

INTELLECTUAL POTENTIAL OF A COMPANY AND ITS EVALUATION

INTELLECTUAL POTENTIAL OF A COMPANY, AS GENERALIZATION INDEX OF THE VALUE OF INTELLECTUAL CAPITAL. According to E. Brooking¹, essential method of approach towards evaluation of immaterial assets and a business reputation doesn't reflect reality of modern economy. Herewith it discusses the enterprise in the form of totality of two components – material assets of the enterprise and intellectual capital, which makes it possible to use following formula for evaluation of the cost of intellectual capital:

$$J = P_{co} - C_m \quad (1)$$

J – Cost of intellectual capital;

P_{co} – market price of every share of a Company;

C_m – Cost of material assets of a company.

In such case cost of intellectual capital includes share of immaterial assets, which are objects of property right (ownership rights on lands, natural resources and so on). This latest is purchased by a company upon its creation and in the process of increasing material assets.

Another defect of intellectual capital of a company is practically complete association of intellectual capital and immaterial assets of an enterprise, herewith evaluation of human capital and marketing assets is not provided.

Upon such evaluation of intellectual capital we may use the concept: "Intellectual potential of a company" (J_n), which foresees all three components of intellectual capital:

$$I_n = Q_c (P_{ip} + P_{ma}) \quad (2)$$

P_{ip} – market cost of intellectual property of a company;

P_{ma} – market cost of marketing assets of a company;

Q_c – ratio of the quality of human capital defining ability of an enterprise in effective usage and enriching its intellectual capital.

Formula (2) includes all three components, indexes of an enterprise, three of which are to be assessed in accounting instruments:

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P_{ip} – Cost of intellectual property, as part of immaterial assets;

P_{ma} – expenditures made for creation of business image of a company;

Q_c – Ratio of the quality of staff capital, which defines ability of an enterprise in effective usage and enriching its intellectual capital.

Formula (2) foresees all three components, indicators of intellectual capital, two indicators out of which are evaluated in accounting documents: P_{ip} – value of intellectual property, as part of immaterial assets; P_{ma} – expenditures, made on creation of business image of the company.

We may touch upon accounting evaluation of these indicators critically. To our mind, they do not consider cost of Know-how in them. Expenditures for maintenance of connections with national innovative system and those made with foreign companies due to growth of customers' base (advertisement, trademark and so on), but assessment of these expenditures take place in the accounting practice of modern organization.

Ration of the quality of human capital may be defined with following formula:

$$Q_c = \frac{P_{co} - (C_{co} - \Delta P_{co})}{P_{ip} + P_{ma}} \quad (3)$$

Where P_{co} is the sum of market cost of every share of the company;

C_{co} – cost of material assets of a company;

ΔP_{co} – market price of the share of material assets, which form property rights (right on using plot, resources and others).

In the denominator of the Formula (3) there is market price of the cost of intellectual potential given, as cost of immaterial assets is deducted out of market price of whole property of the company, except cost of immaterial assets, cost of every property, which consists only of P_{ip} and P_{ma} .

¹ Brooking Enny. Intellectual Capital. SPB: Piter. pg. 17 (in Russian).

By using Formula (3) we may define the value of Q_c for evaluation of the quality of human assets. If $Q_c > 1$ means that trust of the market towards abilities of the company under the conditions of increasing and intellectual capital and incomes is quite high; and the higher index of Q_c , is the more trust is towards the staff of specialists of the given company. If $Q_c < 1$, this means that trust of the market towards whole products manufactured by the company is decreased and the market doesn't hope success of the company in the future.

The Formulas (2) and (3) makes it possible to renew composition of the intellectual capital and influenced upon the process of its increasing and manage intellectual-innovative activities of the company.

Intellectual potential J_u , as said above, is being increased in the process of innovative-intellectual activities of the company. Dynamics of increasing J_u may be represented graphically in the following way (Fig. 4).

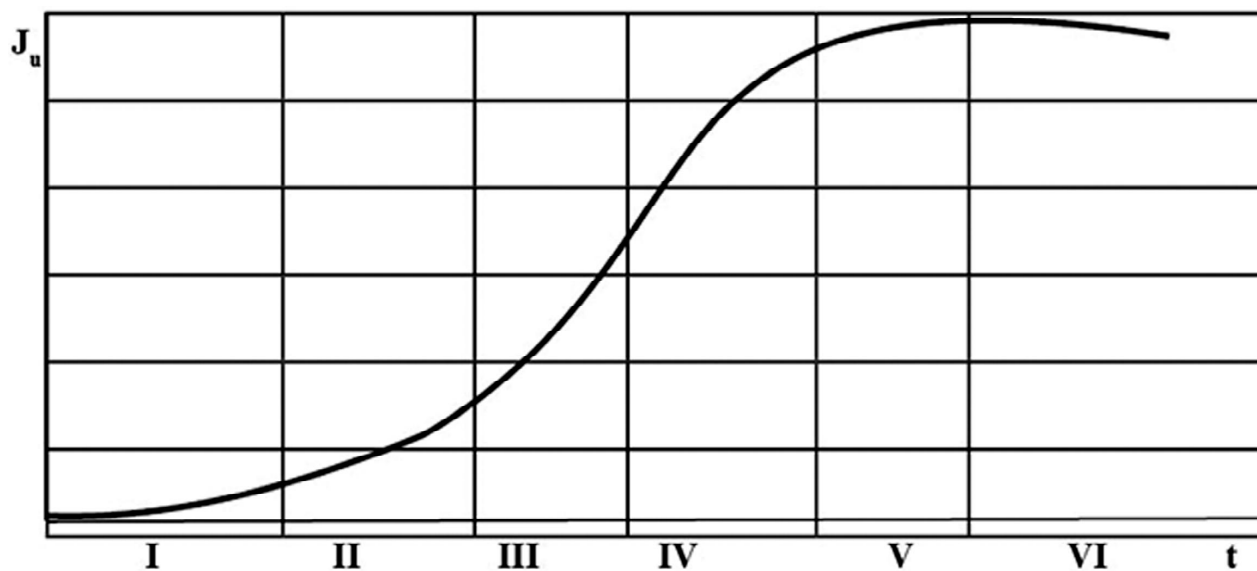


FIG. 1. NATURE OF CHANGING INTELLECTUAL POTENTIAL OF THE COMPANY (J_u) IN THE PROCESS OF ONE CYCLE OF INNOVATIVE ACTIVITIES.

Significant growth of intellectual potential J_u of the company is provided at the initial stage of intellectual and innovative activities. Process of growth is slowed in the future. Importance of J_u is stabilized, and at the last stage, when production and sales may be fallen, at the expense of partial loss, reduction of production and reduction of incomes, and together with the reduction of trust, index of Q_c is reduced as well.

Intellectual potential is mostly increased at the expense of new objects of intellectual property upon creative process. At the first stage of innovative activities in the process of providing scientific-research activities and experimental construction processing objects of copyright are created, as well as the objects of industrial property and know-how. Besides this, experience is accumulated in organization scientific-research works and experimental-construction processing, realization of innovative activities, and schemes of technological transfers in the issue of creating innovative products are processed as well. All these are left in the company. as an intellectual asset, stored in the processed form and is deemed to be confidential technical, commercial and administrative document (know-how).

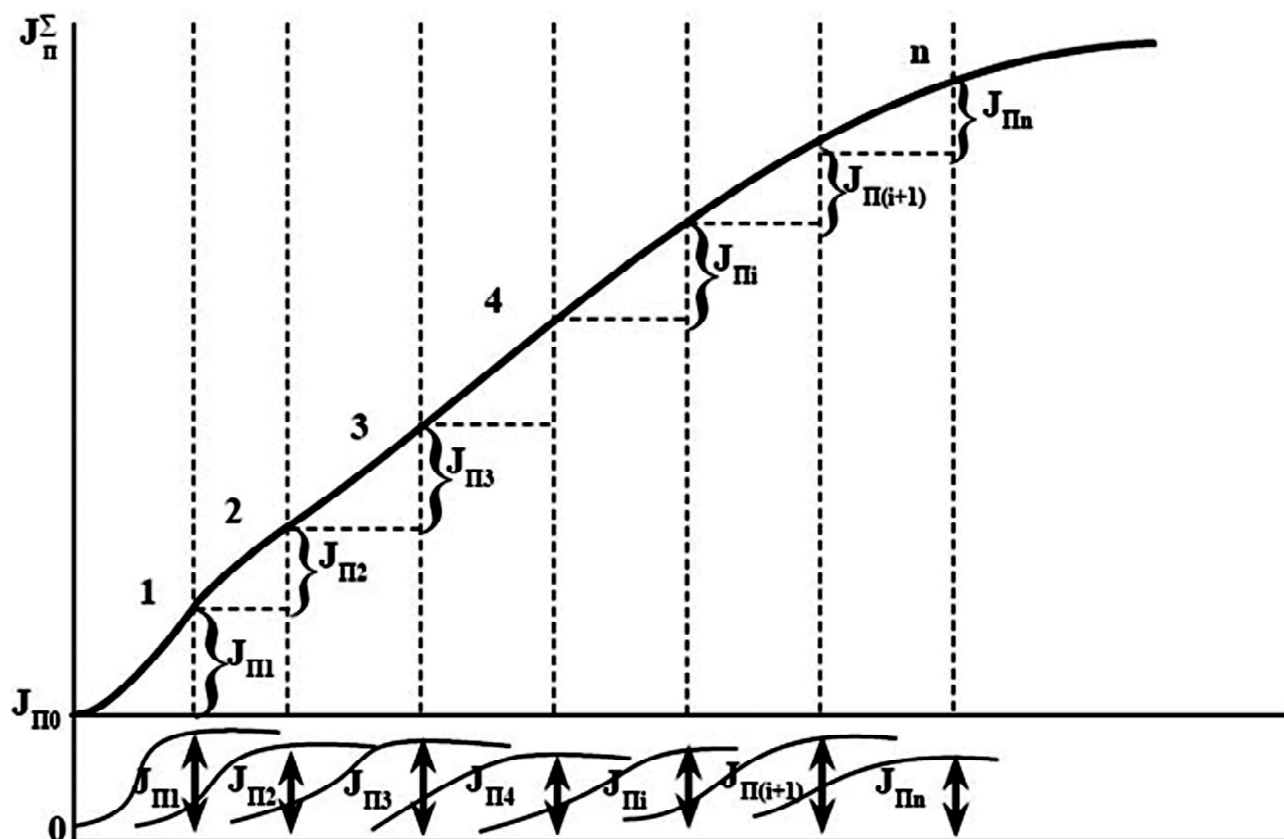
Creative process is continued at following stage of innovative-intellectual activities, where innovative process is continued for the purpose of creating new competitive products.

During whole innovative process intellectual capital is increased by means of improvement of several know-how; taking new technical decisions but, in the first place, at the expense of increasing marketing assets. In case of successful realization size of innovative marketing assets is increased, but growth of intellectual capital is generally minor at the final stage of intellectual-innovative activities.

At the final stage of vital cycle of production during the period of possible fall of production and, respectively upon reduction of the volume of manufactured products and respective incomes, importance of intellectual potential may be reduced as well, for the reason of falling image of the company.

For continuous growth of intellectual potential it is necessary to organize innovative intellectual activities so that processing innovative processes and respective new and more perfect products is provided continuously, so

that every following innovative process shall begin much earlier than before commencement of the stage of falling. In case of such variation of innovative activities in the company shall be provided at permanent basis, as it is given in the Fig. 2.



For involvement of innovation to every following innovative process, by taking into account preparation, growth of intellectual potential amounts to may be defined by the formula:

$$J_n^\Sigma = J_{pc} + \sum_{i=1}^n J_{pi} \quad i=1, n \quad (4)$$

Where J_{pc} is initial importance of intellectual potential of a company;

J_{pi} – growth of importance of intellectual potential in “i” innovative process.

$$J_p^\Sigma = J_{pc} + \sum_{i=1}^n J_{mi}$$

J_n – initial importance of intellectual potential of a company;

J_{mi} – growth of importance of intellectual potential by means of realization of “i” innovative process.

n – quantity of realized cycles of intellectual innovative activities during T-period;

T – current period of developing intellectual-innovative activities.

In such case innovative activity is organized not rhythmically and terminations take place in successful innovative activities, but changes will not be so optimal according to their nature. And more, fall of may take place because of fall of the trust of customers and, respectively, reduction of importance of K_k , as well as reduction of C_{uc} at the expense of the cost of patents and certificates, validity periods of which are expired.

Example 1. During issuance of shares of the company they evaluated cost of its material and immaterial assets and took following data:

Cost of material assets C_m – 12650 million GEL.

Cost of immaterial assets C_i – 1,25 million GEL, composition of which was evaluated by following components:

- **Cost of intellectual property Cip – 1780 million GEL.**

- **Cost of marketing assets Cma – 1,25 million GEL.**

- **Cost of the share of the immaterial assets, which form the right of property of the company Ci=5,84 million GEL.**

Initial cost of issued shares of the company was defined as sum of the costs of material and immaterial assets:

$$C_{co0} = C_m + C_i = 12050 + 1787,09 = 14437,09 \text{ million GEL.}$$

Ratio of the quality of human capital was defined by the Formula (3). Herewith $Q_0=1,0$.

Intellectual potential of a company according to the Formula (3) respectively equals to:

$$J_n = Q_0 + C_{ma} = 1,0(1,780 + 1,25) + 1,25 = 1781,25 \text{ million GEL.}$$

At the stock market cost of share after three months selling was increased in 5 percents, and total sum of the package of shares amounted to:

$$C_{opl} = 1,05 C_{op0} = 15158,94 \text{ million GEL}$$

Ratio of the quality of human capital was increased:

$$Q_{cl} = [15158,94 + (12650 + 5,84)] / (1780 + 1,25) = 1,405$$

Intellectual potential of a company after specification of importance of Q_{cl} received much higher value:

$$J_{n1} = Q_{cl}(C_{ip} + C_{ma}) = 1,405 \cdot 1781,25 = 2502 \text{ million GEL}$$

That increased importance of origin of this index for more than 40 percents.

EVALUATION OF INTELLECTUAL PROPERTY. Under modern conditions evaluating assessment of the objects of intellectual property is provided at many companies within the bounds of immaterial assets in accordance with the department “Accounting Immaterial Assets” of accounting regulations. Mentioned evaluating assessments are provided, as a rule, in accordance with the methodology, which is processed and obtained by every enterprise according to the legal documents of the issues of complying with accounting regulations and rights of intellectual property.

Typical method of approach towards the objects of intellectual property is practically oriented towards definition of the cost of the objects of industrial property and copyrights, upon their entering into the authorized capital and including into immaterial assets, for the purpose of indicating in the balance of the enterprise.

Such method of approach conditions definition of the value of intellectual property by means of taking into account expenditures made on their purchasing, as well as moral wear and change of the index of values from the moment of creating intellectual property till that of evaluation.

Some scientists² offer calculation of prediction profit of defining cost of the objects of industrial property for assessment of their cost, which is received by means of realizing products through using objects of industrial properties. Herewith, it is of essential nature to evaluate the share of profit, which is formed by means of using patent or industrial property.

From the position of the owner of patent (which means its selling) it is purposeful to take it into account as unmade profit upon definition of the cost of patent. If the right of using the patent is transferred to the third party, as well as the costs, which have place upon creation of the objects of intellectual property.

In such case cost of CcB patent from the position of seller (owner) may be defined with the formula:

$$C_{mo} = C_{oip} + \Delta P_{mo} \sum_{i=m+1}^n V_{pi} C_{mi} \quad (5)$$

Where C_{oip} are costs made for creation of the objects of industrial property and its formation into market sample;

ΔP_{mo} – Share of profit made from the unit of product created by means of using patent of the patent owner.

n – Number of the years of patent validity (invention – 20 years, useful model – 8, industrial sample – 15 years);

m – Number of passed years from the moment of receiving previous patent;

V_{pi} – Size of probable manufacturing of products in i -production year with the patent owner.

C_{mi} – Ratio of moral wear of patent, which is calculated with the formula:

$$C_{mi} = 1 - \frac{(i-1)}{n} \quad (6)$$

From the position of the purchaser, cost of patent (C_{nB}) shall be evaluated at the expense of profit made from its using, which may be made by means of involvement of the object of industrial property gained in the production and issued by means of manufactured products:

$$P_p \leq \Delta P_{bp} \sum_{i=m-1}^n V_{ni} C_{mi} \quad (7)$$

Where ΔP_{bp} is the share of profit, which may be gained by the purchaser of the patent by means of involving objects of industrial property purchased in production at production unit;

² Skorniyakov E.P. Gorbunova M.E. How to Evaluate Commercial Value of Invention. M.: Gosspatent, 2001 (in Russian).

V_{ni} – planned size of manufacturing goods by patent purchaser in i -year of production.

In the methods published by the above authors there is suggestion of evaluating share of profit made upon involvement of the objects of industrial property. On this time they use data about profit, made out of manufacturing of market products, i.e. from the products, which shall be changed or improved upon involvement of the objects of industrial property. In such case:

$$\Delta P_{mo} = P_{pob} - P_{Bo} \quad (8)$$

$$\Delta P_{bp} = P_{pon} - P_{nb} \quad (9)$$

P_{pob} and P_{bp} – this is profit respectively received by the owner of patent and purchaser on the unit of products of industrial property by means of involving objects of industrial property.

P_{Bo} and P_{Bb} – profit made in accordance with single market product by the owner and purchaser of patent.

Negotiation, by means of which patent is given to new owner, may be provided in case of satisfying following formula:

$$C_{oip} + \Delta P_{mi} \leq P_{mp} < \Delta P_{bp} \sum_{i=m+1}^n C_{mi} V_{pi} \quad (10)$$

Where P_{mp} – market cost of patent.

This term will be complied only if purchaser of patent may receive higher profit than this may be provided by the owner of the patent, which may take place at the expense of the highest importance of ΔP_{mo} and V_{pi} , i.e. to comply with the following term:

$$\Delta P_{bp} \sum_{i=m+1}^n V_{pi} > \Delta P_{mo} \sum_{i=m+1}^n V_{pi} \quad (11)$$

Such method of market assessment of patent is easily realized in case when there is “Market Product”, and its replacement by means of the object of industrial property is moving of new similar product to new, consumer features, that is production of such products, which is **more perfect in relation with market product and it is of great demand at the market**. Every initial data shall be also known to provide realization of the Formula (10) by taking into account Formulas (8) and (9). Main thing is that if we condition meanings of P_{mo} and P_{Bb} , we may also take $\Pi o I C B$ meaning (production is rally sold at the market).

If organization of new production is provided for realization of the object of industrial property, which is made on the production unit Ann and it is formed only by means of using patent, above method may be used. Pursuant to this method, profit made by means of using invention may be defined by the share of profit from total profit on Bb product, in which invention is realized.

Herewith, such share is calculated as quantity produced from three ratios.

$$\delta n = K_1 K_2 K_3 \quad (12)$$

Where C_1 – ratio of achieved outcome;

C_2 – complexity ratio of solving technical objective

C_3 – novelty factor

These ratios are changed discretely respectively until achievement of (C_1) result. Complexity of solving (C_2) objective of creating OIIC and in dependence of innovation levels within following bounds:

$$0,2 \leq C_1 \leq 1,0; \quad 0,2 \leq C_1 \leq 1,25; \quad 0,2 \leq C_1 \leq 0,8$$

In case of assessment of δn offered ratios and according above method, when involved invention and importance of profit share made by means of technical improvement of new product defined within following bounds:

$$0,008 \leq \delta n \leq 1,0$$

Respectively we may separate two limited meanings of δn by means of class of property object, which is characterized by following features:

1) Achievement of technical improvement of the objects of industrial production ($\delta n \sim 1.0$) according to innovations, as well as complexity and effectiveness of made technical decision. Through their realization product is created, with new technical and consumer features, which will make it possible to move to the new market of distribution and provide priorities comparing with products of competitors. This shall be “Pioneer” invention, which has no analogue, or it shall be difficult to copy and arrange.

2) Achievement of the lowest of possible quality of technical improvement of the objects of industrial products ($\delta n \sim 1.0$), it forms minor innovation and it is easy to copy technology and products, as well as satisfaction of consumers’ demand for long period.

Index of technical improvement. Herewith, it is purposeful to use such concept, as “index of technical improvement” for such assessment, size of which equals to δn .

If we use pointed assessment of S quality of technical improvement for the objects of industrial property in indicated in two classes; according to the five-pointed scale objects of industrial property δn of which almost amounts to 1, that may be evaluated with the best mark (excellent).

When technical improvement of the object of industrial property, under the term of $\delta n \sim 0.01$ it shall be evaluated satisfactorily, as profit made by their realization is little - within the bounds of 1 percent, though it still exists.

Evaluation “Good” shall characterize specific intermediate class of the object of industrial property, which

provide improvement of basic technical characteristics and makes it possible to satisfy increasing demand of purchasers on great list of renovated product, which, as a rule, conditions making profit for long period of time; widely spread class of the objects of industrial property is extremely little in knowledge-consuming business – providing making profit within the bounds of 20-60 percents.

Dependence of δ_{TC} on S is illustrated by means of “logic” curve, S technical improvement quality of which is given with three grades: “3” (“Satisfactory”), “4” (“Good”) and “5” (“Excellent”).

In practice we often meet with the class of the objects of commercial property with the degree of technical improvement $S=4$. Its characteristics are given in the Figure 6. The Figure shows that it has quite wide diapason of making more share of profit: from the minimal 0.2 index to the maximum 0.6. Upon definition of the degree of patent value its owner will try to evaluate profit, which is made by means of technical improvement of the object of commercial property, that δ_{TC} figure will equal to its maximal meaning.

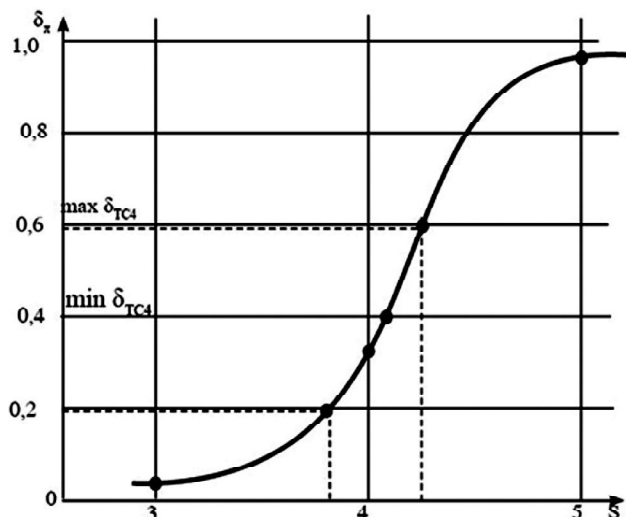


FIGURE 3. RELATION OF THE SHARE OF δ_{TC} WITH TOTAL PROFIT IN CASE OF S DEGREE OF TECHNICAL IMPROVEMENT OF PRODUCTS BY MEANS OF USING (P) INVENTION.

Potential purchaser will try to reduce importance P_{mp} and provides evaluation: $\delta_{TC} = \min \delta_{TC}$; Terms of negotiations in this case is defined within the terms of following formula:

$$C_{oip} + 0,6P_{IB} \sum_{i=m+1}^n C_{mi} V_{pi} \leq P_{mp} > 0,2P_{in} \sum_{i=m+1}^n C_{mi} V_{pi} \quad (13)$$

Where P_{IB} and P_{in} is profit made by the owner of patent and potential purchaser on specific unit.

Herewith purchaser will be oriented towards profit patent owner and thus evaluates size of its profit. $P_{IB} = P_{in}$ terms of negotiation in the process of discussion com-

promise may be achieved by means of variation of δ_{TC} importance between seller and purchaser of patent.

During evaluation of approaching to technical improvement of the objects of commercial property “Excellent” δ_{TC} importance shall not reach 1, as this means that profit made by enterprise is totally outcome of involving objects of industrial property, which, of course, opposes to the clear mind. By using drawing in the Figure 6 share of δ_{TC} profit achieved upon taking specific level of technical improvement of produced goods may be specified by means of its comparing. With assessment received by means of the Formula 13. On this time Table of K_1 , K_2 and K_3 ratios are used, which are made from above method of assessment of the values of objects of intellectual property.

Example 1 Let us bring Π_{pn} evaluation on the example of electric stove with the element of halogen warmers, which was discussed in the Example 1.1. For this we take buyer’s position, i.e. make pessimistic assessment, by taking into account the circumstances that object of industrial property during technical improvement of $S=4$ provides additionally probable 0.3 P_1 profit; on manufactured single production, which amounts to $P_1=420$ GEL during one year.

Annual volume of manufacturing products $V_{pi} = V_{nec} = 100$. Patent works only during 1 year ($n=20$ and $m=1$), when evaluation of the student pursuant to the Formula (13) achieves (if we take into account that size of the coefficient of aging for remaining 19 years amounts to 9.025).

$$V_{pn} = 0.3 \times 420 \times 1000 \times 9.025 = 1\,137\,159 \text{ GEL}$$

Method of approach said above may be used upon evaluation of the cost of patent on useful model upon evaluation of copyright on industrial samples and such objects, as software and databases for electronic data processing machines.

If we discuss Know-how like samples of industrial property listed above, from the position of expenditures made on them and profit made by means of using them (know-how), above methods may be used in relation with the sample of industrial property of given kind.

Offered method of approach will make it possible to make double assessment of the objects of industrial property:

- **Optimistic**, which is received by the owner of patent, as seller (organization, which provides settlement);
- **Pessimistic**, could be made by the purchaser of patent.

For registration and evaluation of the size of cost of Intellectual property (C_{ic}), each above assessment may be intersticed by using following formula:

$$C_{ipj} = \frac{3C_{ip}^{\min} + 2C_{in}^{\max}}{S} \quad (14)$$

- evaluation of i-object of intellectual property from the position of the purchaser;

- intellectual property evaluation of i-object by a company from the position of a purchaser.

It is purposeful to provide calculation of total evaluation of each object of intellectual property by taking into account following Formula:

$$C_{ip} = \sum_{j=1}^m C_{ipj} \quad (15)$$

m - Quantity of the objects of intellectual property, which foresees and takes evaluation of C_{ipj} value.

In cases, when the object of intellectual property is involved into the enterprise and it makes profit, a technology of production by means of using objects of intellectual property is really processed, in such case its value shall be assessed on the basis of given patent (or certificate) from the position of possibilities of sale of licenses on manufacturing of goods.

Herewith, in case of concluding license agreement, cost established by license is additional growth of the cost of the objects of intellectual property, which foresees processing of new goods (services) of creative elements, i.e. new evaluation of the costs of the objects of intellectual property:

$$C_{ip}^H = C_{ip} + \Delta C_{ip} \quad (16)$$

ΔC_{ip} – growth of the value of the object of intellectual property at the expense of expenditures of intellectual labor at the market, by means of using created objects of intellectual property.

In the international practice of trading licenses two versions of evaluation of advance reporting value is used more widely:

- 1) on the basis of profit size of the licensee;
- 2) at the base of royalty.

For analyzing this method of approach it is convenient to use analytical dependences for calculations on the obtained licenses of lump-sum payments.

In the first case, when advance calculation cost of the license is defined at the basis of the size of licensee's profit P_L , size of this profit in the first place is specified by the formula:

$$P_{L1} = P_{L1} \times V_L \times n, \quad (17)$$

Where, P_{L1} – is a profit made by the Licensee on the single sale products:

V_L – annual size of production in accordance with contractual terms;

n – term (year) of using license specified in the

agreement.

Upon lump-sum payments preliminary reporting value of the license ($C_{\text{лп}}$) is defined with the following formula:

$$C_{\text{eL}} = C_L \times P_L \quad (18)$$

And the formula 17

$$C_{\text{eL}} = C_L \times P_L \times V_L \quad (19)$$

Where C_L is the ratio of transferring from licensee's profit, at the expense of lump-sum payments, which may obtain meaning of over 1.

Market price of the license is defined upon conformity of C_L ratio in accordance with the concluded agreement. Of course, the licensee (patent owner) will try to set as much meaning as possible, when the licensee (purchaser of license) on the contrary – tries to set its least meaning.

Transfer ratio C_L shall take into account opposing affect of various factors. Herewith, influence of one factor defines growth of C_L by means of strengthening their size, and reduction of others by means of strengthening quality of influence. In this regard it is purposeful to represent this ratio as that of transfer by means of following formula:

$$C_L = I_1 \times I_2 \quad (20)$$

Where I_1 is ratio, which defines technical improvement of licensed products, its commercial meaning and technical mastering.

I_2 – index showing complexities of mastering and realization of licensed products.

Second method of approach of evaluation of preliminary reporting cost is an evaluation at the base of royalty, which leans upon using following formula based on lump-sum payments.

$$C_{\text{eL}} = R C V_L \times n \quad (21)$$

where R is a royalty, i.e. licensee's reimbursed share from the size of sold products with V_L volume. It is negotiated in the license agreement, during n year of production, which is agreed with the same agreement.

On the other hand, pursuant to the existed recommendations,³ royalty is defined by the formula:

$$R = V \times \frac{\Delta P}{C} \quad (22)$$

Where ΔP is additional profit made from manufactured and sold products by means of using license;

C – sales price of licensed product;

V – ratio, which shows the sum paid by the Licensor from additional profit, which is obtained by the Licensee.

Additional profit, made from the unit of the prod-

³ **Bromberg G.V.** Method of Reporting and Recommendation on the value of assessment of Objects of Intellectual Property - M.: Rospatent. 2008 (in Russian).

ucts, is formed at the expense of technical improvement of products and is calculated by the following formula:

$$\Delta P = \delta_{te} \times P_{L1} \quad (23)$$

Where δ_{te} – is technical index of products, which is the function of technical improvement of S-degree.

P_{L1} – profit, which is made by the licensee on each sold unit of licensed products.

Index of technical improvement $\delta_{TC} = \delta(S)$ in case of importance of $S = 4$ of the degree of technical improvement of intellectual property and object is within the bounds of 0.2 – 0.6, i.e. such meaning of δ_{TC} conforms to the case when “good” invention (useful model, industrial sample) is realized in the licensed production. This latest is characteristic to the license transactions.

Based on the Formula 23, royalty is calculated as:

$$R = V \times \frac{\delta_{te} - P_{L1}}{V} \quad (24)$$

And the Formula 21 is transferred in the following form:

$$C_{eL} = V \times \delta_{te} \times P_{L1} \times V_L \times n \quad (25)$$

If we compare Formulas 25 and 19 and take into account the fact that by means of using the Formula 20 $I_L = I_1 \times I_2$ may be considered that

$$I_1 = \delta_{te}, \quad (26)$$

$$I_2 = V \quad (27)$$

Truly, as δ_{te} , so I_1 are defined by technical improvement, i.e. high degree of production and respectively, its high consumer features.

B_2 index reflecting complexities in the process of realization and mastering licensed products conforms to the D ratio of profit issued on the license. Herewith, meaning of D is less the large is the part of additional profit transferred on mastering of signs of improvement and trademarks of production.

The practice shows that upon specification of certified value of the license D meaning is concluded within the bounds of 0.1 and 0.3. Respectively, meaning of B_2 is purposeful to be specified within same bounds.

Importance of δ_{TC} of technical improvement of the objects of respectively peculiar industrial property is changed within the bounds of 0.2 and 0.6. In the process of production of mentioned objects it is purposeful to provide procurement of license and to conform to the degree of technical improvement – $S=4$. If we involve effectiveness index of selling licensed product re defined by following formula:

$$R = V \times \frac{\delta_{te} - P_{L1}}{V} \quad (28)$$

Where P_{L1} is the profit made under the conditions of available and well known market by the licensee;

V – unit price of product at this market, when the Formula 25 will take following form:

$$C_{eL} = r_e \times \delta_{te} \times V \times V_1 \times V_L \times n \quad (29)$$

Upon comparison of the Formulas (29) and (21) we come to conclusion, that

$$R = r_e \times \delta_{te} \times V, \quad (30)$$

i.e. royalty is defined by means of effectiveness of realizing licensed products, by means of its technical improvement, with the character of complexities existed in mastering and realization of products to be prepared in accordance with the license.

Received conformity lets the licensor and licensee agree not only about sales price of R of license (which, in its turn depends on the size of factors), - but particularly on the meanings of r_e , δ_{TC} and V . These latest shall be defined with concrete characteristics. Meanings of these are within following bounds:

$$0,1 \leq V \leq 0,3 \quad 0,3 \leq \delta_{TC} \leq 0,6 \quad 0,4 \leq r_e \leq 0,9$$

By means of formula (30) definition of R makes it possible to simplify costs of payments on the base of royalty. Here they use following Formula:

$$C_{Lr} = \delta_{te} \times V \sum_{i=1}^n C_{id} \times r_{ej} \times V_{ij} \times C_{ij} \quad (31)$$

Where C_{ij} , V_{ij} – respectively value and size of manufacturing licensed products in i-year of validity of agreement and at the i-stage of payment:

R_{ej} – Index of effectiveness of realizing licensed goods at the market:

δ_{TE} – respectively index of technical improvement of products specified by means of compromise of concluding license agreement and index specifying complexities formed upon realization;

C_{di} – discount ration calculate by the Formula:

$$C_{di} = \frac{1}{\left(1 + \frac{a}{100}\right)^i} \quad (32)$$

Where a is interest received from commercial banks received from licensor in accordance with credit operations;

n – term, within the bounds of which license agreement is valid;

m_i – quantity of payment stages on the 2nd year of the Term of Agreement.

In case of combined payments, when lump-sum payments are partially provided, and later payments are provided at the base of royalty, size of C_{Lr} payments shall be defined with the following Formulas.

$$C_{ec} = \alpha C_{eL} + \beta C_{Lp} \quad (33)$$

$$\alpha + \beta = 1, 0; \quad \alpha \geq 0; \quad \beta \geq 0 \quad (34)$$

$$C_{ec} = \alpha r_e \times V \times C \times C_L \times n + \beta \delta_{te} \times V \sum_{i=1}^n Q_{di} \sum_{j=1}^{m_i} r_{eij} \times V_{ij} \times C_y \quad (35)$$

Where α and β are share of payments specified at the license agreement, respectively in the form of payments at the royalty base of lump-sum payments.

Upon evaluation of the objects of intellectual property, by means of which calculation of the cost of license is provided on the basis of the Formula 16, it is purposeful to use index of assessment of license cost C_{eL} made in accordance with the Formulas (29)-(30), i.e.

$$\Delta V_{ip} = C_{eL} \quad (36)$$

Where a compromise with purchaser of a license may be achieved by means of double risks of intermediation of double risks.

Example 3. Patent owner on household electric stove, in which they use bulb for warmers, reconstructed production to the serial production of the stoves and reassessment of the value of patent.

Marketing researches show that demand on new electric stove is significantly bigger than maximally possible size of production of the enterprise. It would be purposeful, size of sales of electrical stoves increased up to $V_n = 5000$ units a year. Such high demand is predicted for future 10 years with the value of 800 GEL on unit.

It is purposeful to enter the market of the object of industrial property with the offer of selling license on using elements of halogen warmers of producing electric stoves, as well as evaluation of costs of license and respective growth of patent cost.

Pursuant to the Formula 36, growth of the cost of patent equals to C_{eL} – size 0 cost of license under the conditions of using lump-sum payments, defined by the Formula 29. Taking into account the Formula 30, this formula may be written in the following form:

$$C_{eL} = R \times C \times V_L \times n \quad (37)$$

Pursuant to the marketing researches $C=800$ GEL, $V_n=5000$ pcs per year. $n=10$ year meaning of royalty for electric devises, at the market of intellectual property amounts to 0.05 at the global market, that is why

$$C_{eL} = 0.05 \times 800 \times 5000 \times 10 = 200\,000 \text{ GEL}$$

Consequently new cost of patent was increased up to 2 million GEL after selling license, cost of immaterial assets of the company will be increased in the same sum.

Pursuant to the data given in the example 2 herein, cost of the package of assets amounts to $C_{opl}=15158.94$ million GEL, after selling license and rising cost of immaterial assets, new cost of the company amounts to:

$$P_{co2} = 15\,158.94 + 2.0 = 15160.94 \text{ million GEL}$$

New meaning of quality ration of human capital, defined with the Formula 3 will be increased and amount to $Q_{c2} = 1\,404$.

Evaluation of the level of intellectual potential will be higher in relation with the evaluation given in the example 2:

$$J_{n2} = 1.404.1783.25 = 2503.7 \text{ million GEL.}$$

Which is more than 1.7 million GEL, than assessment J_n , which is made after increasing cost of made assets (Example 2).

MARKET PRICE OF MARKETING ASSETS. Cost of marketing assets is evaluated as sum of the value of separate components. They consist of: **image of the company, customers' base, productive contacts with national innovative system, and unified international unions.**

For the purpose of creation and permanent widening of customer's base, except manufacturing competitive products, together with necessary, consumer features of the production, it is necessary to make costs on following activities: organization of true effective advertisement; widening and mastering dealer's environment; accounting changeable demands (marketing study); relation with active supporters – company propagandists; their encouragement with valuable gifts.

All these need additional costs, to be foreseen upon evaluation of the cost of customers' base (C_{KB}).

We shall analogically foresee expenditures on making connections and maintenance inside the country (C_{cp}) and with foreign companies (C_{30}), especially with the investors and creditors. Pursuant to the accounting, such evaluations may be made without complications, as simple summation of respective costs.

Special place in evaluation of marketing assets is occupied by assessment of the cost of company image.

Some specialists⁴ consider image of the company to be evaluated with market price of trademark, but the other hand, cost of trademark shall be foreseen in the cost of intellectual property, as brand names, trademarks (service marks), names of the place of forming goods, and objects of industrial property.

In other sources they offer business reputation of the company “to evaluate costs related with formation of legal entity, i.e. share of participants (founders) into the nominal capital, with the costs on serving consultants, advertisement activities, on preparing establishment documents, registration and other fees”.⁵

Such method of approach towards cost of business image of the company C_{gp} makes is possible to avoid solving such problems, as taking into account market cost of trademark, namely what share participates in assessment of image, and which share – in assessment of intellectual property.

Herewith, with the expenditures foreseen in accounting documents may assess marketing assets of a company with following Formula:

$$C_{mR} = C_{GC} + C_{CR} + C_{FC} + C_{CB}, \quad (38)$$

Where C_{GC} – expenditures on achievement and maintenance of the image of a company;

C_{CR} – expenditure on formation and maintenance of connections inside national innovative system;

C_{FC} – expenditures on creation and maintenance of connections with international companies and issuance of securities.

C_{CB} – costs made on creation and widening customers' base of a company.

LEGAL PROTECTION OF INTELLECTUAL CAPITAL OF A COMPANY. Any innovation realized in innovative process belongs to the result of creative process of specific person or a group. They are the authors of innovation. Status and quality of protecting their rights are expressed by means of creative forces by means of recognizing property on created products; also, with management of material property. In civilized states protection of copyright and intellectual property is provided in accordance with law. Herewith, illegal utilization of intellectual property, is punishable by law intentionally, randomly, because of the case, is punishable by law.

For example, in 1996 company Polaroid sued a company Eastman Kodak, which established a plant for manufacturing materials of photo cameras and instant cameras. At the lawyers' point of view, the company Polaroid breached his right in relation with the patent right of the company. The company satisfied suits of the company Polaroid against Eastman Kodak and this latest closed the Plant, released several thousand workers and paid to Polaroid 900 million dollars for reimbursement of loss.

Another example related with breach of the rights of intellectual property: in order to try creation of perfect engines the company Daumler Chrysler AG breached patent with three-piston engines. Patent was obtained by the company FIAT in 1992. When there was a danger to the first company in relation with destruction of 360 thousand

⁴ **Brooking Enny.** Intellectual Capital. SPb Piter. pg. 121 (in Russian).

⁵ **Palamarchuk A.S.** Legal Grounds of Intangible Assets and Objects of Intellectual Property. Manual for economists. № 2. 2003.pg. 34 (in Russian).

cars, herewith costs of reimbursement of loss by FIAT; negotiations began between the Parties. It became necessary to look for the way out of the formed situation, for keeping the case out of the court.

In the field of intellectual property, the law foresees alienation of right on using intellectual product in accordance with the agreement, to include legal mechanisms, which provide protection of these products from unsanctioned usage. This is essential issue, special nature is characteristic to these products: it is not necessary for their usage to use it physically. It is not subject to physical depreciation (maybe only moral wear, growing old).

In order to protect copyright and ownership rights of property is legally foreseen by legal document. Patent authority of every country issues patents on inventions in the form of protective documents, useful model and industrial sample, and licensed on selective achievements.

Kinds of intellectual property protected by means of patents and certificates are given in the Figure 7.

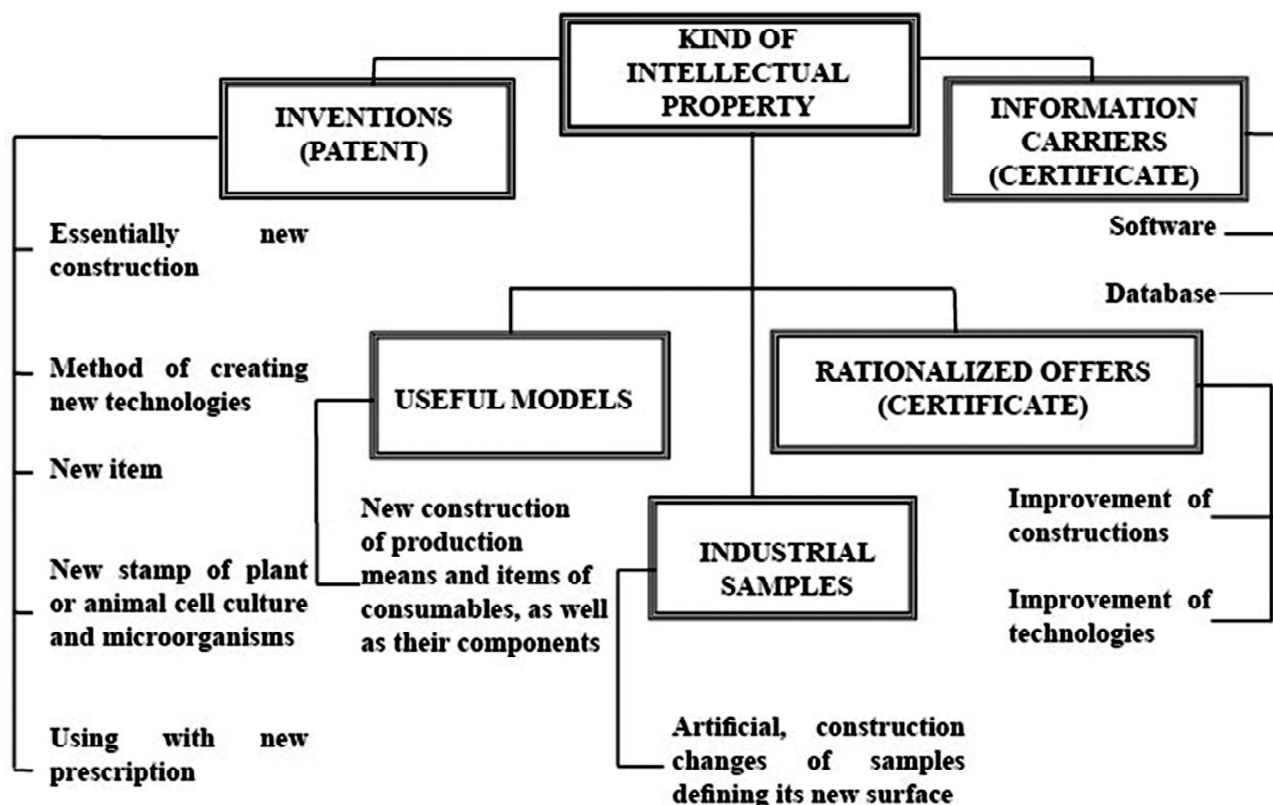


FIG. 4. OBJECTS OF INTELLECTUAL PROPERTY PROTECTED BY PATENTS AND COPYRIGHT CERTIFICATES

A document issued by respective body on inventions, which certify special right of patent owner on invention, is called a Patent.

In the patent law the term “Patent owner” defines that owner of the patent may be:

Author (authors) of industrial ownership objects;

Individuals and (or) legal entities (in case of their consent), recognized to be the authors or legal successors in patent application or applications.

Lessee, in cases foreseen in the Article 8 Paragraph two of patent law of the country

Validity period of the patent amounts to 20 years from registration of the patent at respective body; patent on industrial sample – within 8 years from registration; patent on industrial sample – works during 15 years.

Analogue documents are formed on the objects of industrial property of the second group – on identification devises of legal persons.

Complying with copyright laws. Complying with the law of copyright on the means of objects of industrial property lets the owners of patents and copyright certificates (who use special rights on the objects of industrial property) sell these rights, concession of them totally to the new owners, or sell right of using object of industrial

property. Herewith under the concept of license we consider permission issued by special state body by signing stipulated by law, and by means of using patent invention. License is formed on using industrial sample and useful model. Received licenses are related with obligatory registration of agreements between two parties – owners of the objects of industrial property and its usage between the rights of its usage.

License agreement are the agreements, on the basis of which owner of patent (licenser) gains the right on using patented object of industrial property, and the person, who receives this right (licensee), undertakes to pay the licenser payments foreseen by the Agreement. According to the agreement, special licenses give the licensee special right to use the object of industrial property in accordance with the agreed conditions. At the same time, licenser reserves the right on using it in the section, which is not given to the licensee. In case of non-special licensees, who transfer the right to the licensees about usage of the object of industrial property, reserve every right, including that of transferring license to the third party, which is certified by patent.

Pursuant to the global practice, the laws about patent foresee objects of industrial property from the monopo-

ly of patents. Following actions are not deemed to be the breach of special rights in relation with the objects of industrial property:

- 1) Using patent object at marine and river ships, or other means of air and space transportation, when they permanently or incidentally are at the territory of other countries.
- 2) Conclusion of scientific studies of patented objects or experiment;
- 3) Single production of medications at the drug-stores according to the doctor's receipt;
- 4) Using patent at emergency situations;
- 5) Using patent for personal purposes without making income;
- 6) Using objects of industrial property according to the "method of expiation of right"; if patented object is manufactured and sold or used for purposes other than intended, expiating its resource, or the third party is eligible to sell it again. Or lease or rent it, make amendments or without amendments 0 all these are deemed to be continues of circulation;
- 7) Creation of same decision of inventions independently from author;
- 8) Compulsory licensing by the state without per-

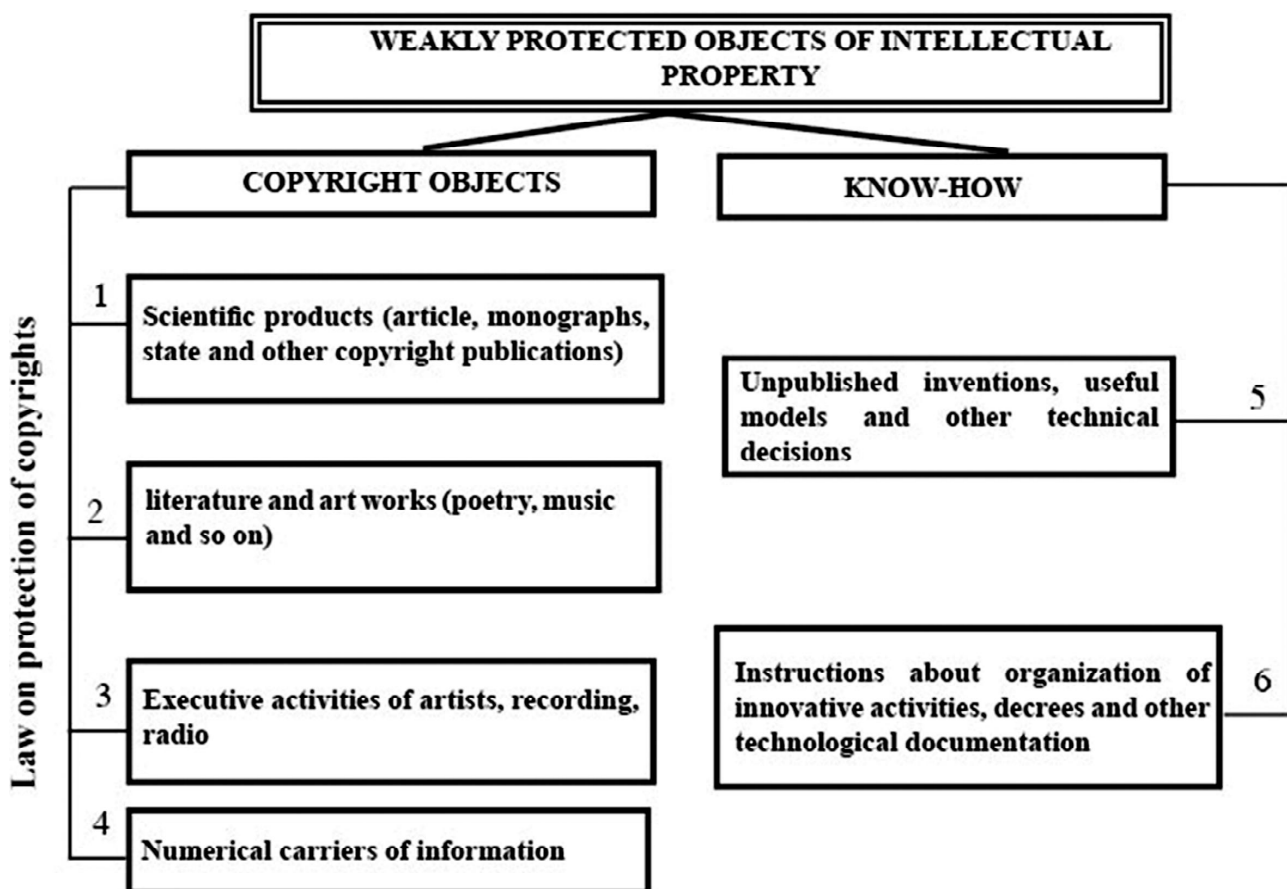


FIG. 5. WEAKLY PROTECTED OBJECTS OF INTELLECTUAL PROPERTY

mission of patent owner with respective payment, compensation (such practice is allowed in the fields of security, state security and health care).

Following two groups of intellectual property, like – objects of copyright and know-how (Fig. 8) is weakly protected from unsanctioned utilization. Herewith first two sub-groups (blocks 1 and 2) of the objects of copyright is protected by law from plagiarist, and two following sub-groups (blocks 3 and 4) of the object of copyright is protected by certificate about official registration, which protect them from unsanctioned copying, sale without licensing and usage of copies.

Though law protects objects of copyright, but state law enforcement bodies under modern conditions do not provide their respective protection.

New technical solutions are officially unpublished and unregistered protected from unsanctioned utilization. Perfect ideas in the fields of separate work of the company, as well as new directions of developing market mechanisms and so on. All these forms try to keep everything in secret from competitors to provide priorities from the point of maintenance of consumers. Such company secrets are called know-how according to law, and pursuant to the civil code of the state it is called business and commercial secrets.

Herewith, under the term know-how we consider confidential information having true or potential commercial value as:

- third person doesn't know about it;
- it is not easily accessible at no grounds;
- Carrier of information carries activities in order

to protect its confidentiality.

In case of clever innovative policy a company strictly protects its secret information, to strengthen interest towards secret intellectual property. Concepts about various technical decisions, about economical or organization innovations the effect of other kind, as well as about program documents – are published in the collections of scientific works, monographs, auxiliary manuals, advertisement prospects and so on. It is impossible to receive needed information for practical realization of technical and organizational decisions from published materials at competitive companies; herewith, a company owning know-how takes good advertisement for its intellectual property.

Know-how is not subject to registration protected by means of prohibition of disclosure to the persons, who may access given information by business procedures.

Legal form of transferring Know-how is agreement about transferring commercial, technical or other business information, as well as other kinds of property, know-how may be realized by means of concluding agreement with the party or entity interested in the information. The company, which purchases know-how, going on specific risk to receive so-called “can in the sack”, as owner of know-how doesn't transfer information needed for the purchaser before conclusion of agreement. Obligation of the selling company on involving know-how from the point of assistance may be specified in the agreement, as well as agreement on intellectual property to be purchased about using forms of calculation.

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ორგანიზაციის ინტელექტუალური პოტენციალი და მისი შეფასება

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ეკონომიკის მეცნიერებათა დოქტორი,
საქართველოს ტექნიკური უნივერსიტეტის
სრული პროფესორი

თანამედროვე პირობებში ინტელექტუალური საკუთრების ობიექტების ღირებულებითი შეფასება ბევრ ორგანიზაციაში ხორციელდება არამატერიალური აქტივების შეფასების ჩარჩოებში, ბუღალტრული აღრიცხვისა და ბუღალტრული ანგარიშგების დებულების განყოფილების „არამატერიალური აქტივების აღრიცხვა“ შესაბამისად. აღნიშნული ღირებულებითი შეფასებები ხორციელდება, როგორც წესი, იმ მეთოდის შესაბამისად, რომელიც შემუშავებულია და მიღებულია ყოველი საწარმოს მიერ ბუღალტრული აღრიცხვის დებულებებისა და ინტელექტუალური საკუთრების უფლებათა დაცვის საკითხების საკანონმდებლო დოკუმენტების შესაბამისად.

ინტელექტუალური საკუთრების ობიექტების შეფასებისადმი ტიპური მიდგომა პრაქტიკულად ორიენტირებულია სამრეწველო საკუთრების ობიექტებისა და საავტორო უფლებების ღირებულების განსაზღვრაზე, მათი შეტანისას საწესდებო კაპიტალში და არამატერიალურ აქტივებში ჩართვისას, საწარმოს ბალანსზე დაფიქსირების მიზნით.

ასეთი მიდგომა განაპირობებს ინტელექტუალური საკუთრების ღირებულების განსაზღვრას მათ შეძენაზე გაწეული ხარჯების გათვალისწინების გზით, გამოგონებათა მორალური ცვეთისა და ფასების ინდექსის ცვლილების მხედველობაში მიღებით, ინტელექტუალური საკუთრების შექმნის მომენტიდან შეფასების მომენტამდე.