

EXPERIENCE IN THE USE OF LEAN-TECHNOLOGIES IN ORGANIZING A COMPETITION AT A RESEARCH INSTITUTE

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Abstract: The experience of using lean manufacturing tools in organizing of preparations for the participation of the young scientists of research institute in competitions is considered. There are typical features of such competitions and their significance for the development of the young scientists. Particular attention is paid to the most prestigious competitions organized by the Russian Foundation for Basic Research (RFBR). The composition of the processes affecting the efficiency of work created at the research institute and the unit for working with the young scientists is determined. One of the most labor-intensive processes, the process of preparing tender documentation, is described. By analyzing the process under consideration, the losses that occur in it are identified and analyzed. It was established that the main losses are not in the substantial work on the preparation of tender documentation, but in passing it through a significant number of instances within the research institute. The process consists of approximately 50 works and takes at least 25-30 days. A number of steps are proposed aimed at reducing such losses, using the Kanban signal system and 5S system. In particular, a special electronic folder with a navigator has been created, containing all the necessary document templates.

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Created in the middle of the last century, the concept of lean manufacturing, known as the production system of Toyota Automobile Corporation, still finds today new areas of application. In addition to mechanical engineering, its tools have found their place in metallurgy and communications, transport and freight transportation, government, housing and communal services, medicine and education. Almost everywhere, the implementation of lean production is considered as a part of the general policy of involving working employees in the management of organizations. Lean manufacturing approaches are especially effective when combined with a quality management system. We need to remember the main one, as it is sometimes called the “golden” principle of lean production: “The effect becomes the maximum when it is the result of continuous improvement”. It is appropriate to remember also the words of the founder of IBM Thomas Watson Sr., who in 1914, when organizing his company, formulated three principles of its activity, one of which was the following: “It is necessary to achieve perfection in everything”.

| Main stages of the process |
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| Analysis of the information received from the announcement of the Competition |
| Distribution of responsibilities for organizing participation in the Competition among employees of the young scientists sector |
| Dissemination of information about the Competition at the research institute |
| Appointment of the coordinator of the Competition and responsible for the units on the announced topics of it |
| Development of a plan for the participation of projects of the young specialists in the Competition |
| Preparation of a meeting of the young specialists who announced their participation in the Competition |
| Formation of the commission of the Scientific Council of the research institute for the consideration of applications of the young specialists |
| Collection of applications for the young specialists to participate in the Competition |
| Consideration of applications of the young specialists for participation in the Competition by the commission of the Scientific Council of the research institute |
| Registration of applications approved by the commission and execution of documents for sending electronic applications to the Competition organizers |
| Organization of sending hard copies of applications to the organizers |
| Progress report |

Main enlarged stages of the standard process of training and participation of the young specialists in the competition

The heads of the research institute is clearly aware that when introducing lean manufacturing tools into the daily work, top managers of departments who will have to solve a number of additional organizational and administrative tasks should head the following work:

- organization of workplaces in accordance with 5S system;
- optimization of most processes in their units, with the aim of increasing the share of procedures that create value in them;
- elimination or minimization of the number of processes that do not create value, moreover, regardless of what levels of the hierarchy these processes occur;
- development of a comprehensive system of indicators for assessing the effectiveness of the quality of ongoing organizational activities.

Managers also understand that the main task is to change the mentality of employees, which is not an easy task, given the considerable age of many employees, who constitute the main scientific potential of research institutes.

Thank you for your attention!