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## The Formation Of The Enterprise Intangible Assets Is The Basis To Develop Competitive Regional Agricultural Machinery

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### ABSTRACT

The share of new knowledge in developed countries ranges from 70 to 85% of the gross domestic product. The characteristic feature of competitive organizations are significant costs to create intangible assets (IA) patents, know-how, licenses, etc. In 2017 in the Rostov region, Krasnodar and Stavropol region produced more than 30 million tons of grain. The special climatic conditions of these areas require the design and operation of agricultural machinery that meets the climatic conditions of these regions. Currently, in the Stavropol region agricultural machinery produce more than ten enterprises. The absence of intangible assets from these manufacturers of agricultural machinery is not conducive to competitiveness and business efficiency. One of the main reasons for the low involvement of knowledge in the creation and manufacture of machinery is the lack of development of economic relations in sphere of creation and implementation of the results of intellectual activity in production, lack of effective economic mechanisms stimulating this area. It is proposed to solve the problem in the region systematically. The contemporary experience of Russia shows that the cost of creating new innovative products, as defined under the cost method, as a rule, does not coincide with the value determined via the income approach. This is the cause of coagulation of programs to develop innovative products even in the priority sectors of the economy. To resolve this contradiction, it is proposed the difference values to compensate for the expense of subsidies from the regional budget. With this approach, the business through innovative products should return subsidies in the form of taxes to the budget. Leaders of both large and medium and small business are encouraged to obtain the necessary expertise in the field of formation of intangible assets of the organization as the main ways of increase of competitiveness of products and successful business.

**Keywords:** intangible assets, agricultural machinery, machine-building, innovation, competitiveness, economics, business

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## INTRODUCTION

Modern competitive producers of agricultural machinery manufacture products on the basis of the latest technologies, which are made using intangible assets (IAS) namely, patents for inventions, know-how, licenses, etc. Therefore, a characteristic feature of the competitive organizations is the considerable costs to make IAS, and the strategy to develop enterprises in a real sector of the economy should provide for making and production of new machines based on advanced technologies and developments, for which companies should take an active part in financing of scientific-research and preproduction work (SRPW) in order to make new demanded properties of products that ensure the competitiveness of goods on the market, or to acquire patents and licenses for competitive technologies on the market. The latter cost hundreds of thousands and more of US dollars. There are multimillion-dollar intangible assets in the balance-sheet of the world's largest companies. 80% of the increase in gross domestic product (GDP) is fallen at the share of new knowledge in developed economies [1-4].

In Russia, the share of new knowledge in GDP is about 12-15%[5]. The insignificant use of IA in real production is confirmed by the data from the evaluating market. Thus, valuation of intangible assets and intellectual property on the market is less than 2% [6, 7].

Under the current economic conditions of Russia, the possibility of output of competitive goods will be available for enterprises where the share of IA will be 30% or more[8].

Among the regions of the Russian Federation, the Krasnodar Territory, the Rostov Region and the Stavropol Territory grow considerable volumes of agricultural products. Thus in 2017, they grew more than 30 million tons of grain. The special climatic conditions of these territories require engineering, production and operation of agricultural machines that take into account the special features of natural conditions.

## MATERIALS AND METHODS

At present, agricultural engineering enterprises, both in Russia and abroad, produce and offer agricultural producers a wide range of machines. Producers of agricultural production buy a considerable quantity of imported agricultural machinery, which does not always fully meet the regional production requirements. For the south of Russia, the production of agricultural machinery and equipment that meet regional agro technical requirements is of economic importance as doing business.

As an object of study, the agricultural machinery enterprises of the Stavropol Territory were chosen.

## RESULTS AND DISCUSSION

Currently, more than ten enterprises produce agricultural machinery in the Stavropol Territory. The organizations produce dozens of agricultural machinery brands, at the same time using not the most modern technologies. The machine designs are more reminiscent of Soviet products. However, such enterprises as OJSC RTP "Petrovskoe", OJSC "Svetlogradagromash", Georgievsky Repair and Engineering Works and others develop new machine models on their own. It is impossible to develop fundamentally new machine designs for this category of enterprises, since they do not have the appropriate units for this purpose, and there are no intellectual products along the line of cooperation with research institutes and universities[9, 10].

The deficit of the qualified agricultural machinery designers does not contribute to raising the technical level of products, because of the socioeconomic situation in the country during the last ten years; the priority of the younger generation was humanitarian education (economists, lawyers, etc.).

As it is, it is difficult to be competitive on a market for agricultural machinery manufacturers and, as a result, economically efficient structures.

All this confirms the actuality of the IA problem in a real sector of the economy and does not contribute to the competitiveness of products and the effectiveness of business [11].

One of the main reasons for low involvement of knowledge in production of machines is also the lack

of a real market of IA, the lack of development of economic relations in the sphere of creation and introduction of results of intellectual activity in production and the absence of effective economic mechanisms that stimulate this direction both from private business and the state. Unfortunately, many managers of enterprises do not have a qualified understanding of IA importance, as the basis for competitive products and attractiveness for investors.

The Stavropol Territory has potentially sufficient resources to develop regional agricultural machinery. These are universities, research institutes and creatively active population. The Stavropol Territory takes the 18th place among the regions of the Russian Federation according to "The educational resource of the population" [4, 12].

Earlier in order to support the enterprises of regional agricultural machine building in the Stavropol Territory, a program was implemented to provide subsidies to agricultural producers in the amount of 20% of the value of agricultural machinery produced by the enterprises located on the Stavropol Territory. This program stimulated the purchase of agricultural machines of regional agricultural machinery through subsidies, but did not stimulate an increase in the technical level of these machines and the development of new ones on the basis of modern objects of intellectual property (OIP).

The difficulties of making new agricultural machines are caused by the lack of sufficient financial resources from manufacturers, and credit resources are quite expensive. In this case, the classical market approach does not contribute to making new machines, since the cost of the product, determined by cost, in most cases is greater than the cost of the product, determined by the future income from it. The latter does not take into account future returns to the budget and socio-economic indicators of the territory development. In this regard, it is proposed to provide subsidies from the regional budget for the development of new models of agricultural machinery within the difference in cost determined by hang-the expense and income approaches for the enterprises of regional agricultural machinery manufacturers located in the Stavropol Territory. The effectiveness of the allocated budget funds from the regional budget should be assessed on the basis of tax and other budget returns, determined by the dynamic method for the entire period of the output of the manufactured agricultural machine. In this case, one should also use such an indicator as the effectiveness of budgetary funds [13, 14].

The OIP cost, with the use of which a new agricultural machine was made, is determined by the hang-the expense approach as the total expenses necessary to make a new machine.

The income approach to assess intellectual property is based on determining the economic efficiency from the use of new intellectual property objects pledged in a new machine.

In the context of the issue under consideration, the method of exemption from royalty of the income approach is applied to determine the value of intellectual property objects. The essence of this method lies in the fact that an object of intellectual value does not belong to its owner, but is provided to an agreed owner on a licensed basis by a third party [15, 16].

The choice of approach and method can also be determined according to Table 1.

**Table 1: Recommended approaches to the assessment of IA and OIP**

Types of IA and OIP	In the first place	In the second place	The last line
Patents and technologies	Profitable	Comparative (marketable)	Expensive
Trade marks	Profitable	Comparative (marketable)	Expensive
Copy right objects	Profitable	Comparative (marketable)	Expensive
Management info ware	Expensive	Comparative (marketable)	Expensive
Software	Profitable	Comparative (marketable)	Expensive

Payments periodically paid to the owners for the right to use the object of intellectual property are represented in the form of "royalty". The experience shows that in most cases, royalty is determined from the proceeds of the sale of a new machine manufactured when used OIP [2].

The size of royalty rates is determined by Table 2 on the basis of practices and mainly depends on the intellectual and technical level of OIP.

**Table 2: Dependence of royalty rates on the level of creative result**

Meaning	Revolutionary level		Main improvement		Incidental advantage	
	range	average	range	average	range	average
Average royalty value	7...13%	10%	4...8%	6%	2...5%	3,5%
Median royalty value	5...10%	7,5%	3...7%	5%	1...4%	2,5%

The general trend of the royalty magnitude shows an increase in its size from an increase in the intellectual level of OIC. At the same time, net flows of funds are determined by taking into account the level of inflation by years.

The proposed approach to stimulate agricultural machinery manufacturers is aimed at developing and producing competitive equipment, rather than to stimulate agricultural producers to purchase agricultural machinery produced by the region, being not of the highest quality.

In the Stavropol Territory, the enterprises that manufacture agricultural machines are classified as small and medium-sized enterprises. Therefore, their support in the production of new machines can be realized through regional funds supporting entrepreneurship, which are formed from budgets of various levels.

In order to stimulate to produce innovative products, the difference in the values determined by the method of creation of value and the method of exemption from royalty was proposed above to compensate by subsidies, for example, of the regional budget. The condition described has the following form (1)

$$V_{OIPcr} - V_{OIPR} = \pm \Delta V, \tag{1}$$

if  $\Delta V > 0$ , то  $\Delta V = V_{fin}$ ;

$$\sum_{m=1}^{m=j} \frac{\Delta T_{add}}{i_d} \geq V_{fin};$$

if  $\Delta V \leq 0$ , то  $V_{fin} = 0$ ,

where  $V_{OIPcr}$  – OIP value, determined by hang-the expense approach by the method of creation of value, rub.;

$V_{OIPR}$  – OIP value, determined by income approach by the method of exemption from royalty, rub.;

$V_{fin}$  – financing to made an innovative product, rub.;

$\Delta T_{add}$  – additional tax proceeds to the budget, rub.;

$i_d$  – discount rate.

The method of creation of value is used to determine a minimum price of an object of intellectual property (OIP), below which a transaction for an owner of the OIP becomes unprofitable.

The value of OIP creation is the sum of the actual expenses associated with the creation, acquisition and implementation of it and can be determined by the formula (2)

$$E_S = \sum_{i=1}^{i=t} \left[ (E_d + E_{lp})_i \cdot \left( 1 + \frac{P}{100} \right) \cdot k_{pv} \right], \tag{2}$$

where  $E_S$  – the sum of all expenses associated with the creation and protection of an intangible asset, rub.;

$E_d$  – value of developing an intangible asset, rub.;

$E_{lp}$  – expenses for legal protection of an object, rub.;

$P$  – profitability, %;

$k_{pv}$  – present value interest factor by means of which the nonsimultaneous expenses are brought to a

single point in time (that is, the expenses are adjusted for the value of the price index at the valuation date);  
 $i$  – serial number of the year in question.

The license cost on the method of exemption from royalty is determined by the formula (3)

$$P_n = \sum_{i=1}^{i=t} V_i \cdot R_{pi} \cdot Z_i \cdot i_d, \quad (3)$$

where  $V_i$  – volume of the determined output under license in the  $i$ -th year (pcs, kg, m3);  
 $Z_i$  – selling price of a product unit under license in the  $i$ -th year (monetary unit);  
 $R_{pi}$  – amount of royalty in the  $i$ -th year (in %);  
 $t$  – period of validity of the license agreement (year);  
 $i$  – serial number of the year of the validity of the license agreement;  
 $i_d$  – discount rate

As a rate of discount factor, some authors offer using:

- rate on deposits;
- rate on credits;
- refunding rate;
- weighted average cost of financial instruments;
- weighted average cost of a firm's capital, etc.

Using any of the discount rates, one should remember the effect of inflation and "clean" the nominal rates by formula (4)

$$i_d = \frac{(1+i)}{(1+p)} - 1, \quad (4)$$

where  $i$  – nominal rate;  
 $p$  – increase in prices.

The proposed economic mechanism will allow developing innovative entrepreneurship in the field of making and production of agricultural machinery by the organizations of the Stavropol Territory [11].

The events are traditionally held in the Stavropol Territory, such as the "Week of Innovations", the annual International Scientific and Practical Conference within the framework of the International Agro-Industrial Exhibition "Agrouniversal", where individual businessmen offer scientists and inventors jointly on a paid basis to solve narrow technological places with the purpose to increase business efficiency. It is desirable that there are more such reports, and conferences are held with a broader representation of scientists, inventors and businesses to create relations between stakeholders [12].

## CONCLUSIONS

1. To increase the competitiveness of making and production of machines for agriculture, it is suggested that heads of large, medium and small businesses receive the necessary competencies in the field of formation and use of the organization's intangible assets. At the regional universities, special attention should be paid to study OIP formation in the structure of non-current assets of enterprises, especially for technological areas, as the latter are the creators of innovations for real economy, and among young people to carry out work to popularize a competitive business based on the creation and use of new knowledge.
2. To achieve sustainable business success, commercial organizations should also have an effective management accounting service to implement one of the main principles of management accounting - the process of creating value, and to determine how effectively the business model works with the use of OIP, to identify individually the benefits to the business by an identified OIP.
3. Legislative authorities of the region should assume the measures to stimulate investments in

intangible assets. In this regard, the state and the government should support the regional economies to create new technologies and competitive products by stimulating the creation and effective use of intangible assets in production, by financing and developing significant tax benefits.

Realization of these directions will allow creating competitive regional agricultural machines.

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