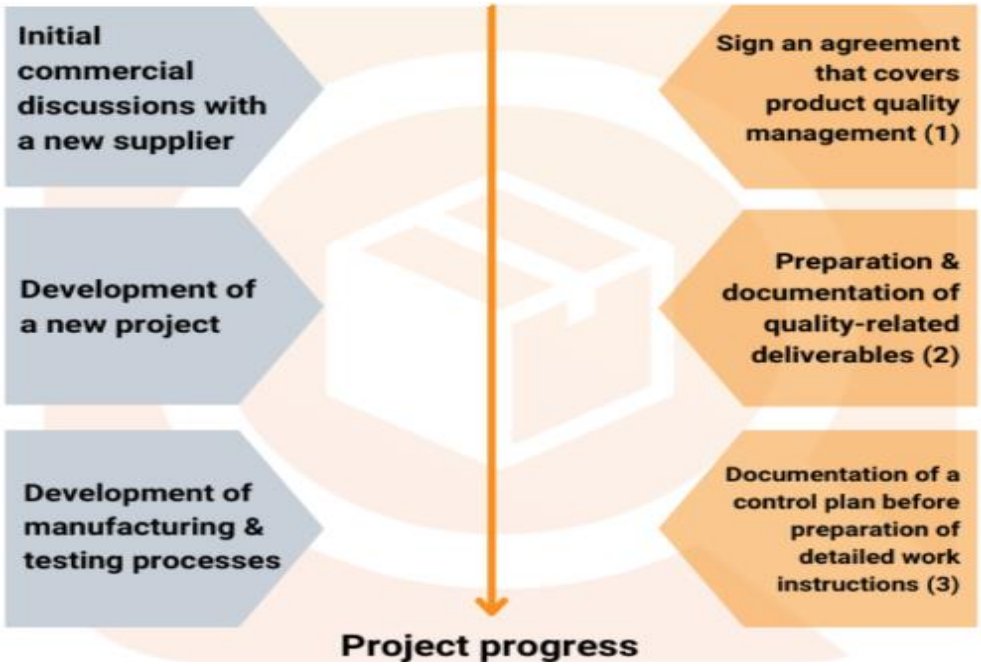

Figure 1. Stages of project development and quality control

One of the most important issues in any production process is ensuring high product quality. This directly affects not only the reputation of the enterprise in the market , but also the trust and satisfaction of consumers. The main goal of this study is to further improve and increase the efficiency of the product quality control system in manufacturing enterprises. The importance of quality control in production processes is incomparable. If product quality is not adequately assessed, poor-quality products may be delivered to the consumer, which will cause not only economic losses, but also damage the reputation of the enterprise. Therefore, it is necessary to establish strict control at the initial stage of the product, that is, when raw materials and components are accepted for production . Another important aspect of the study is to increase the accuracy of quality control processes, reduce the human factor, and make inspections more transparent. Minimizing human errors in the production process plays an important role in ensuring the stability of product quality. Therefore, during the study, advanced methods of product quality control were studied and their effectiveness was analyzed. Also, one of the important tasks is to increase the overall productivity of the production process by improving the quality control system. The production of quality products not only reduces costs, but also ensures the continuity of production and increases the economic efficiency of the enterprise. During the study, problems encountered in the quality control processes of products were identified and recommendations were developed to eliminate them. This approach is aimed at improving quality control processes, which serves to increase stability and reliability in product production . In conclusion, the main goal of the study is to make product quality control in the production process more reliable and effective, to deliver only quality products to consumers, and to continuously improve production processes.

Results and Discussion. The results showed that strict quality control in the production process directly affects the quality of the product and the overall efficiency of the enterprise. In cases where the quality of the product is carefully checked at each stage of the production process, a decrease in the number of defective products was observed. This brings economic benefits to the enterprise and creates the opportunity to use resources efficiently. One of the important aspects identified in the work process is that the quality of raw materials and components directly affects the quality of the final product . Therefore, the importance of improving the procedure for working with suppliers and establishing constant control over their products was once again confirmed. In addition, it was observed that errors due to the human factor in quality control decreased significantly. This is explained by the fact that the

inspection processes were carried out on the basis of clear criteria. It was emphasized during the discussions that control processes should be constantly improved in order to ensure the continuity of the production process, reduce low-quality products, and make the inspection system more transparent . It was also determined that the documentation of quality control results and systematic storage of data are one of the important factors. It was noted that proper documentation is of great importance for analyzing and preventing errors related to poor quality in the production process. Continuous training and improvement of the experience of qualified specialists is important to increase production efficiency and improve product quality. As the knowledge and skills of specialists increase , it has been observed that quality control processes are carried out more accurately. During the discussions, a number of proposals were made to further strengthen quality control in the future. In particular, it was noted that it is necessary to systematically review control processes, identify existing shortcomings at an early stage and find effective solutions to them. At the same time, it was proposed to introduce additional monitoring systems for quality control in the production process and make the process more transparent. From this perspective, the research results showed that improving the quality control system and its consistent implementation in the production process will increase the efficiency of the enterprise, stabilize product quality, and produce products that meet consumer requirements.

Figure 2. 5 factors influencing production management

Conclusion This study analyzed the product quality control system and its effectiveness in manufacturing enterprises. The results of the study showed that improving quality control helps to ensure the stability of the production process, increase product quality and overall efficiency. As a result of strengthening control over product quality, the proportion of defective products decreased significantly, which brought economic benefits to the enterprise. The process of assessing the quality of incoming raw materials and components based on clear criteria made it possible to prevent problems at later stages of production. At the same time, the transparent operation of the inspection system and documentation of the results helped to quickly identify and eliminate errors during the process.

The main proposals discussed during the study are as follows:

- Strengthen cooperation with suppliers and strictly define quality requirements;
- Conducting continuous monitoring of quality control and improving the system;
- Improving the skills of specialists and introducing them to new technologies;
- Properly maintain and analyze quality control documentation during the production process.

In general, effective organization of quality control is an important factor in increasing the competitiveness of the enterprise, ensuring the continuity of the production process and producing quality

products that meet the requirements of consumers. This approach ensures accuracy, reliability and efficiency in the production process, thereby contributing to the development of the enterprise.

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