



PROGRESS THROUGH TECHNOLOGY EVALUATION AND UTILIZATION OF BUSINESS RESULTS RESEARCH AND DEVELOPMENT-INNOVATION

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Abstract Intellectual property consists of a firm of property values is included in intangible assets. These property values can be any of the items under the protection of industrial property in Romania (patents, trademarks, products or commercial, industrial designs, topographies of integrated circuits, know-how etc.), provided any copyright by Law 8/1996, including software, licensing or similar rights arising from commercial contracts.

Key words:

Research, development, innovation, valuation, intangible assets

JEL Codes:

O1, O3

1. Introduction

The purpose of this approach is that the dual purpose of addressing issues related to valuation of intellectual property assets: methodological and practical. The need for this approach stems from the fact that intellectual property assets can not be evaluated with the same measure, presenting features, both because of how they were generated and implemented, but also economic and financial results, as well as the impact office. For an accurate assessment is needed in which the research framework programs of development and exploitation of research results.

Implementing Regulations of the Accounting Law (Art. 47-51) No. 82/1991, specify the nature of intangibles and explains how their amortization. Intangible assets include all assets that have no physical form, but which contribute, directly and sometimes decisively, to obtain a business profit. Number and name of intangible assets that can be evaluated separately, and the balance-sheet subject to amortization, are very different, depending on the size and nature of economic units.

Industrial property and copyrights are the values that serve in trade and production of an undertaking, as a means of competition and loyal contribution to the profit. This form of property title is not consumed by operation of protection, by manufacturing, use or marketing of the product or technology, or exploitation of the work under protection.

Intellectual property of a company is made up of property values is included in intangible assets as required by art. 50 para. 2 of the Implementing Regulations of the Accounting Law 82/1991. The

property values can be any of the objects of industrial property subject to protection in Romania (patents, trademarks, products or commercial, industrial designs, topographies of integrated circuits know-how, etc..), any copyright provided for by law 8 / 1996, including software, licensing or similar rights arising from commercial contracts.

These assets are entered in the heritage that the separate evaluation of each piece of industrial property, each license or copyright, registration and submission of depreciation in the balance sheet.

2. Intellectual property estate values

Intellectual property estate values may come from three sources:

- a) the contribution of members*, realized by sending the right of property firm, through an assignment contract, in exchange for social rights (*contribution in kind* - patents, industrial designs, trademarks etc.. or *contribution to the industry* - know- how, as the author of: scientific, technical drawings, software etc..) intake may be only a fraction of the subscribed capital if it can be intellectual property security value for money;
- b) the acquisition from third parties*, by agreement of intellectual property rights, price negotiable;
- c) investments acquired* intangible results of intellectual activity that is the company's employees during their employment contract, the company acquires ownership if such a clause expressly stated in the individual employment contract or national legislation provides for special conditions on the right creation of property for certain employees (eg art. 5 letter. a and para. 2 of Law

64/1991, art. 5 letter. of the Law 129/1992 and art. 6 of Act 8 / 1996), intellectual property firm may be acquired through an assignment contract with its employee if the unit has a right of preference for concluding such an agreement, under the law (art. 5 para. 6 of Law 64/1991).

Intellectual Property Rights established the trader on one of the three paths is highlighted in assets and intangible assets accounting firm as account 205 (active account).

Debit Account 205 reflects the input (input or company acquisitions), and credit, output (sales made by the company to others), expressing the debit balance remaining assets (existing). Therefore, this account serves to highlight the patents, designs industrial (industrial design), licenses, know-how, computer software etc., as a contribution to, purchased or acquired fixed asset unit during the period due to their legal validity or the contractual period and recorded in the balance sheet. Account 205 is an asset account is debited with the value of purchases of industrial property rights or copyrights, the amounts spent from the exploitation of industrial property objects made in-house, with proceeds from the valuation of the contribution to the establishment society, the amounts of fees set by licensing contracts where the company is the licensee, and other expenses incurred in such purchases. Account 205 is credited with the value of the same rights over, fully amortized and depreciated the value remaining on the drive transmitted through asset transfer patent rights, trade mark, design, copyright etc. Account 205 is a debit balance remaining value.

Assets representing intellectual property rights will gradually pay off their legal validity period, the unit that holds the asset (the right holder or licensee) in accordance with art. 50 alin. 50 para. 3 of the Implementing Regulations of Law 82/1991.

Impairment of property, account 205 and 2805 are attached and/or account 290, which reflects the depreciation, that provision.

Account 2805 is a liability account is credited with depreciation recovered, including its own operating expenses and debited to the removal of operating rights. Account credit balance in 2805 has been in operation rights of redemption.

Prepayments for intangible assets consist of intellectual property rights relate to expenditure of sums due to uncertainty or risk their existence or whose cases may be set but without knowing the timing and amount. Provisions for liabilities and other expenses in these cases are designed to cover business risks related to the operation of intellectual property rights, such as expenses necessary to carry out their prototypes and

experimentation. Provisions may also be intended for any disputes or security.

An important aspect of accounting is the accounting for the exploitation of industrial property rights, namely the accounting related to this operation. In this case, the operations do not differ from those used for other assets or economic activities of the unit.

If the unit manufactures, sells and/or uses products or technologies under protection (i.e., exploitation or exploitation of industrial property rights of copyright) and the resulting income from these activities, the costs of acquisition of rights (including license) or pay the costs of entitlements for authors, including additional salary remuneration provided by law, will recover.

Recovery of expenses made by the Company may be made and fees collected from licensed third party company (in this case the unit asset is the licensor). The granting of operating licenses for patents, trademarks, designs, copyrights etc. the asset unit, it will be to collect and an annual interest rate established by the license agreement.

Evaluation of intellectual property titles can be made a contribution value, acquisition cost, production cost, licenses cost, transfer cost etc.

The balance sheet asset is intellectual property in these values.

For the evaluation of intangible assets that contain intellectual property rights from business activities, take out their nominal value, i.e., the amount spent by the firm for their creation (protection costs, expenses development research, design costs, testing costs, etc.).

Property value when setting up their contribution to society is the value accepted during the association or merger partners.

Upon entry into heritage protection titles shall be valued at their acquisition cost, the value being determined by contract with third parties or company employees. Remaining debt from the acquisition of intellectual protection rights outlined in the 164 account, "*Due on concessions and other similar debts*" which serves to track assets in property taken by the firm, according to contracts. This account is a liability, credit that the purchase price (the price of the license purchase price or part of a commercial contract status refers to the value of industrial property rights in this agreement acquisition etc.) or other similar values. 164 accounts debited with the amounts paid for the license, assignment or other similar debt is a credit balance remaining debt.

Regarding the assessment of intangibles in the field of intellectual property can use several methods such as:

- Evaluating the costs, consisting of determining the value of patent, trademark, etc. design from both asset investments unit for obtaining titles of protection, and

for taking the necessary measures for the exploitation rights;

- Evaluating the profit that might obtain in the future (as a method of assessment), taking into account the benefits of copyright exploitation would bring economic unit;
- Assessing the market price;
- Assessing the cost of replacement (in line with inflation).

Entry into the heritage buildings in the area of intellectual property values is recorded as follows:

- a) when entering the company's foundation as a contribution by credit Account 456: "*Settlements capital associations*";
- b) when caught by third-party purchase by credit account 404, "*Providers of property*";
- c) when self-made by credit account 721, "*Revenue from the production of intangibles*";
- d) received free of charge by credit account 131, "*Investment grants*".

For intangible assets are recorded above and value added tax debit account 4426.

Depreciation of assets including intellectual property rights, called "*intangible assets*" shall be made during the period prescribed for their use on account of operating expenses, debit account 6811: "*Operating expenses for depreciation of property*" and the loan account in 2805: "*Depreciation concessions, patents and other similar rights and values*". Once these assets were fully depreciated, will run the estate decrease their contractual value (2805 = 205).

If the trader in assets over the acquisition of intellectual property rights for the operation, they will be treated as operating capital, following operations: the acquisition itself and the liabilities assumed by contract (205 = 164), record monthly expenditure represented royalty and interest (401 and 401 = 612 = 512; 666 = 1684 and 1684 = 512), discharge from the management rights acquired at the conclusion of the contract and payment of the liabilities assumed (164 205).

If the trader is the unit for operating an asset that gives part of its rights as owner of another legal entity, the transfer of rights will be reflected in their own accounts as follows: assets highlighting claims to be the right to recover the full value that is transmitted, that the license and annual fixed interest rate (461 = 267), registration fee and receipt of interest established by contract (512 = 461) and claims settlement assets according to their receipt (267 = 2805).

After a period of operation right in property or a contract of assignment of patent, trade mark or design rights and other similar conditions or recovery of full depreciation of the entire amount under the contract of assignment of intangible assets relating to rights out of intellectual property assets (2805 = 205).

Finally some special considerations must be observed in the field of intangible intellectual property, namely:

- This type of active accumulation of knowledge and information is closely linked to the unit employees, regardless of their functions and they become very important for the reputation and technical merit of the company, because they are born or are purchased from the company to gain market need and earn profits;
- Intellectual property rights are guaranteed and protected by the Romanian State by special laws and from this point of view is the most loyal means of competition, ensuring business competitiveness;
- Technical solutions and design subject to protection, suffering a lapse because of ongoing renewal process and renewal of technology products;
- Use of marks, provided that the product quality, contributing to the firm gaining market reputation and attracting customers identified by a trademark.

Clear conclusion of the relationship between intellectual property and profits of a firm is sure to be granted entry into the property rights granted by law in this area, an accurate assessment of such intangible assets as well as keeping an account of the movement these days' values.

At the level of research and development units recorded a special interest in establishing evaluation procedures as a result of requests from two main directions:

- o creating intellectual property assets from business;
- o pressure their employees in developing procedures in research incentives, namely remuneration of innovative creative work submitted.

In practice, they found difficulty and futility of developing a generally accepted methodology, it involves a high risk of error generated by the diversity of economic and organizational structures at macroeconomic level.

Evaluation of intellectual property assets can be achieved through several processes, by analogy with material. In this sense, value can be determined by one of the following forms:

a) *Evaluation based on the amount of costs incurred in generating intellectual property asset*, which may add, on a case by case, a "profit" to offset the innovative effort expended. Of course, the costs incurred in generating intellectual property asset can be added to a certain extent, and cost "social", and those costs related to attracting, selecting, training and research training of person-ment.

b) *assessment based on use value of the property*, that the amount negotiated and established during a transaction. These so-called market value based on supply and demand at a level that would be satisfactory to both parties involved (executor and acceptor).

The difference between the two approaches is absolute in the sense that they characterize diametrically opposed economic systems.

As an interim solution, the paper proposes to use when entering the procedure A and procedure B heritage for trading.

Relevant factors in evaluating intellectual property assets can be identified in successive levels of economic activity, such as: macroeconomic factors, short term economic factors, the internal state of the economic, scientific and professional level research staff. Therefore, determining the factors that affect intellectual property assets assessment includes two groups:

a) general factors - global trends that characterize the sphere of economics and, as a specific feature of the social.

b) specific factors that characterize the internal environment and external relational operator.

In this context and on behalf of the entity's private relationships influences, you can claim that the procedure for evaluation of intellectual property assets depends on the economic sector in which the collected information, being in a specific proportion of its range. Download in other areas can be done with caution and adjustments required.

Following existing research and experience field have achieved the following important elements in assessing property assets:

I. The trends of economic integration in the European Union structures, the value of intellectual property assets can be reported to:

- Structure and organization of the EU's economic sector;
- Levels of labor productivity and financial profitability;
- Evolutionary trends in the structure and quality of products and technologies, including regulations and restrictions relating to environmental protection;
- Developing policies and specific investments.

II. The term knowledge of the economic environment is concerned, mainly the following aspects:

- The national average yield/industry/economic sector's industrial fixed assets and turnover;
- Financial interest, economically and socially for a specific investment;
- Approximate average cost of acquisition and implementation of intellectual property assets;
- Development trends in the field, structural developments in the field of products and technologies;
- Various limiting restrictions (by law, socio-economic, environmental etc.);
- Labor productivity, efficiency and rate of implementation of scientific research results.

III. Evaluation of the entity's internal

- Key financial indicators to evaluate trends;

- Labor productivity sectors of production and design staff return Scientific;
- Remuneration of staff, to creativity and innovation (as distinct, if possible);
- Average cost for generating intellectual property assets, the individual contribution of research staff;
- The policy of attracting and training of research personnel, investments in the stimulation of creativity and innovation;
- Trader scientific prestige, brand products, quality brand;
- Research potential and long-term prospects.

IV. The scientific and professional research staff

- Recognizing the potential of scientific knowledge and research staff, individually and collectively;
- Commitment to scientific research and business culture, to the work currently performed;
- Integration in collective and assembly trader activity, orientation on the support assembly;
- Participation in national and international scientific life, the exchange of information;
- Ability in relation to existing equipment design applications, the ability in handling equipment.

It is noted that information needed to assess, as outlined above, make the data relevant intellectual property asset of which we can mention: the degree of novelty, the science and technology, ease of application, physical and moral life, the level of acceptability, economic efficiency and so expected that data will be addressed later.

In the relevant elements, how the transfer of property, contract intellectual property is essential. In this respect, considering the following aspects:

- a. Licensing mode (exclusive, nonexclusive, limited etc.);
- b. Pay the transfer mode (lump sum payment, fee, shareholding etc.);
- c. Providing technical assistance mode (full documentation in the initial phase, the documentation provided along the way, right to use and support, without assistance etc.).

To ensure fast and efficient calculation procedure is necessary to select the correct evaluation criteria and easy quantification of value. The use of these parameters is performed with precautions to reduce possible error of overrating or appreciation that the proposed transaction values.

Method for evaluating a complex asset companies enter the total value, in addition to items such as body size and value of intangible assets.

The accounting records of an enterprise, the intellectual property is included in intangible group assets, along with rights, relationships and other intangible grouped in Class 2 cost of fixed assets.

In industrial or commercial environment, can be identified over 100 intangible assets:

- *technical competence* (documentation, studies, licenses, patents, know-how and other objects of industrial property, copyright, computer programs, libraries, databases, quality assurance systems, qualification of personnel etc.);
- *commercial power* (promotion through advertising, ford commercial, distribution etc.);
- *managerial competence* (quality, key managers, performance management etc.);
- *reputation* (the reputation of the company);
- *Site*;
- *customers*;
- *creditworthiness and solvency* to customers and banks;
- *position to administrative and public bodies*.

Practical assessment of intellectual property is a complex and difficult issue because there are many factors that influence it, and apply the methodologies differ from one country to another, from one continent to another. Therefore, the responsibility of carrying out transactions these intangible assets is maximum, because they have social implications and / or political.

In essence, the valuation of intangible assets can be made by: • evaluating a set of intangible elements as part of the company (Good Will); • intangible assessment of a single element (or set) separately and independently.

Classical methods of assessment of intellectual property are the same as those used for measuring intangible assets or intangible, ie methods based on market comparisons, methods based on income, profits or turnover (cash flow method of the net; rate method fee) cost-based methods (legal analysis, technical analysis, business analysis, social analysis), methods based on the recovery period.

After completing an assessment for intellectual property objects are advised to undertake a review of the correctness or susceptibility of this operation.

Intangible asset valuation approaches is made with the following groups of evaluation methods:

- future net income capitalization method;
- cost method;
- comparison method of market value;
- other methods.

Evaluation is a complex process that is not confined to groups use evaluation methods. Evaluation should know the basic principles of each method of evaluation

and experience of firms specializing in this type of evaluation.

Valuation of intangible assets can be done by considering a set of intangible elements as part of the company or by a single item assessing intangible asset separate from the company.

Intangible elements are numerous and can be identified in the industrial and/or commercial after different characteristics.

Once identified, intangible elements can be classified in various ways.

References

1. Nastase, I.G. (2009). *Insurance law of industrial property rights of inventors*, QUALITY magazine, year X, no. 1-2, January-February, p. 67.
2. Nastase, I.G. (2008). *Implications of research, technological development and innovation in security system*, PhD Thesis, Ministry of National Defense, National Defense University, War College, Bucharest.
3. Nastase, I.G. (2010). *Financial Management of the Company. Methods of analysis, evaluation and calculation of financial and economic efficiency of intangible fixed assets. Case Studies - The patent* ProUniversitaria Publishing, Bucharest.
4. Nastase, I.G. Lepadatu, G.(2009). *Interdependence of economic and technological environment*, journal Quality, year X, no. 6, June, pp. 40-45.
5. Nastase, I.G., Nastase, G.I.D. (2009). *Scientific research and technological development- factors of progress*, Journal Inobarometru year I, no. 2, October, p. 5.
6. Nastase, I.G. (2010). *Economic and Financial Crisis in Romania in our Globalized World, Causes, Effects and Solution*, Metalurgia International Magazine, vol. XV no. 3, pp. 111-113.
7. Nastase, I.G., Badea, C.D., Nastase, G.I.D. (2010). *General Concepts of Political Science*, Metalurgia International Magazine, Vol. V (2010), no. 1, pp. 195-200.
8. Nastase, I.G., Badea, C.D., Nastase, G.I.D. (2010). *Innovative models of development through science*, Cogitto Magazine, no. II, March 2010, vol. II, Ed ProUniversitaria, Bucharest, pp. 106-135.
9. Nastase, I.G., Badea, C.D. (2010). *System Problems, Research and Development and Innovation (RDI) of Romania*, Euromentor Magazine, Vol. I, March, pp. 29-30.