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Concept of Lean Production Using Marginal Analysis in Conditions of Innovation Economics

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Abstract - The article develops an algorithm for optimizing the orders portfolio of iron and steel companies based on marginal profitability analysis, which allows one to reduce "overproduction losses" of rolled metal products, as well as losses for carrying out the calculations . "expectation losses", in conditions of innovation economy. The subject of the authors' study was economic relations arising at steel-making companies under lean production. Scientific papers of domestic and foreign scientists, statistical reports data and the results of approbation of the optimization algorithm of the orders portfolio at steelproducing companies have formed the theoretical and methodological basis of the study. The calculations have revealed that the proposed algorithm for optimizing iron and steel companies' orders portfolio, based on the marginal analysis, has made it possible to economically justify the necessity of lean manufacturing tools implementation for companies operating in the industry under innovation economics and to reduce losses from expectations and overproduction, which do not add value to the consumer.

Keywords - Innovations, lean production, marginal analysis

I. INTRODUCTION

Currently, the innovation vector is aimed at stimulating the development of the Russian industrial enterprises, industries and regions. Such situation can have a cumulative effect on the potential of the Russian economy, ensure the growth of competitiveness of domestic goods and services, accelerate modernization of machinery and technologies, address social problems of society.

In recent years, the state has actively implemented measures aimed at the development of the national innovation system (NIS) of Russia (Fig. 1).

A number of state development institutions activate innovative processes and infrastructure potential using public-private partnership mechanisms (eg. Agency for Strategic Initiatives, Vnesheconombank, RUSNANO, Market for Innovations and Investments of the Moscow Stock Exchange, Foundation for Infrastructure and Educational Programs, SKOLKOVO).

In addition to creation of state institutions for development, amendments aimed at reducing tax duty for

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innovation-active organizations were added to the Tax Code of the Russian Federation:

- reduction of tariffs for insurance payments;
- · improvement of depreciation policy;
- tax support for personal income tax payers.

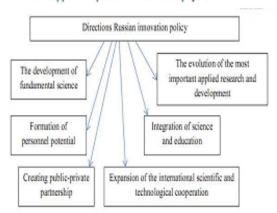


Fig. 1. Directions of the Russian innovation policy

However, it is impossible to talk about the effectiveness of measures of the innovation system of development in conditions of turbulence of external and internal environment (Fig. 2).

In such conditions of risks and uncertainties, it is difficult to predict the state of innovation activities of industrial enterprises, industries and regions of Russia.

Determining the company's financial indicators is one of the top priorities, as they reflect its financial standing and characterize impact of the economic situation in the country on the results of the steel-producing company financial and economic activities.

Functioning of large-scale steel-producing companies under market relations conditions largely depends on the wellcoordinated work of their divisions and sound financial



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