



Directions Developing Quality Management Systems of Mechanical Engineering Enterprises

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Abstract

The article deals with the development of the quality management system in the context of changing economic policy and increasing competition. The article considers the main directions of developing integrated management systems in organizations.

Keywords: Quality system; Mechanical engineering; Integration

Introduction

In conditions of high competition and limited resources (especially financial), the issue of strategy for organizing machine-building production to reduce all types of costs and to increase its efficiency, as well as search for competitive advantages becomes relevant [1-5].

Discussion

Modern realities of the struggle for the consumer and reduction of all types of costs lead organizations to realize the need not only to create ISM, but also to expand them by introducing various subsystems.

The integrated quality management system is defined as a part of the general management system that meets the requirements of two or more standards and which functions as a whole. The introduction of such systems allows us to solve a number of tasks to optimize document flow, in particular [2-5]:

- appearing repetitive processes;

- complexity of perceiving interrelations and system element subordination;
- high labor input and resource requirements for independent implementation.

Another area of product quality assurance is the introduction of a modern quality philosophy. Among the most popular in recent years, we can distinguish lean production methods (mapping the flow of value creation; pulling line production; kanban; kaizen; 5S system; SMED system; TPM system; Just-In-Time system; visualization). However, the simultaneous implementation of all these elements may not lead to the desired result ("process paradox" - a large amount of resources spent does not lead to a significant effect).

In this regard, the issue of optimal choice of priority tools and methods for managing the quality of products becomes relevant. The two criteria with a ten-point rating scale are proposed to use: the importance of the element (1 - low, 10 - high) and the

payback period (1 – slow, 10 – fast). The final score is obtained by multiplying and is described as follows: 1-16-negligibly level of recommendation for the implementation; 17-32-low; Ranking of lean production elements.

Name of the tool	The absence of QMS	The presence of QMS	At having an integrated quality management system
Mapping the value stream	56	72	81
Pulling line production	25	64	72
Kanban	25	30	49
Kaizen	25	42	49
System 5S	64	72	90
SMED system	35	56	64
The TPM system	48	64	72
Just-In-Time System	16	45	49
Visualization	72	81	100

Conclusion

Applying this kind of ranking assessment will allow a rational approach to the question of the sequence of implementation of quality management elements and achieve a significant reduction in the payback period for implementation.

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Conflict of Interest

No conflict of interest.

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