ACCOUNTING CONTROVERSY ON THE RECOGNITION AND EVALUATION OF DEVELOPMENT EXPENDITURE

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Abstract

The development of technology in recent decades has forced the transition from the industrialized society, where the main role was occupied by tangible assets, to an information society, where the essential place is played by intangible assets. These are assets that can not be touched or felt, but are very important to produce wealth and to maintain competitiveness. Within these, development expenditure occupies an important place because it influences the analysis of an entity and its future. The accounting practices applicable to development expenditure are based on theoretical fundamentals and ambiguous typologies. The purpose of the article is to present the controversies about recognizing and evaluating development expenditure. Although development expenditure involves large initial investments, it generates, on medium and long term, significant savings. Depending on the purpose for which it is carried out, research and development expenditure can in time generate identifiable intangible assets but also intangible unidentifiable assets. An optimistic attitude regarding the chances of success of a development project will lead to the capitalization of development expenditure. Capitalizing development expenditures, the usefulness of financial statements is increased, which is generally measured in the ability to explain stock prices through earnings and accounting values.

Keywords: *intangible assets, development expenditure, research expenditure, depreciation, future economic benefits.*

Clasificare JEL : *M40, M41*

1. Introduction and context of the study

Any company, smaller or larger, owns both tangible assets and intangible assets. In the past, the development of a business depended on the effectiveness with which the tangible assets were organized and evaluated. Today the value of a business can not be analyzed without regard to patents, copyrights, trademarks and other intellectual property rights. A company has loyal customers or exclusivity agreements with suppliers, experienced and loyal workforce, a very good location, or a manager with special organizational skills. The potential of an economic entity in terms of knowledge, information, technical progress, intelligence, research, how it manages them are essential elements that can distinguish it from its competitors. "The essential difference between organizations is given by people and less of buildings and equipment." (Gorgan, 2007)

Intangible assets have existed for a very long time. "The first inhabitant of the caverns who knew how to light the fire had very valuable knowledge. This ability was an intangible asset."(Cohen, 2008)

Since ancient times people have invented a numbering system, an alphabet, a calendar, but have not patented inventions. At present, any invention whether patented or copyrighted can be recognized in accounting as an intangible asset.

In recent years, researchers and professional organizations have a growing interest in intangible assets. For example, intangible assets are an important subject of analysis for the European industrial competitiveness policy. Worldwide, financial reports give a notable impact to the intangible asset. In Romania, the emphasis is still on the tangible component of the asset. Most listed companies should report more detailed information on intangible assets because their value may notably influence the profitability of firms (Garcia, 2007)

On the basis of the "Empirical Study on Financial Reporting of Intangible Assets by Romanian Firms", the authors Fădur Cristina – Ionela, Ciotină Daniela and Mironiuc Marinela concluded the following: " Romanian firms are characterized by a reduced degree of information dissemination regarding intangible assets, the differences between the market value and the accounting one can be explained not on account of intangible assets recorded in accounting, but on extra-financial factors, which are related to investors' confidence "(Mironiuc, 2011)

By dealing with the topic of the assessment of intangible assets in the article "Theoretical Aspects Regarding the Valuation of Intangible Assets," the author, Holt Gheorghe, concluded that "there is always a gap between the volume of investments and the recognized intangible assets because no reliable basis for evaluating all components involved in the investment process can be offered."(Holt, 2015)

2. Conceptual delimitation between research expenditure and development expenditure

From a historical point of view, research and development expenditure was, along with goodwill, one of the intangible items normally reported in the financial statements. For this reason, research and development expenditure has been the subject of many academic efforts.

With the application of IAS 38 "Intangible assets", there was a need for conceptual differentiation between research and development expenditure. IAS 38 stantard defines research as the original and planned investigation undertaken to obtain new scientific or technical knowledge or meanings. The concept of development involves applying research findings to a project that aims at producing new goods or services or improving the existing ones.

In the specialized literature (Popa et al, 2007), the most significant examples of development activities recognized by international standards are synthesized. Among these we mention:

- the design, construction and testing of prototypes and models before production and use;
- the design of tools, templates, patterns and stamps involving the use of new technology;
- the design, construction and operation of a pilot entity that is not economically feasible for commercial production;
- the design, construction and testing of the alternatives chosen for new or improved materials, tools, products, processes, systems or services.

Development expenditures are "costs incurred by applying research results or other knowledge in a plan or project that aims at producing new materials, devices, products, processes, systems or services, new or substantially improved, prior to the establishment of serial production or of use. "(Mocanu, 2016)

Development expenditure has a number of special features that justify their inclusion in the category of intangible assets. Although development expenditure involves large initial investments, it generates, on medium and long term, significant savings.

3. The identifiable or unidentifiable nature of research and development expenditure

For an intangible asset to be recognized in accounting, it must meet the following criteria: be identifiable, have control over a resource, generate future economic benefits, and evaluate asset cost in a reliable manner.

Identifiable intangible assets include intellectual property rights that are embodied in patents, copyrights, trademarks, trademarks and trade secrets. According to IAS 38, "Intangible Assets", an intangible asset is identifiable when it is separable and derives from contractual or other legal rights.

Is research and development expenditure identifiable or unidentifiable? We can not find a direct answer to this question because, depending on the purpose for which it is carried out,

research and development expenditure can in time generate identifiable intangible assets but also intangible unidentifiable assets. Research done by a firm may lead to patents which, in turn, can be bought and sold separately. In this situation, research expenditure directly generates intellectual property and can be considered as identifiable intangible assets. Any intellectual property right may be separate from the entity, may be sold, leased or exchanged individually or together with a contract, asset or liability. For example, in the machine building industry, there are patents associated with durable goods. These patents are the result of capitalized research and development spending. Thus, a machine can incorporate patented technologies. The car will be branded and marketed. Based on research conducted within the firm, the way of operation of the machine or any device is presented in a user manual that incorporates a copyright that can be recognized as an intangible asset.

A company's patent portfolio as well as employee professional development result from a transaction (patented products) or investment (organizing training courses) and represent future economic benefits controlled by the economic entity. An entity controls an intangible asset if the entity has the ability to obtain future economic benefits from the resource and restrict the access of others to those benefits. In the case of patents, control may be legally revoked by the Legal Office, but the economic entity can demonstrate the control over the future economic benefits of that patent.

Not always, research and development spending is reflected in patents. Some investments in research and development made by a firm have as a final goal the improvement of production techniques or commercial techniques, with no intention of obtaining a patent. This is the unidentifiable component of development expenditure in their capacity of intangible assets.

Although the link between extensive research and development activities and future economic benefits has not been clearly established, firms with high research ratios and market value of equity have experienced significant annual benefits. At the same time, we need to be aware that doing more research just for the sake of research does not bring greater benefits. However, there are some important results. For example, "there is a significant impact on price / benefit ratios when research and development expenditure is adjusted to equity equivalent." (Cohen, 2008). The effect of capitalizing research and development expenditure on price / benefit ratio is notable for the intense research and development activities of the industrial companies.

In the paper "Intangible Assets: Evaluation and Economic Benefits", Jeffrey A. Cohen (Cohen, 2008) presents the main controversies regarding the evaluation of intangible assets, in general, and development expenditure in particular. A first approach is revenue-based approach, which focuses on cash flows. The objective of this approach is to identify the present value of certain development expenditures on the basis of future economic benefits. The second approach of the evaluation is market-based and leads to the comparable element method. The cost approach makes it possible to compare costs and value of development expenses recognized as intangible assets. The objective of the three approaches is to present the development costs in the financial statements. Financial statements "comply to the letter of law and norms, but not necessarily to its spirit (Delessalle, 2003).

Technical and market knowledge, qualified staff, consumer portfolios and market share are just a few examples that IAS 38 mentions as intangible elements that generate future economic benefits, but for which problems arise in terms of full control of these resources, and , as a consequence, can not be recognized as intangible assets.

Revenues from the sale of products or services, savings and use of intellectual property in a production process can be considered the main future economic benefits resulting from the development phase of an internal research and development project.

Analyzing the criteria for recognizing development expenditure, we notice that most controversies arise on the resource control criteria, but we can not neglect the existence of unidentifiable non-material elements, but which generate significant economic benefits.

4. Optimism and exigencies in development expenditure accounting

In the last decades, accountants in the field of accounting have studied with interest the effects of capitalizing on development expenditure. In the past, when stock trading was not as intense as today, firms preferred to pass research and development directly to the expense, immediately lowering the full value of revenue. This resulted in a decrease in the current profit and an increase in profit growth reported in future financial years.

Empirical research has shown that by capitalizing development expenditures, the usefulness of financial statements is increased, which is generally measured in the ability to explain stock prices through earnings and accounting values. For example, researchers Dennis Chambers, Ross Jennings and Robert Thompson "have conducted a study showing that depreciation and discretionary capitalization increase the relevance of financial statements." (Cohen, 2008)

The accounting treatment of research and development expenditure is different in US standards compared to IFRS standards. Based on GAAP standards, ongoing research and development is immediately passed on to expenditures, while IFRS standards allow capitalization of development expenditures.

An optimistic attitude regarding the chances of success of a development project will lead to the capitalization of development expenditure. The impact on the financial statements of an optimistic attitude is obvious: the increasing of profit in the capitalization exercise and the diminishing of the next year's result as consequence of the recording of depreciation expenses. For the depreciation, some economic estimates of useful life are required. In the accrual accounting, these estimates are made under risk and uncertainty. "While the risk is associated with a possible future situation, uncertainty also characterizes a future situation but is likely not to be achieved." (Tulvinschi, 2016)

The value accounted for as an expense over a period of management "can not be capitalized retrospectively over a subsequent period." (Feleagă, 2005)

The requirements of national and international norms call for a distinction to be made between the research phase and the development one of an internal research and development project. Intangible assets arising from the research phase should not be recognized in the balance sheet. Research costs in the research phase of an internal project must be recognized as expenditure in the income statement. It is considered that in the research phase of an internal project, an entity can not demonstrate that there is an intangible asset and that it will generate future economic benefits. In the development phase of an internal project, an entity may, in some cases, identify an intangible asset and demonstrate that it will generate likely future economic benefits. This is possible because the development phase of a project is more advanced than the research phase. If a clear distinction can not be made between the research and development phases, a turn towards creative accounting techniques is made.

Accordingly IAS 38, development expenditures are necessarily capitalized if the intangible asset meets the following criteria: technical feasibility, intention to complete the asset, use it or sell it, its ability to use it or sell it, the probability of future economic benefits, the availability of financial and technical resources to complete the development, use or sale of the asset, the reliability of the measurement of capitalized payments.

The likelihood of future economic benefits can be demonstrated by the existence of a market for the production generated by the intangible asset or for the intangible asset itself. If internal use is envisaged, future economic benefits can be demonstrated by the usefulness of the intangible asset.

Through the following example, we try to highlight the compromise between expectations and exigencies in the accounting treatment of development expenditures.

Example: An entity carries out, in exercise N, a research and development project that causes expenditures of 40 000 m.u. (monetary units). This project aims to modernize the manufacturing technology in order to increase the volume of sales. It is estimated that the economic benefits generated by this project occur over four years following its realization and are worth 12000 m.u. / year.

In the presented situation, the professional accountant must decide whether it is better for the entity to capitalize the expense or it is more appropriate to cover the expenses as operating expenses. If you opt for spending capitalization, the research and development project affects the intangible asset accounts and, implicitly, the balance sheet. In this scenario, development expenditure will be depreciable over the four years in which economic benefits are generated. If the option is for recognizing operating expenses in the research phase of the project, they affect the profit and loss account.

In the first described scenario, the accounting records are:

- recognition of development expenditure at the end of year N:

203 „Development expenditure"	=	721 „Income from the production of intangible assets"	40 000	40 000

- depreciation of development expenditure in years N + 1, N + 2, N + 3 and N + 4:

6811 „ Operating on depreciation of fixed assets "	=	2803 „ Depreciation of development expenses"	10 000	10 000

- recording the economic benefits obtained in years N + 1, N + 2, N + 3 and N + 4 by carrying out the research and development project:

411 „ Clients"	=	%	14 280	
		701 „ Revenues from the sale of finished products"		12 000
		4427 „ Collected VAT"		2 280

In the second option, expenditure will be classified as research expenditure because there is no certainty of obtaining economic benefits following the completion of the project. The accounting records are:

- recornition of research expenditure in year N:

%	=	401 „ Suppliers"		47 600
614 „ Expenditure on studies and research"			40 000	
4426 „ Deductible VAT"			7 600	

- recording the benefits obtained in years N+1, N+2, N+3 and N+4:

411 „ Clients"	=	%	14 280	
		701 „ Revenues from the sale of finished products"		12 000
		4427 „ Collected VAT"		2 280

In tables no. 1 and no. 2 the influence on the profit and loss account of the two accounting treatments is analyzed.

Table no. 1: Influence on the profit and loss account of capitalization of development expenditures

Year	Income	Expenditure	Result	Income Tax
N	40 000	-	40 000	6 400
N+1	12 000	10 000	2 000	320
N+2	12 000	10 000	2 000	320
N+3	12 000	10 000	2 000	320
N+4	12 000	10 000	2 000	320
Total	88 000	40 000	48 000	7 680

Table no.2: The impact on the profit and loss account of the recognition of research expenditures in the category of operating expenses

Year	Income	Expenditure	Result	Income Tax
N	-	40 000	(40 000)	-
N+1	12 000	-	12 000	1 920
N+2	12 000	-	12 000	1 920
N+3	12 000	-	12 000	1 920
N+4	12 000	-	12 000	1 920
Total	48 000	40 000	8 000	7 680

It is noted that, according to the accounting treatment applied, the cumulative accounting result over the five years is different. Also, the structure of the accounting result within each year is different. The cumulative income tax is the same, but its structure within each year is different.

Managers' expectations, as users of accounting information, are related to achieving long-term economic performance. From the perspective of these expectations, the professional accountant should opt for the capitalization of development costs and their depreciation over the years in which economic benefits are generated.

The requirements of national and international accounting rules limit managers' expectations. The limits refer to difficulties in the evaluation of research and development expenditure and to the uncertainty regarding the fulfillment of the legal conditions of successful technical and commercial profitability.

Alternative accounting treatment can not be discussed if the research - development study is carried out by a third party or if the results of the study are received free of charge. The third party may be a research institute or another entity billing the documentation to the research firm that is beneficiary of the research. The latter records the acquisition of an intangible asset and related VAT. Subsequently, it depreciates linearly the development costs over the period of use, which can not exceed 10 years.

According to the Romanian law, the value of purchased intangible assets is subject to value added tax, but the value of internally generated intangible assets is not taxable. In the international accounting practice, the production of intangible assets for self constitutes a delivery and, therefore, internally generated development expenditure is included in the taxable amount of VAT. The VAT is exigible and deductible part is included in the cost of the asset.

From a fiscal point of view, development expenditure is amortized over the contract period or over the period of use. If the length of the contract or the period of use exceeds five years, it must be given in the explanatory notes together with the reasons which led to it, but the depreciation period may not exceed 10 years.

If, in the previous example, we consider that the economic entity receives documents for the modernization of the manufacturing techniques free of charge and does not carry out the research on its own account, an intangible asset will be recognized in the accounting. This situation will be reflected as follows:

- receiving documentation:

203 „ Development Expenditure"	=	475 „ Investment grants"	40 000	40 000
-depreciation of development expenses in the first year:				
6811 „ Operating on depreciation of fixed assets "	=	2803 „ Depreciation of development expenses"	10 000	10 000
- the transition to the specific income of the depreciation equivalent in the investment grant:				
475 „ Investment grants"	=	7584 „ Revenues from investment"	10 000	10 000
- highlighting development expenditure after depreciation and quata change – part of the investment grant on income in zears N+1, N+2, N+3 and N+4				
2803 „ Depreciation of development expediture"	=	203 „ Development expenditure"	40 000	40 000

We notice that in exercise N, by recognizing an intangible asset, the structure of the balance sheet is changed, but the profit and loss account is not affected.

The accounting result and the profit and loss account will be affected in the following years, where depreciation of development expenses is recorded and current amortization equivalent of the investment grant is recorded as current income.

A common occurrence in recent years is related to the software developed internally for research and development purposes. Such software can be treated, from an accounting point of view, as development expenditure. If the purpose for which the software is created is to increase the efficiency of a department within the firm, the development expenditure will be passed to the current expenses of that department. Another goal for which software can be developed is sale. In this situation, the research and development phase will have to be separated. Research costs will be recognized as operating expenses until a certain level of technical feasibility is achieved. Subsequently, development expenditure will be capitalized until the software is ready to enter the market, at which point costs can be depreciated. Technical feasibility can not be proven during the design phase, but only when the IT application design phase is completed. At this point, development expenditures can be recognized as intangible assets under construction.

The software reception and the passing of intangible assets in progress to intangible assets of development expenditure kind will be made during the software exploitation phase. In this last phase, the economic benefits for the entity through the software can be identified.

5. Conclusions

Development expenditure has become increasingly important in the modern economy. For this reason, financial accounting should produce more relevant information on development expenditures. The lack of reliable information on development expenditure is a social and economic problem because intangible assets create value within an entity.

Depending on the purpose for which they are incurred, research and development expenditure may generate identifiable intangible assets over time but also unidentifiable intangible assets.

For a better financial communication, International Accounting Standards differentiates research expenditure from development expenditure.

Analyzing the criteria for recognizing development expenditure, we notice that most controversies arise with the resource control criteria. (

A development project that has chances of success determines the capitalization of development expenditure. As a consequence of this, the economic entity records an increase in profit in the capitalization exercise and a decrease in the result of the next year as a result of the recording of depreciation expenses.

Research costs in the research phase of an internal project must be recognized at expense in the profit and loss account. In the development phase of an internal project, an entity may, in some cases, identify an intangible asset and demonstrate that it will generate likely future economic benefits.

Based on the examples presented in the article, we can say that there are contradictions between managers' expectations and the requirements of national and international accounting rules in capitalizing development expenditures and their depreciation over the years in which economic benefits are generated.

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