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RESEARCH AND DEVELOPMENT COSTS IN INTERNATIONAL ACCOUNTING AND POLISH ACCOUNTING AND TAX LAW

Introduction

Assets are the resources controlled by the entity, which result from past events and can be reliably measured. They are expected to bring the entity economic benefits in the future. Company assets consists of many categories of very different nature.

Intangible assets are one of the most interesting resources and, at the same time, quite unusual. They do not have physical form and exist only in the contractual sphere, but they are suitable for business use and are expected to bring certain economic benefits to the entity which controls them.

Intangible assets are differently regulated by the Polish accounting law and tax law. Neither of these acts defines this category. They only indicate its components. What is more, the lists differ from each other.

The definition of intangible assets is provided in the International Financial Reporting Standards (IFRS). According to IFRS intangible assets are identifiable non-monetary assets that cannot be seen, touched or physically measured, which are controlled by an economic entity and from which the entity expects to derive economic benefits in the future.

The costs of completed development are an interesting resource included in the intangible assets. The very term which makes costs an element of the entity's property, proves the unique quality of this item. Furthermore, the approach to this asset in IFRS, the Polish law on accounting and the Polish tax law is not uniform.

Research costs are also an interesting issue. They are incurred at the stage prior to the development phase and in general they are charged to expenses. Such an approach is prevalent in Poland under the accounting act and under IFRS, but there are some interesting differences in how this problem is dealt with in the practice of various countries. The costs of research are not regulated by the Polish tax law.

Lack of a uniform approach to research and development costs in the accounting laws of various countries, as well as the differences between the Polish accounting act, IFRS and tax law in this respect make it difficult to prepare and compare financial statements.

The aim of the article is to present how research and development costs are regulated by the accounting law (IFRS, Polish accounting Act, approaches of selected countries), as well as the tax law in Poland (the Legal Persons' Income Tax Act).

In the first part, research and development costs are characterized according to the IFRS and various ways of their presentation at the international level are described. In the second part, the Polish accounting and tax law regulations concerning research and development costs are discussed.

The article was based on the current literature on the subject, IFRS and the Polish legal framework.

Research and development costs according to the International Financial Reporting Standards (IFRS) and in the worldwide practice

IAS 38

IAS 38 deals with research and development costs. According to the definitions it provides, research is original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding. Development is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems, or services prior to the commencement of commercial production or use[1].

In other words, the term research should be understood broadly as innovative and scientific actions undertaken by the company, in order to gain new, economically useful knowledge. The practical implementation of their results is part of the development stage (Figure 1).

According to IAS 38 research includes (par. 56):

1. activities aimed at obtaining new knowledge,
2. the search for, evaluation and final selection of, applications of research findings or other knowledge,
3. the search for materials, devices, products, processes, systems or services alternatives,
4. the formulation, design, evaluation and final selection of possible alternatives for new or improved materials, devices, products, processes, systems or services.

Examples of activities typically included in development are (par. 59):

1. the design, construction and testing of pre-production prototypes and models (prior to the commencement of commercial production or use),
2. the design of tools, jigs, moulds and dies involving new technology,

[1] *MSSF. Międzynarodowe Standardy Sprawozdawczości Finansowej*, Część A, Założenia koncepcyjne i wymogi, SKwP, IFRS Foundation, London 2011, par. 8.

3. the design, construction and operation of a pilot plant that is not of a scale economically feasible for commercial production,
4. the design, construction and testing of a chosen alternative for new or improved materials, devices, products, processes, systems or services[2].

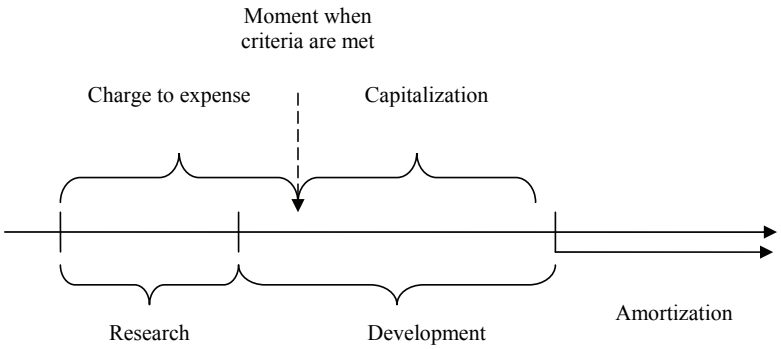

Figure 1. Research vs. development

Source: *Budowanie zdolności instytucjonalnych i prawnych na poziomie krajowym w zakresie sprawozdawczości finansowej i audytu w sektorze prywatnym*, BPP, Swiss Contribution, Ministerstwo Finansów, The World Bank Centre for Financial Reporting Reform, course notes p. 9.5.

In accordance with IAS 38, par. 54, any intangible asset arising from research (or from the research phase of an internal project) should not be recognized in the balance sheet. Expenditure on research (or on the research phase of an internal project) should be recognized as an expense, when it is incurred.

The relevant paragraph of IAS 38 (par. 57) says, that an intangible asset arising from development must be recognized, if and only, if an entity can demonstrate all of the following:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale,
- the intention to complete the intangible asset and use or sell it,
- its ability to use or sell the intangible asset,
- how the intangible asset will generate probable future economic benefits,
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset,
- its ability to measure reliably the expenditure attributable to the intangible asset during its development.

[2] *Ibidem*.

The amortization of the development costs is regulated by the IAS 38, par. 97. The depreciable amount of an intangible asset with limited life should be allocated on the systematic basis over its useful life, which implies using the straight-line method. The IAS notes, however, that the amortization method shall reflect the pattern in which the asset's future economic benefits are expected to be consumed by the entity. If that pattern cannot be determined reliably, the straight-line method should be used.

Different approaches to the presentation of research and development costs across countries

Recognition of research and development costs in the accounting system is problematic, because often the only time you can determine whether or not they will end with success is when work is highly advanced.

The settlement of such costs requires a decision to be made whether they should be capitalized or expensed when incurred. Capitalization of costs means, that they are presented in the balance sheet as assets ("Intangible assets"). The rationale behind this treatment is that these costs are related to the future benefits. The alternative is to record them in the income statement as incurred expenses. Figure 2 presents arguments for and against the capitalization of research and development costs, as well as the accounting principles, that support them.

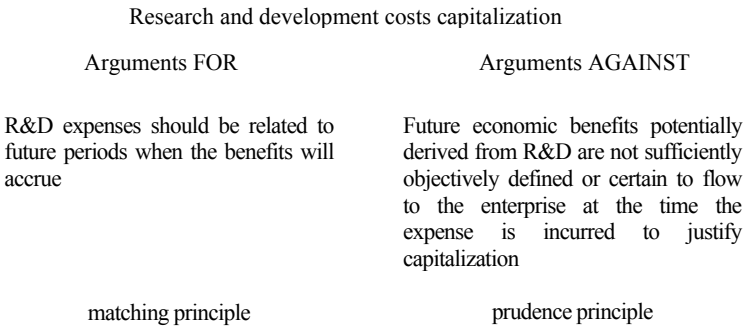

Figure 2. Arguments for and against research and development costs capitalization

Source: author's analysis based on H. Stolowy, M.J. Lebas: *Corporate Financial Reporting. A Global Perspective*, Cengage Learning Business Press, London 2002, p. 305.

The two approaches to research and development costs presented above, are reflected in three methods of recognition which are used in practice[3].

[3] S.M. Saudagaran: *International Accounting. A User Perspective*, Wolters Kluwer business, Chicago 2009, p. 4–113, 4–114, J.J. Glynn, J. Perrin, M.P. Murphy: *Rachunkowość dla menedżerów*, Wydawnictwo Naukowe PWN, Warszawa 2003, p. 224–225.

Method 1. All costs associated with research and development are expensed immediately and presented in the income statement for the period, in accordance with the accepted assumption that their impact on the future reporting periods is the great unknown.

This approach is prevalent in Germany, where the prudence principle is particularly important, and in the USA under US GAAP. However, there are some exceptions to this rule. For example, in the USA, the part of production costs related to computer software intended for sale, lease or other market purposes can be capitalized.

Method 2. If there is a reasonable likelihood, that the company will derive future benefits from the costs of research and development, they can be capitalized and presented in the balance sheet as intangible assets. They can also be amortized over a period, during which the product resulting from them will be sold.

This solution enables a more consistent application of the matching principle. It is used in France, Spain, the Netherlands, Italy and – under certain conditions – in Japan.

Method 3. The method implies a different approach to the costs of research and to the costs of development. Because the research effect is more unpredictable, their costs are expensed when incurred. The development costs incurred directly before the start of production are capitalized, if specified criteria are met. This method is applicable according to the IAS 38, described above, in Poland under the accounting act, in the United Kingdom in accordance with UK GAAP, and in Canada.

There are different accounting approaches to the recognition of research and development costs in various countries (Table 1). Often, although they can be capitalized, they are included in expenses for tax purposes, since they reduce the taxes paid by the company. For example, although the commercial code in Japan allows the capitalization of research and development costs and amortization over a period of 5 years, the practice of their immediate inclusion in costs predominates.

Table 1

The capitalization of research and development costs in selected countries

Ordinal	Country	Research costs	Development costs
1	2	3	4
1.	Australia	No	No
3.	Austria	No	No
5.	Brazil	Yes	Yes
6.	Czech Republic	Yes	Yes
7.	Denmark	No	Yes
8.	Finland	No	Yes
9.	France	Yes	Yes
10.	Spain	Yes	Yes
11.	The Netherlands	Yes	Yes
12.	India	No	No

1	2	3	4
13.	Japan	Yes	Yes
14.	Canada	No	Yes
15.	South Korea	Yes	Yes
16.	Mexico	No	No
17.	Germany	No	No
18.	New Zealand	No	Yes
20.	Switzerland	No	Yes
21.	Sweden	No	Yes
22.	USA	No	No
23.	United Kingdom	No	Yes
24.	Italy	Yes	Yes

Source: author's analysis based on M. Zafar Iqbal: *International Accounting. A Global Perspective,* South-Western/Thomson Learning, New York 2002, p. 148; P. Walton, A. Haller, B. Rafournier: *International Accounting*, Thomson Learning, London 2003, p. 214; D.S. Choi, G.K. Meek: *International Accounting*, Pearson Education, Inc., New Jersey 2011, p. 59, 64, 72, 91.

Research and development costs in the Polish accounting and tax law

The accounting act and research and development costs.

In accordance with the accounting act (art. 3.1.14) intangible assets also include acquired goodwill and, under certain conditions, the costs of completed development[4]. The legislator has not provided in the regulation the definition of development costs or research costs, but put forward conditions for the treatment of development costs as intangible assets. They are as follows (art. 33.2):

- it must be the cost of completed development carried out by the entity itself to fulfill its own needs, incurred prior to the production or use of technology,
- the product or technology must be firmly established, and their development costs must be reliably determined,
- the technical suitability of the product or technology has been affirmed and adequately documented and on this basis the entity has decided to manufacture these products or to use the technology,
- development costs must be covered according to projections by the proceeds from the sale of these products or the use of the technology.

Costs incurred in the course of the development phase are posted as prepaid expenses. After development is completed, the sum of the costs is posted according to the final effect[5]:

[4] Ustawa z dnia 29 września 1994 r. o rachunkowości, tekst ujednolicony, DzU 2009 nr 152, poz. 1223.

[5] R. Kamiński: *Koszty prac badawczych i rozwojowych w księgach rachunkowych*, „Serwis Finansowo-Księgowy" 2005, nr 25, p. 54.

– if the development phase is completed successfully and the conditions mentioned in art. 33.2 are met, its costs will increase the asset account „Intangible assets" with a debit (more precisely „Costs of completed work and development"),
– in the absence of economic effect of the development, its costs will increase the account „Other operating expenses" with a debit.

All of the research costs are charged to other operating expenses. In accordance with the Act on accounting (article 33.3), the period of development costs amortization may not exceed 5 years.

Although the treatment of research and development costs in the accounting act and IFRS is conceptually consistent, there are some differences[6]:

– in accordance with the accounting act, the effects of development can be designated exclusively for the entity's own needs, in accordance with IFRS – for its own use or sale,
– according to accounting act the development costs may be capitalized upon their completion, according to the IFRS it might be done earlier
– accounting act, in contrast to the IFRS, specifies the maximum period of the development costs amortization (5 years).

Development costs in terms of tax law

Tax law does not provide the definition of intangible assets. It only presents the list of its categories which can be amortized. The list includes assets bought by the economic entity and others, among which development costs can be found.

Tax law does not present the definition of development costs, but specifies the conditions which have to be met in order to amortize them. Under these conditions, only the costs of development which ended successfully and can be used in entities' operations may be capitalized[7]. Tax law presents also a number of additional conditions, which these costs must meet to be subjected to amortization. They are as follows:

– product or technology are strictly defined, and their development costs are reliably identified,
– technical suitability of the product or technology is sufficiently documented, and on the basis of this documentation it has been decided to manufacture products or to use the technology,
– according to the documentation the development costs will be covered by the expected proceeds from the sale of these products or the use of this technology[8].

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[6] E. Radawiecka: *Koszty prac badawczych i rozwojowych w prawie bilansowym oraz Międzynarodowych Standardach Rachunkowości*, http://www.ieiz.tu.koszalin.pl/dokumenty/wydawnictwo/zeszyty/02/21.pdf

[7] Art. 16 b, ust. 2 ustawy z 5 lutego 1992 r. o podatku dochodowym od osób prawnych, DzU nr 54, poz. 654 z 2000 r. ze zm.

[8] *Ibidem*, art. 16 b, ust 3 lit. a-c.

The above approach is no different from the one presented in the accounting law. If the development phase is not completed successfully, then in accordance with the tax law its costs should be considered as the costs of obtaining revenues in the year the development phase was completed[9].

Incurred development costs that meet the above conditions can be amortized. There are some restrictions concerning the depreciation period. According to the tax law this period must not be less than 12 months, while in accordance with the accounting act it is a period of not more than 5 years. There is therefore the possibility of such selection of a period of depreciation that is in line with the two legal acts. In accordance with the tax law the plan of amortization must be established before amortization begins.

What is more, in accordance with the general principle of intangible assets amortization, it can be amortized if their value exceeds 3500 PLN. When it is lower, according to the tax law, management can decide to amortize them in spite of the lower value or to include the whole amount in costs.

The valuation of the development costs in the tax law does not deviate from the rules set out in the law on accounting. Because this is a component of intangible assets produced by the entity itself, it is valued at cost.

It should also be noted that the tax law does not provide for the possibility of determining the present value of each component of intangible assets, and thus it does not provide for impairment write-offs either.

Fiscal tax law does not regulate the research costs.

Conclusion

Research and development costs are of great importance nowadays because of the technical development and the considerable height of this type of costs in the overall expenses of many economic entities. Especially in those which operate in a competitive environment, as they are a prerequisite for the production of new or improved products or services, and thus prejudge the position of the company on the market and its further development.

As presented in the article, research and development costs are precisely defined in IAS 38. In Polish law on accounting and taxes they are not defined. What is more, the Polish law focuses on the costs of completed development and does not give much attention to research activities.

Polish legal regulations in regard to the completed development costs, present conditions for their capitalization (law on accounting) or amortization (tax law) and the main differences concern matters related to their amortization.

In spite of the lack of research costs definition in the accounting act its regulations are consistent with the IFRS – they cannot be capitalized, but must be included in the cost of

[9] Art. 15 ust. 4a.

the current period. However, it is noted that in many countries under the existing regime of accounting their capitalization is permissible. Polish tax law does not regulate this issue.

By presenting in the article the diversity of perspectives of the costs of research and its development in Poland, the authors express the hope that in the future they will be removed or at least reduced.

Literature

Choi D.S., Meek G.K.: *International Accounting*, Pearson Education, Inc., New Jersey 2011.

Glynn J.J., Perrin J, Murphy M.P.: *Rachunkowość dla menedżerów*, Wydawnictwo Naukowe PWN, Warszawa 2003.

Kamiński R.: *Koszty prac badawczych i rozwojowych w księgach rachunkowych*, „Serwis Finansowo-Księgowy" 2005, nr 25.

MSSF, MSR nr 38 Wartości niematerialne i prawne, SKwP, Warszawa 2004.

Materiały ze szkolenia nt. *Budowanie zdolności instytucjonalnych i prawnych na poziomie krajowym w zakresie sprawozdawczości finansowej i audytu w sektorze prywatnym*, BPP, Swiss Contribution, Ministerstwo Finansów, The World Bank Centre for Financial Reporting Reform.

Stolowy H., Lebas M.J.: *Corporate Financial Reporting. A Global Perspective*, Cengage Learning Business Press, London 2002.

Saudagaran S.M.: *International Accounting. A User Perspective*, Wolters Kluwer business, Chicago 2009.

Ustawa z 5 lutego 1992 r. o podatku dochodowym od osób prawnych, DzU 2000, nr 54, poz. 654 ze zm.

Ustawa z dnia 29 września 1994 r. o rachunkowości, t.j. DzU 2009, nr 152, poz. 1223.

Walton P., Haller A., Rafournier B.: *International Accounting*, Thomson Learning, London 2003.

Zafar Iqbal M.: *International Accounting. A Global Perspective,* South-Western / Thomson Learning, New York 2002.

Radawiecka E.: *Koszty prac badawczych i rozwojowych w prawie bilansowym oraz Międzynarodowych Standardach Rachunkowości*, http://www.ieiz.tu.koszalin.pl/dokumenty/wydawnictwo/zeszyty/02/21.pdf

MSSF. Międzynarodowe Standardy Sprawozdawczości Finansowej, Część A, *Założenia koncepcyjne i wymogi*, SKwP, IFRS Foundation, London 2011, par. 8.

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Summary

Research and development is a process intended to create new or improved product, service or technology, that can provide a competitive advantage at the market. Because this process is risky and complex, it must be subjected to accounting and tax regulations.

The article concerns the problem of different approaches to the research and development costs in the accounting and tax law. The regulations of the IFRS, Polish accounting act and the Legal Persons' Income Tax Act are presented together with three methods of their recognition, existing in the practice of entities worldwide.

KOSZTY BADAŃ ROZWOJOWYCH W MIĘDZYNARODOWEJ I POLSKIEJ RACHUNKOWOŚCI I PRAWIE PODATKOWYM

Streszczenie

Artykuł porusza problematykę odmiennego podejścia do kosztów prac badawczych w rachunkowości i polskim systemie podatkowym. W części dotyczącej ujęcia tej kategorii w rachunkowości, zaprezentowano stanowisko uregulowane w MSR oraz w polskiej ustawie o rachunkowości wraz z metodami rozpoznawania tych kosztów w praktyce.