Economic Efficiency Estimation of Intangible Assets Use

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Abstract

The article comprises a set of theoretical and methodological statements and practical suggestions about the specific ways of estimation of intangible assets. The problems of the intangible assets development process management and their further application effectiveness deserve the most serious attention. However, the problem of the intangible assets development process management and their further application effectiveness is not illustrated enough.

Keywords: intangible assets, estimation, economic efficiency.

1. Introduction

There is no doubt that modern production cannot function effectively without sophisticated technological developments, the results of innovative activity and scientific-applied researches. The lag in the latest developments, high-efficiency technologies, and application of knowledge-intensive production leads to stagnation of the productive forces of society. However, even possessing the significant scientific developments or progressive ideas, the company does not always introduce them into production or mastering of the advanced technologies. The main reason – is in the wrong setting of priorities, inefficient methods of use and management of the research work results carried out in the companies, underestimation of the motivational mechanism influence on engineering manpower professional activity. Therefore, the problems of the intangible assets development process management and their further application effectiveness deserve the most serious attention. In addition there is the problem of fair disclosure in the financial statements of companies. Aletkin P.A. notes, that in case with Russia companies it is not clear if the disclosure of information under IFRS will help investors in getting high quality data about financial position and financial results of the companies (Aletkin P.A., 2014).

Note that the knowledge-intensive production can reach success at the market only under the certain conditions:

1) a clear understanding of the demand scope for innovation among potential consumers, its economic expression of advantages over existing analogues;
2) competent distribution of roles and functions of human resource personnel meeting the requirements of high professionalism, working efficiency, final result orientation, etc.
3) formalized approach exclusion in the formation of the management structure, a singular focus on speed and flexibility in management decision-making;
4) monitoring system establishment for the effectiveness of R&D results implementation into industrial production;
5) creation of an analytical indicators system allowing to assess the profitability of generated intangible assets, their contribution into the final results of financial and economic activity of the organization.

2. Theory

The task of the technical and economic importance of inventions determining has been formulated back in the middle of the last century due to the necessity of the complex “science-production” management (Anne Marie Knott, 2003). Questions of evaluation of intangible assets are presented in the most interesting works of the following scholars: Anne Wyatt (2005), Erik Brynjolfsson (2002), Gema Pastor-Agustín (2011), Lie Dharma (2009), Richard N. Cooper (2010). However, currently there is not a single methodological approach to the significance of inventions and approved methodologies evaluation. It is determined by several reasons:

1) objects of intangible assets are specific accounting objects; they are heterogeneous in their composition, the
nature of the use, the degree of impact on the financial and economic results of the company;
2) the share of intangible assets in the aggregate of all assets of the company may be insignificant (but it should
be noted that this fact is often a consequence of the non-rational organization of accounting, when intangible
assets are ignored, and the costs of their creation (acquisition) are charged to the income statement
simultaneously, without capitalization as an asset);
3) underestimation of the intangible objects role by the heads of the companies traditionally oriented to the
improvement of material-mass base;
4) the absence until the present time of a unified system of economic indicators able to comprehensively
characterize the commercial use of intangible assets.

Nevertheless, one cannot deny the fact of high yields of individual intangible assets. Thus, if the average annual
growth rate of world industrial production comprises about 2.5-3%, then the global trade of licenses for use of industrial
property and technology is growing at a rate as high as 12% per year. At the same time, it must be emphasized that
investments in intellectual property objects are the most risky sector of economy (Valeria Gattai, 2010).

Most companies are interested in the efficiency of investments into the creation of certain intangible assets, that is
- income per unit of investment (Kulikova L.I., Ivanovskaya A.V., 2014). Note that the income from the use of intangible
assets is the difference over a certain period of time between cash receipts and cash payments received by the rights
holder for the right to use objects. Benefit from the use of intangible assets is determined on the basis of direct
comparison of the value, risk, and time of receipt of the cash flow from the use of intangible assets with the value, risk
and time of receipt of the cash flow which the right holder would have received not using these facilities. This approach
can be implemented by discounting or capitalization of cash flows from the use of intellectual property. If the cash flows
from the use of intangible assets objects in equal intervals of time are not the same, then the amount of value is
determined by discounting of the future cash flows. For us, this approach is interesting for some options, which are
possible here. Thus, this method lies in the basis for determining the benefits in the profit, which has the owner of
intangible assets. Sufficient degree of accuracy is the prerequisite of the advantage in profits analysis fulfillment which
means the amount of additional revenue obtained due to the possession of the rights to the property and its use in the
exercise of economic activity (detected when compared to analogue). Under the advantage of profit the additional net
profit (after tax) is construed, which is obtained with each item of product using the intangible assets. This advantage can
be achieved by improving the quality of products, or in addition to this factor, by increasing the popularity of the company
(for example, increasing the knowledge of the trademark). The advantage of profit appears:

1) as compared to the company, which manufactures products similar to the products of the company under
consideration;
2) in relation to the present company, manufacturing these products before and after the use of intangible assets.
Annual profit advantage expressed in monetary terms is reduced to the present value taking into account the
expected period of its receipt:
\[ C = \sum V_t \times \Delta P_t \times K \]
where
\[ C \] – profit advantage;
\[ V_t \] - volume of products manufactured using the intangible asset in the t-year;
\[ \Delta P_t \] - the advantage of profits expected to gain from the use of an intangible asset in the t-year;
\[ K \] - the discount factor in the t-year.

In our opinion, this method is of particular interest because it is often this approach is used to estimate the value of
inventions. This annual advantage in profit is discounted based on the expected period of its receipt. However, when
using this method it is necessary to take into account that the additional revenue can be obtained just in case of an
increase in demand for the company's products due to other factors.

As a rule, in the practice of companies there are situations where it is difficult to assess the potential net income
attributable to the object of intangible assets. Companies produce a large range of products, and it is a complex task to
determine income, which is brought by a particular type of product and what's more - the object of intellectual property
used to it. In this regard, it is proposed to use the method of the profit separating attributable to the object of intangible
assets.

Wherein the following steps are performed:
1) the expected remaining useful life of the asset is determined;
2) the income derived by an enterprise from the products using the intangible asset is forecasted;
3) the cash flow as the income generated by the intangible assets is forecasted (by allocating of an appropriate
share);
Table 1 represents the parameters included in the first group.

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<th>Indicators</th>
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<tr>
<td>1</td>
<td>Depreciation coefficient</td>
<td>Suitability of this coefficient application for the purposes of analysis is questionable, as the physical depreciation is not characteristic for intangible assets. Though, note that this type of assets is exposed to a considerable moral depreciation, and it is impossible to determine its period with the sufficient degree of reliability.</td>
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<td>2</td>
<td>Coefficient of qualification, renewal, acquisitions and disposals</td>
<td>Economic purpose is characterization of the movement process and the renewal degree of the company’s innovative component, the level of its compliance with the modern conditions</td>
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<td>3</td>
<td>The level of intra-productive returns from intangible assets</td>
<td>Is determined judging from the gross income of the company gained from the sales of its products (works, services) basing on or with application of the intangible assets, per the unit of the average price of the indicated assets for the calculated period of time. The comparison base must be added with the data of the level of returns from intangible assets of the competitor companies, the best achievements from the data of the knowledge-intensive companies (reference value).</td>
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<td>4</td>
<td>Coefficient of extensive use of intangible assets</td>
<td>Is calculated as the product of two indicators: the coefficient of extensiveness of intangible assets use in the area (calculated as the ration between the intangible assets value used in the company and the total value of produced R&amp;D costs for this period) and the coefficient of intangible assets use by the time of the company operation (calculated as the ratio between the working and calendar time fund in the company).</td>
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<td>5</td>
<td>Revenue share from the use of intangible assets in manufacturing of products (works, services)</td>
<td>This indicator is difficult for calculation. As a rule, expert-statistical method is used for its calculation (we have dealt on this earlier).</td>
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<td>6</td>
<td>Pay-back period of investments into intangible assets</td>
<td>In modern conditions of industrial enterprises economic management this indicator on the average may be twice as low as compared to the similar one by the permanent assets. This is explained by: firstly, by the high intensity of innovation activity, and thus, quick renovation of intangible assets; secondly, by the permanent costs for support and development of scientific-innovational potential; thirdly, by the high risk of investing into the intangible assets due to not sufficiently efficient intra-production use or commercial (market) failure.</td>
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The second group of indicators characterizing the efficiency of commercial use of intangible assets consists of the following factors:

1) The level of commercial returns from the intangible assets, which is defined as the ratio of income from the commercial use of the intangible asset and their average value for the period.

2) The return on intangible assets, calculated as the ratio of the balance sheet profit of the adopted version of the intangible asset to the total amount of the costs required for the creation and use of the intangible asset.

3) Readiness of intangible assets of internal manufacturing for use as commercial application. Studies show that more than half of all of intangible assets used in the production are created directly by the companies. The corresponding coefficient of intangible asset availability for commercial use ($K_r$) is calculated by the formula:

$$K_r = \frac{\sum_{i=1}^{n} c_n}{\sum_{i=1}^{n} c_n + \sum_{j=1}^{m} c_m}$$

where

- $c_n$ - the relevant elements of the costs of the $i$-th object of intangible assets;
- $n$ - is the number of intangible assets prepared for commercial sale in the reporting period;
- $c_m$ - relevant elements of the costs of the $j$-th object of intangible assets;
- $m$ - the number of intangible assets not ready for commercial sale created by the company in the reporting period.

Exemplary allowable $K_r$ values lie within the range of 0.7 to 0.9. By increasing the upper value of the specified index the backlogs of intangible assets are reduced to a dangerously small value (less than 10%), which is usually insufficient for the effective implementation of innovation activity in the current reporting period. If the lower value is less than 0.7 – then the indicator of the backlogs for intangible assets is comparable with the index of objects prepared for the commercial use, indicating the “freezing” of working capital in innovation activity.

4. Conclusions

Thus, we see that majority of the indicators used for assessment of innovation organization effectiveness is determined by a statistical expertise, which introduces an element of subjectivity in the analysis conducted in this way. The greatest effect is achieved by continuous monitoring of the dynamics of the above factors and their values as compared with the similar indicators of the competitor companies.

References


