Methodical approaches to valuation of intangible assets

Anna Banociova, Radoslav Bajus

Technical University of Košice, Faculty of Economics, Department of Finance, Nemcovej 32, 040 01, Košice, Slovak Republic, EU, anna.banociova@tuke.sk (corresponding author)

Radoslav Bajus

Technical University of Košice, Faculty of Economics, Department of Finance, Nemcovej 32, 040 01, Košice, Slovak Republic, EU, radoslav.bajus@tuke.sk

Keywords: intangible assets, valuation, international accounting standards.

Abstract: Intangible assets in the activities of business entities can constitute a significant part of assets. Their valuation can be done in several ways, which are fundamentally different. Literature offers several methods for valuing intangible assets, which are based on three basic approaches. Each of them captures the value of the property based on different specific characteristics. The issue of intangible assets is also addressed by international accounting standards, the task of which is to guide the accounting and reporting of this type of assets so that the financial statements provide correct and complete information that is comparable on a global basis.

1 Introduction

The main motive of every business entity is to ensure profit from its business activity.

In addition to the primary management activity to ensure the entity's prosperity, it is necessary for the entity to devote equal care to economics, accounting and reporting.

Every entity needs assets, which is a necessary prerequisite for carrying out business activities. From an accounting, but also from an economic point of view, assets are divided into tangible and intangible. In many cases, intangible assets have a high value and sometimes cannot even exist without a tangible component. When creating the price of intangible assets, we can encounter significant specific factors that do not appear in tangible assets. The valuation of intangible assets is a very difficult task due to the nature of the assets, as it is difficult to determine the boundary between intellectual and other forms of capital. The valuation of intangible assets is a very difficult task due to the nature of the property, because it is difficult to determine the boundary between intellectual and other forms of capital. Another drawback of intellectual property valuation methods is that current academic publications often focus on current trends and ignore aspects of already existing classical methods. Therefore, the current methods are mostly complicated theoretical proposals, their usability in practice is limited, which slows down the development of an unified way of measuring intellectual property in entities both at the national and international level. Property valuation experts mostly agree on the classic division of methods into three basic approaches:

- Cost approach.
- Income approach.
- Comparative approach.

The mentioned approaches appear to be the most suitable for the comparative, economic and physical characteristics of the entity's assets [2].

Cost approach

The cost approach is the simplest way to value intangible assets. The methods of this approach try to capture the value of the property based on an estimate of the costs associated with its development. It means a direct relationship between costs and the value of intangible assets. The result is not the value of intangible assets. From the perspective of the market, or the buyer, the result does not reflect the potential benefit of the given asset [3]. This approach is based on the principle of economic
substitution, i.e. the idea that the interested party is not willing to pay more for an intangible asset than it would pay in economic costs for the creation of an intangible asset of comparable utility. Appraisal by the cost method is the determination of the value of the input of human labor, material and creative energy, necessary for building or acquiring similar assets in current economic conditions and the current state of the given industry [4]. This approach represents the costs associated with the direct reproduction of the property or the costs associated with the replacement of the valued property, takes into account functional deficiency and economic, or more precisely moral obsolescence [5]. Intangibles are a diverse group, and a wide range of costs are associated with them. Intangible assets are primarily:
- Costs of research, development, testing (for technical solutions).
- Costs of consumer surveys, advertising campaigns, administration associated with introduction to the market (for trademarks).
- Costs related to legal protection [4].

Income approach

Income approach is the most widely used approach to value intangible assets. It is based on the principle of economic expectation, i.e. the idea that the interested party is not willing to pay more for an intangible asset than the current value of the expected income from the use of the asset at a degree of risk at the level of a comparable investment. The income approach represents the second generation of intellectual property valuation methods. It is based on the property's ability to generate cash flow. While the comparative approach has its limitations and the cost approach is applicable only in special cases, income approach methods are generally applicable to most intangible asset valuation situations. This approach [6] is based on discounted cash flows and defines the value of the asset as the present value of the net expected income to be achieved during its economic life. When calculating the value of the asset, it is based on the future income related to the business, then their current value is determined and the part of this value that is related to intellectual property is verified. The costs associated with the operation of the asset must also be separated from this potential gross income. When determining the value of an asset, the income approach focuses on the net cash flow derived from the use of the asset, the duration of the source of income and the discount rate (inflation, risk, interest rates) [7].

The most widespread method for valuation of intangible assets, especially intellectual property rights, is the license analogy method. This method is based on the consideration that the value of the intangible asset is equal to the price that would most likely be paid on the market for agreeing to use a similar or identical solution, or for its transfer. The rights to use are provided in the form of a license or similar contract. A license fee is paid for the right to use them [8].

Comparative approach

Comparative approach methods of intellectual property valuation determine the value of assets by studying transactions with assets that are similar to the one being valued under similar circumstances. The price of the comparable asset is subsequently adjusted for characteristics that are different compared to the characteristics of the relevant asset (such as date of sale, location, type, age and technical condition, and likely future use). Based on the application of the average price, a value estimate is obtained based on the principle of a comparative approach. Considering the determination of the value of the property based on comparable transactions, a high level of awareness is required [9]. Compared are:
- Economic characteristics.
- Technological characteristics.
- Functional characteristics.
- Economy sector.
- Economic conditions on the given market at the time of the compared transaction.
- The existence of above-standard financial conditions of the transaction [6].

In order to be able to use this method, it is necessary to have a given market, a sufficient number of traded goods on the market and the availability of the necessary information. The procedure of this method consists of several steps:
- Finding a suitable market, timeliness of accounting.
- Obtaining all available information on transactions with a comparable good.
- Analyzing and checking the timeliness of information obtained.
- Selection of comparing units and their analysis.
- Comparison of selected units with the appraised property according to certain characteristics.
- Summarizing the obtained data into one data or within a certain range [2].

The advantage of this approach is that it can be applied to a wide range of intangible assets. Information and market transactions data can be very useful in the analysis and valuation of intellectual property, but are rarely comprehensive enough to form the basis of a satisfactory valuation of the property [4].

2.1 Advantages and disadvantages of individual approaches

Each of the above mentioned intangible asset valuation approaches has its application, often as a supporting method. Table 1 contains the most significant advantages and disadvantages of individual approaches and methods.
Methodical approaches to valuation of intangible assets
Anna Banociova, Radoslav Bajus

<table>
<thead>
<tr>
<th>Approach</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>It is based on the principle of economic substitution. Simple calculation. It is suitable in cases where the benefit from an intangible asset is not clear. The amount of an intangible asset appears in the accounting records as soon as it is created.</td>
<td>These methods are not able to work out the market value of an intangible asset, because there is no direct relationship between the value of an intangible asset and the costs necessary to create it. When calculating, this approach does not take into account the future income that the intangible asset is capable of generating. The result does not reflect the potential benefit of the given asset. Determining the cost of &quot;creating&quot; an intangible asset is difficult, because it is necessary to carry out a detailed analysis of the subject of the valuation (basic, technical parameters).</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td>It is based on the principle of economic expectation. Income approach methods are generally applicable to most types of intangible assets. The basic method of valuation of intellectual property rights, which are tradable in the form of license agreements. Relatively simple calculation The necessary data are in most cases available from the financial records of entities. The related cash flow is predictable.</td>
<td>The disadvantage of the methods is that they are based on the assumptions of future development, which is always associated with a certain degree of risk. It is necessary to predict not only the future cash flow, but also to estimate the discount rate. The non-market method (valuation according to the law) will never calculate the market value of the asset, because it does not consider the nature of the intangible asset and their difference.</td>
</tr>
<tr>
<td><strong>Comparative</strong></td>
<td>It is based on the principle of balance. Relatively unambiguous valuation approach. It can serve as a check on the results of other approaches. Can be applicable to a wide range of intangible assets.</td>
<td>Limited market in the area of trading with intangible goods. A high level of market awareness is required. The necessary resources and information for the valuation are not publicly available or are incomplete. The uniqueness of intangible assets complicates the comparison.</td>
</tr>
</tbody>
</table>

Table 1 Advantages and disadvantages of individual approaches
2.2 **Determination of the general value of intangible assets in the Slovak Republic**

The calculation of the general value of intangible assets in the Slovak Republic is governed by Decree no. 492/2004 Coll. Ministry of Justice of the Slovak Republic, which establishes methods and procedures for determining the general value of assets. The general value of the intangible assets establishes methods and procedures for determining the value of assessable rights shall be determined in accordance with the aforementioned decree:

a) by the license analogy method in case of licenses, patents, trademarks and other tradable parts of intangible assets, or

b) by the method of capitalization of exhaustible resources; the basis is the determination of the length of the period in years during which the intangible asset will be used; calculation of the volume of exhaustible resources, which are created by the use of valued intangible assets; determination of the share that falls to the valued intangible assets of the company from the generated exhaustible resources, by relationship (1), (2):

\[
VSH_{\text{NIM}} = SH_{O2} \times p_{\text{NIM}} \ [€] \quad (1)
\]

where

\[
VSH_{\text{NIM}} \quad \text{general value of the company's intangible assets.}
\]

\[
SH_{O2} = \sum_{t=1}^{n} \frac{O_{t}}{(1+i)^{t}} \ [€] \quad (2)
\]

where

\[
n \quad \text{number of years of use of intangible assets of the company [year].}
\]

\[
SH_{O2} \quad \text{current value of future exhaustible resources as of the date of preparation of the expert opinion [€].}
\]

\[
p_{\text{NIM}} \quad \text{the percentage by which the valued intangible asset participates in the creation of exhaustible resources, which is entered into the calculation in decimal form [%/100].}
\]

\[
i \quad \text{capitalization rate in percentages calculated according to Annex no. 1 of part 2, which is inserted into the calculation in decimal form [%/100] [10].}
\]

**Scope of the standard Intangible assets**

In the introductory part, the standard defines the scope, because there are a number of intangible assets falling under the diction of other standards that regulate these other intangible assets. According to the standard IAS 38 intangible asset is an identifiable non-monetary asset without physical substance. The standard emphasizes the recognition of an intangible asset and that it is identifiable. It is identifiable if it either:

- Is separable, i.e. is capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable asset or liability.
- Or arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

An entity controls an asset if the entity has the power to obtain the future economic benefits flowing from the underlying resource and to restrict the access of others to those benefits. The capacity of an entity to control the future economic benefits from an intangible asset would normally stem from legal rights.

The future economic benefits flowing from an intangible asset may include revenue from the sale of products or services, cost savings, or other benefits resulting from the use of the asset by the entity. This is how the standard defines future economic benefit for intangible assets.

**Recognition and valuation of intangible assets**

An intangible asset shall be recognized if, and only if:

- It is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and
- It is possible to reliably value the costs associated with the acquisition of the intangible asset.

The standard directly lists examples of intangible assets that do not meet the criteria for the recognition of intangible assets, namely:

- Establishment expenses.
- Expenses for retraining employees.
- Advertising and promotion expenses.
- Expenses for relocation or reorganization of a part or the whole company.
The main reason for not recognizing these assets is that it is very difficult to assign such expenses directly to a specific intangible asset and distinguish them from the expenses of developing the business as a whole. Therefore, subsequent expenses incurred after the inclusion of an intangible asset in the entity’s assets, as well as intangible assets created by the entity’s own activity, are rarely reflected in its accounting value. The standard states that subsequent expenses on brands, mastheads, publishing titles, customer lists, and items similar in substance—whether externally purchased or internally generated—are always included in the income statement in the period in which they are incurred. These expenses cannot be distinguished from the expenses of developing the business as a whole.

**Initial valuation of intangible assets**

An intangible asset shall be valued initially at cost. The standard defines the following options for acquiring intangible assets:

- **Separate acquisition of intangible assets**
- **Acquisition of intangible assets as part of a business combination**
- **Acquisition of intangible assets by way of a government grant**
- **Internally generated intangible assets**

**Separate acquisition of intangible assets**

The cost of a separately acquired intangible asset comprises:

- Its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates.
- Any directly attributable cost of preparing the asset for its intended use.

Examples of directly attributable costs are:

- Costs of employee benefits arising directly from bringing the asset to its working condition.
- Professional fees arising directly from bringing the asset to its working condition.
- Costs of testing whether the asset is functioning properly.

Recognition of costs in the carrying amount of an intangible asset ceases when the asset is in the condition necessary for it to be capable of operating in the intended manner. The following costs are not included in the cost price of an asset.

** Acquisition of intangible assets as part of a business combination**

Regarding the issue of the acquisition of intangible assets as part of a business combination, the standard briefly states that if an intangible asset is acquired in a business combination, the cost of that intangible asset is its fair value at the acquisition date. The main attributes of recognition of an intangible asset during a business combination at the acquirer are the reliability of determining the fair value of the asset - the existence of an active market, the possibility of determining the useful life of the acquired asset and control of the asset.

**Acquisition of intangible assets by way of a government grant**

In case the entity acquires an intangible asset in the form of a government grant, the standard refers to the solution according to the Government grant standard. These are the situations where an intangible asset is acquired free of charge, or for nominal consideration, by way of a government grant. It may be e.g. licenses to operate radio or television stations, licenses or quotas for the import of certain commodities, import licenses or quotas or rights to access other restricted resources, etc. In case of small and medium-sized entities, it may be the allocation of production quotas in agriculture or the allocation of emission quotas in manufacture. The synergy with the above-mentioned standard lies in the fact that according to its wording, the entity is allowed to recognize assets and, at the same time, the received grant during the initial recognition at fair value. The standard also allows an alternative solution, if an entity does not recognize the asset initially at fair value, or, if there is no functional active market, the entity recognizes the intangible assets acquired at nominal value increased by expenses directly attributable to the preparing the asset for its intended use.

**Internally generated intangible assets**

Internally generated intangible assets are regulated in great detail in the Intangible Assets standard. The standard resolves whether the entity can even consider certain items internally generated as intangible assets, or whether it is an expense of the given period.

The problem is to determine from which moment it is possible to recognize an intangible asset in the balance sheet with sufficient certainty. This is primarily the moment when the entity can demonstrate with sufficient certainty that an intangible asset will generate future economic benefit.

An entity can implement various projects for which it spends considerable resources. During the development of such projects, the entity cannot declare their success, or meet the basic definition of assets. Therefore, the standard solves the basic question of when to activate the spent funds into assets. Whether it is right from the start of the project or only when certain prerequisites are met.

Another issue related to certain intangibles, such as trademarks, is whether certain costs incurred are clearly related to the development of the trademark as such, or were incurred generally to support the entity’s reputation. As the answers to these questions are not clear, the International Accounting Standards Board chose the most cautious solution for certain items and prohibited their
activation. The standard recognizes two basic categories of assets created internally, namely the research phase and the development phase.

In the research phase of an internal project, an entity cannot demonstrate that an intangible asset exists that will generate probable future economic benefits. Therefore, research costs are recognized as costs when incurred. The standard states that an intangible asset arising from the development phase of an internal project shall be recognized if, and only if, an entity can demonstrate all of the following:

- The technical feasibility.
- Its intention to complete it and sell it.
- Its ability to use or sell.
- The existence of the market.
- The availability of resources.
- The ability of reliable valuation.

If at least one of these criteria is not met, the entity cannot capitalize the incurred development costs.

Subsequent costs related to an intangible asset that has already been recognized in the accounting entity's balance sheet are considered technical appreciation in terms of the standard, provided that they increase the economic benefit derived from the asset that it is reliably valued and is attributable to the given asset.

The useful life of an intangible asset, its retirement and disposal

An entity assesses whether the useful life of the given intangible asset is finite or indeterminate. An intangible asset with a finite useful life is amortized, so the entity determines the useful life and the depreciation method. An entity begins to amortize an intangible asset the moment it begins to use it. The amortization method used shall reflect the pattern in which the asset’s future economic benefits are expected to be consumed by the entity. The standard lists the straight-line method, the diminishing balance method and the units of production method. The method used is selected on the basis of the expected pattern of consumption of the expected future economic benefits embodied in the asset and is applied consistently from period to period. The maximum limit of applicability is not set. This is determined by the entity itself. Amortization of intangible assets is the same as depreciation of tangible assets.

If an intangible asset has an indefinite useful life, it may not be amortized and is tested (once a year) for impairment in accordance with standard 26 Impairment of non-financial assets. When determining the useful life, the entity must consider many economic and legal factors, which are mentioned in the standard in this regard.

The entity derecognizes an intangible asset from the balance sheet if:

- Is discarded, e.g. due to sale or entity ceases to use it and recognize its residual value as expense.
- No future economic benefits are expected from its use or disposal.

Disclosure of Intangible Assets

The standard sets strict criteria for the disclosure of intangible assets in the notes to the financial statements. It requires to disclose the following for each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets:

- Whether the useful lives are indefinite or finite,
- the amortization methods used for intangible assets with finite useful lives,
- the gross carrying amount and any accumulated amortization at the beginning and end of the period,
- a reconciliation of the carrying amount at the beginning and end of the period

The following is published:

a) for an intangible asset assessed as having an indefinite useful life, the carrying amount of that asset and the reasons supporting the assessment of an indefinite useful life,

b) a description, the carrying amount and remaining amortization period of any individual intangible asset that is material to the entity’s financial statements,

c) for intangible assets acquired by way of a government grant and initially recognized at fair value:

- The fair value initially recognized for these assets.
- Their carrying amount.
- Whether they are valued after recognition under the cost model or the revaluation model.

This standard requires high professionalism of the compiler of notes to the financial statements, because notes are the most important element of the presentation of the financial statements, which serve all users of the given statement to create a comprehensive picture of the given entity.

4 Conclusion

Approaches to the valuation of intangible assets are not uniform. Each was developed for certain requirements and has a diverse view of the issue, however, none of them is universal.

The cost approach assumes that an intangible asset can be valued based on the costs that have been invested in it, converted to a present value. The problem with this method can be the fact that the value to the owner of the intangible asset can be much higher than the value that we calculate using past costs.

In practice, the income approach is the most used. It is based on the consideration of the future benefit that the given intangible asset will bring us.
The article contains a description of the basic approaches to valuation of intangible assets and points out their advantages and disadvantages.

Intangible assets are also covered by the International Accounting Standards, which primarily serve to harmonize the content of financial statements in different countries. Their goal is to achieve a situation where the same transactions are reflected in the financial statements of different entities in the same way, regardless of the state in which the financial statements are drawn up. They thus provide investors with enough reliable data.

According to standard 38, an acquired asset is recognized if the future economic benefit corresponding to the asset is probable and the cost of the asset can be reliably estimated. However, there is a difference in the standards dealing with the reporting of intangible assets created by own activities, namely in the acquisition prices associated with their creation. These are divided into research and development phases. The research phase consists of activities such as acquiring new knowledge, evaluating the results of research, searching for alternative materials, and the like. In the research phase of an internal project, the entity is not able to prove the existence of an intangible asset that is likely to bring future economic benefit yet. In the development phase, the completion of the internally generated asset has not yet been completed, but the company can already document its existence. Acquisition prices of internally generated intangible assets that are in the research phase are always recognized as costs. However, the acquisition prices of such assets in the development phase may enter into the value of the asset, if the conditions required by standard 38 are met and proven by the entity. It means that standard 38 allows, under certain conditions, the capitalization of acquisition prices that are included in the development phase.

An intangible asset recognized by an entity can be registered as an intangible asset with a finite or indefinitely useful life. Intangible assets with a finite useful life are amortized. Intangible assets with an indefinite useful life are not amortized, however, must be tested for impairment at each balance sheet date.

The accounting entity derecognizes an intangible asset from the balance sheet if it is retired or ceases to be used and no future economic benefits are expected from its use or retirement.

References

Methodical approaches to valuation of intangible assets
Anna Banociova, Radoslav Bajus


Review process
Single-blind peer review process.