

# Model of Accounting of Formation and Updating of Value Added on Stages of Creation of an Innovative Product

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**Abstract**—Today, in conditions of unstable financial and economic business environment, there is not always sufficient normative and legal regulation to implement innovative projects. The process of development of innovative industries that promote the growth of competitiveness indicators among developers and researchers in this field determines the need to consider and assess the value added of innovative products. The paper substantiated the choice of the value-added index for in-depth study and the model development, and proved that, to a greater extent, it allows to assess the enterprise's real contribution to the formation of the product value, reflects the final results of organization's activities, taking into account the resources spent on developing and manufacturing innovative products, the influence of risk factors, as well as the state of the external and internal environment. In the framework of research in the innovation sphere, the authors identified the main stages of creating an innovative product, considering the specific economic conditions of management of Russian enterprises. In addition, they developed and characterized an accounting model of forming and updating value added by stages of creating an innovative product. It was proved that the accounting procedures for the value added index should be carried out at each stage of its formation and updating, which will allow innovative enterprises with each new project to improve the efficiency and effectiveness of financial and economic activities, as well as their own investment attractiveness for potential foreign and Russian investors.

**Keywords**—*innovation, value, value added, innovative product, model.*

## I. INTRODUCTION

In modern conditions, one of the indicators of the competitiveness of the national economy is the level of innovation development. According to the rating of the global innovation index, Russia occupied the 43rd place [1] among the countries of the world in 2016, and the 45th place in 2017 [2]. The implementation of the Strategy for Innovative Development of Russia until 2020 assumes the achievement of a number of target indicators, one of which is the growth of the share of the gross added value of the innovation sector to 17-20% [3]. Orientation towards an innovative way of economic development requires not only effective costs, but also an understanding of the formation of innovation costs in the

context of infrastructural interaction between innovation process subjects and sources of financing at the stages of product development and implementation.

## II. RELEVANCE, SCIENTIFIC SIGNIFICANCE OF THE ISSUE WITH A BRIEF REVIEW OF LITERATURE

The value-added index was chosen to assess the company's real contribution to the formation of the value of the innovation product, to reflect the final results of the organization's activities, taking into account the resources spent on its development and production. For the present, accounting of the processes of forming and updating value added has not been considered in sufficient detail; within the framework of existing studies, the specifics of innovation activity are not taken into account, which does not allow in due measure to determine the enterprise's contribution to the creation of a new product value at each stage.

Some foreign researchers consider the accounting process in relation to added value only from the point of taxation of its rate of value-added tax. O. Oldman, J. Bickley, Karen A. Smith believe that accounting procedures for the value-added index are necessary for calculating the taxable base for VAT, and the state is more interested in their implementation [4, 5, 6].

B. Jørgensen, M. Messner, S. Sisaye, D.Y. Chan, M.A. Vasarhely consider the need and relevance of accounting for value added by innovative enterprises. In their opinion, the accounting system should contain full and systematized information on the amount of costs from the moment of the idea of product manufacture and to its commercialization [7, 8, 9].

Scientists, representatives of the scientific school, Doctor of Economics, Professor L.V. Popova (I.A. Maslova, B.G. Maslov, I.A. Korostelkina, M.V. Vasileva, E.L. Malkina, E.G. Dedkova, M.S. Alimova, S.V. Romanchin), Gurkova I. pay special attention to the calculation and accounting of the value added, the need to assess the impact on it external (strengthening the integration of accounting processes, the need to increase the competitiveness of domestic innovation enterprises in the world innovation market) and internal (non-linear organizational and managerial structure of innovative

enterprises, rice and the likelihood of not bringing the innovation product to the stage of commercialization, etc.) factors [10-14, 16-17, 19].

Rura O.V., Ogilba A.V., Rozhkova N.K., Kuryleva M.N., Marenkov N.L. consider the issue of determining the value of innovative products as a result of the lack of regulatory framework of the methodology for calculating the indicator in the innovation sphere. At the same time, they emphasize the need to develop methods for estimating and accounting cost and costing indicators by stages of creating innovative products [15, 18, 20].

Thus, for the purpose of developing innovative business in Russia, it is necessary to develop an accounting model of forming and updating the value-added of an innovative product that takes into account the element-by-element composition of this indicator, as well as the staging of its development and implementation.

### III. STATEMENT OF THE PROBLEM

The main objective of the study is to develop a accounting model of forming and updating the value added by stages of creating an innovative product for implementing priority tasks of the state development: stimulation of innovative production, and subsequent implementation of monitoring and oversight functions on the reflection of all aspects of production and management processes in the accounting system.

### IV. THEORETICAL PART

The key moment for constructing a model of the accounting process in relation to the value-added index created and updated by the innovation enterprise was the fundamental principles of the formation and functioning of a single accounting space, as well as the procedure for creating and moving value flows in the innovative sphere of product manufacture by the stages of their creation.

The accounting process is impossible without a reliable, informative and promptly generated information base for the purposes of making management decisions, as a set of accounting documents and registers that make it possible to minimize uncertainty in the development, actual implementation and subsequent commercialization of innovative projects (Figure 1). Within the framework of the proposed accounting model, it is assumed to use the management reports system, in particular the value added report, which includes detailed information on elements of value added, its structure, and dynamics.

### V. PRACTICAL SIGNIFICANCE

The application of the proposed model of value added of innovative products will allow enterprises to track every transaction for its formation, commercialization and upgrade in

a timely and promptly manner, which is especially important in case of high risks of inefficiency of the introduced innovation, lack of demand on the domestic and innovation market, as well as the need to make operative management decisions in relation to innovative projects. The calculation of value added of the innovative project by stages of its creation and implementation was carried out on the basis of the presented model; the results of the element-by-element analysis for a five-year period are presented in Table 1.

TABLE I. ELEMENT-BY-ELEMENT ANALYSIS OF THE ADDED VALUE OF AN INNOVATIVE PRODUCT

Value added element	2 <sup>nd</sup> year, million rubles	3 <sup>rd</sup> year, million rubles	4 <sup>th</sup> year, million rubles	5 <sup>th</sup> year, million rubles
Value added, total	47.7	68.93	70.2	73.8
Wage	11.61	13.23	13.23	13.23
Insurance premiums	3.51	3.96	3.96	3.96
Depreciation	5.13	5.13	5.13	5.13
Other expenses	8.1	9.9	9.9	11.25
Taxes chargeable on costs	1.44	0.81	0.81	0.63
Profit	17.91	35.9	37.17	39.6

### VI. CONCLUSION

Thus, value added accounting by stages of product creation will make it possible to plan and monitor the main financial and economic indicators of activities and responsibility centers of the organization. From the state's perspective, with the help of the accounting model of forming and updating value added by stages of product creation, it is possible to assess the level of innovative development of an economic subject by not only determining the share of innovative products in total sales, but also calculating the share of value added of innovative products in the total amount of the created value.

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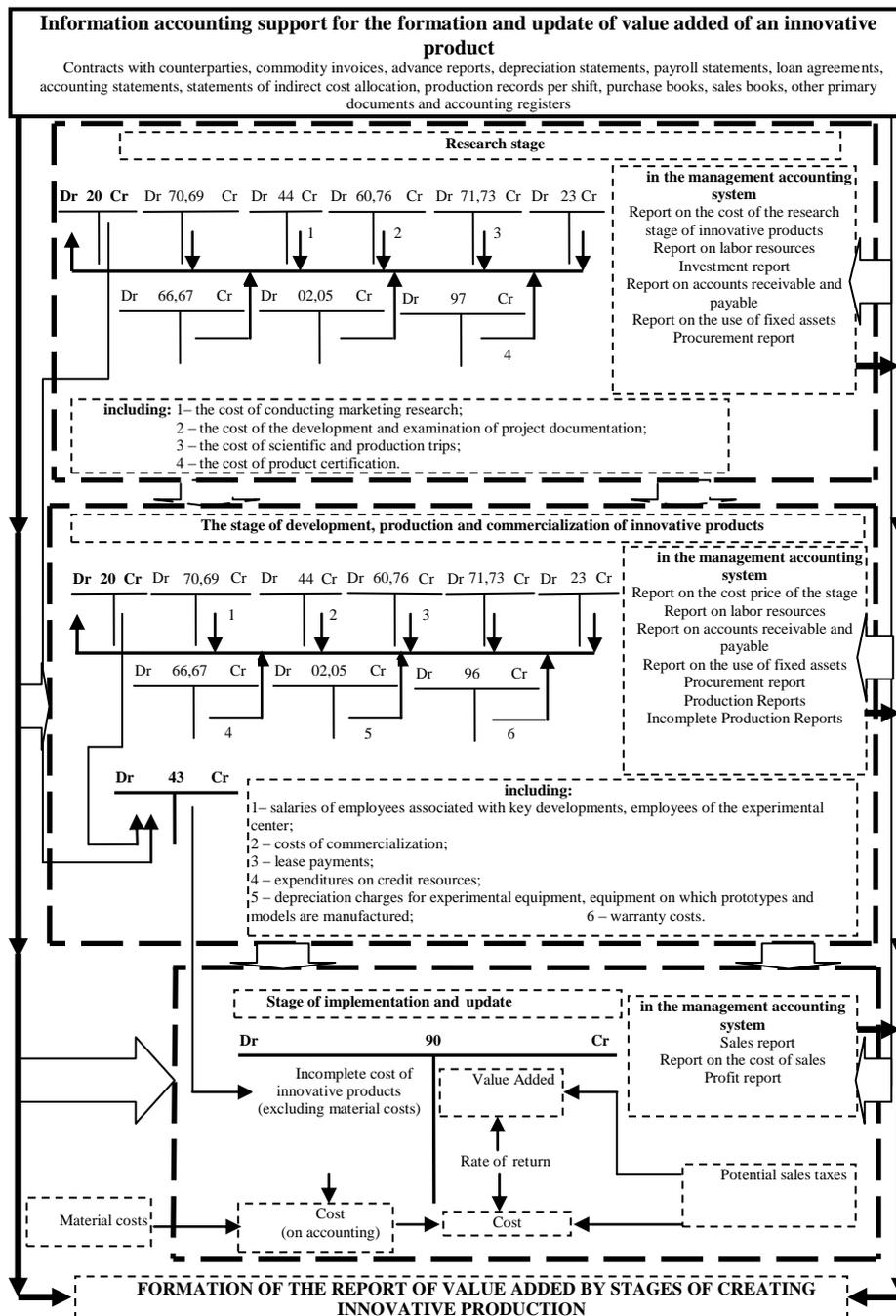


Fig. 1. The accounting model of forming and updating value added by stages of creating an innovative product.

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