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FORMAL AND LEGAL CONDITIONS FOR RESEARCH AND DEVELOPMENT ACTIVITY IN POLAND FOR THE NEEDS OF ENTERPRISE MANAGEMENT

Małgorzata Kuraś[1], Marcin Stępień[2], Izabela Turek[3]
PhD, lecturer[1], PhD, lecturer[2], PhD, lecturer[3]
Czestochowa University of Technology, Faculty of Management

INTRODUCTION

In the current economic environment, characterized by high volatility, an inherent phenomenon is introducing of new products to the market. New or significantly improved products are innovations that are preceded by the conducting of previous multi-activities. Managers of companies see the need of innovation activity, which has become one of the elements of market competition. In turn, innovative activities are the background for undertaking research and development activities. General understanding of the research and development activity is presented in a number of studies, however, narrowing the field of considerations, it appears that the needs of different areas of interpretation of this term can be varied. The purpose of this article is to highlight the main points related to the terminology of entrepreneurial activity in the field of research and development, taking into account the conditions of Polish legal requirements and statistics. In managing the company, in addition to the management of rational decision-making regarding research and development activities, the formal and legal requirements associated with it should be taken into account . Records of the activities carried out in this field requires knowledge of the relevant concepts and their interpretation, as well as having to demonstrate our activities in the reports to the statistical office, or for the current collection of accounting information and financial reporting.

COSTS OF COMPLETED DEVELOPMENT AS AN INTANGIBLE ASSET

Research and development include systematically conducted creative work in order to increase the stock of knowledge, and use them to create its new applications. Understood as "... an individual, unique action to achieve better outcomes as a result of their implementation, are the own product of the enterprise"[20, p. 113] and are seen as its key competences. Intellectual property created within the broad research and development is reflected in the balance sheet as intangible assets. However, not all the elements covered by these works may be included in them.
Intangible assets are referred to as enterprise intangible assets and presented in the balance sheet of A.I. According to the Accounting Act, these values are "... acquired by the entity, included in fixed assets, property rights suitable for business use, with the expected economic life longer than one year, intended for use by the company" [21, art.3, paragraph 1, pkt. 14]. Among them, the legislator singled copyrights property, rights, licenses, concessions, rights to inventions, patents, trademarks, utility and decorative designs, know-how and acquired goodwill and development costs [21, art.3, paragraph 1, pkt. 14].

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Clarifying the concept of the cost of completed development work requires delimitation and definition of research and development work.
According to the Act on the principles of science financing, development is understood as the acquiring, combining, shaping and using the existing knowledge and skills in the fields of science, technology and business, and other knowledge and skills to plan production and to create and design new, altered or improved products, processes or services. Development works identified this way can be considered as a component of intangible assets, if the specific requirements included in the Accounting Act are taken into account. According to them, costs of research and development conducted by the unit may be classified as intangible assets if they are held for their own needs and have been incurred prior to the production or use of technology. Moreover, as the act indicates, they must comply with the following conditions:

- "product or production technology are strictly determined, and the corresponding development costs are reliably identified;
- the technical suitability of the product or technology has been established and appropriately documented, and on this basis, the unit decided to manufacture these products or the use of technology;
- the development costs will be covered, according to projections, with the revenues from the sale of these products or the use of technology" [21, art. 33, paragraph 2].

Polish balance sheet law does not list exhaustively the type of work that can be assigned to development work. It does not also clarify the concept of research work or the way they are defined. In this regard, there are also no regulations contained in the National Accounting Standards. Helpful thus become international regulations included in the International Accounting Standard No. 38, "Intangible Assets". This document clearly distinguishes and defines the concept of development and research. In general, research work undertaken primarily to acquire new knowledge and skills both, without any direct practical application, and to apply them in practice, among others, to develop new products, processes and services. IAS 38 defines research as an innovative and planned search for solutions undertaken with the intention to acquire new scientific knowledge and technical support. It shall give specific examples of such works, including among them efforts to acquire new knowledge, search, and final evaluation and selection of the use of research results or other knowledge, the search for alternative materials, devices, products, processes, systems and services, as well as formulation, design, evaluation and final selection of new or improved materials, devices, products, processes, systems or services [23, paragraph 8 and 56]. Unfortunately, the standard clearly indicates that expenditures for research or implementation stage of the research process are expensed as incurred, because at this stage, an individual can not prove the existence of an intangible asset, which in the future will be carried with it economic benefits. Moreover, in case of impossibility or difficulty in distinguishing which of the executed works are works of research, and which are the development work expenditures not incurred are treated as those for the research.

Development work is mainly the use of research results. IAS 38 defines development as the practical application of research findings or other knowledge achievements in the planning or design of new or substantially improved materials, devices, products, processes, systems or services that take place prior to the start of series production or use [23, paragraph 8]. As the development phase is considered to be more advanced than the research, the expenditures incurred can be attributed to assets. The possibility of activating development work is limited set of standard terms and conditions under which the company must prove that [23, paragraph 57]:

- from a technical point of view, it is possible to complete the asset so that it will be available for use or sale;
- has the intention to complete this component, as well as the ability to use or sell it;
- there is a market for products resulting from the use of this ingredient or otherwise define its usefulness;
- it is possible to reliably establish and assign to a given asset expenditures incurred during its development.

According to the standard discussed, development include: the design, construction and testing of prototypes and models and chosen alternative for new or improved materials, devices, products, processes, systems and services; design of tools, jigs, molds and dies using new technology, as well as the design, construction and operation of a pilot [23, paragraph 59]. The main differences in terms of research and development in Polish and international accounting standards are showed on Table 1.

Table 1
The main differences in terms of research and development
in Polish and international accounting standards

Status	**Accounting Act**	**The International Accounting Standards**
Subject of regulation	The cost of completed development work	Costs of research and development costs
The method of recognition of expenditures on research	The lack of regulation - the application of IAS	As the costs of the period
The moment of recognition of development costs as an intangible asset	After completion of the work and finding a positive result	In the course of the work, when criteria for capitalization are met
Valuation balance sheet of development work on its own	reduced of amortization and due to the of impairment loss	At cost less accumulated depreciation due to permanent impairment; acceptable but unlikely alternative approach
The period of amortization of development costs	For a period of economic usefulness of the results of research and development or for no longer than 5 years	The period of useful economic life of an asset

Source: own studies based on: [1, p.28.; 19 p. 192.]

The differences clearly show that in the Polish accounting law in general there is no concept of research, so the unit by elimination identifies such actions - if it can not be classified as a data work meeting the criteria of development work, it is qualified as research. It is also possible to appeal to the provisions of IAS 38, which distinguishes between research and development. Consequently, the identification of this kind of action generates a way of reference incurred no expenses in the financial statements.

RESEARCH AND DEVELOPMENT AS PART OF THE ENTERPRISE INNOVATION

Research and development activity of a company is set also in innovative activity [More about innovation activity in: 11, 17,18] . "The term innovation is understood as the implementation of a new or significantly improved product (product, service) or process, a new organizational method, or a new marketing method in business practice, workplace organization or in relation with the environment. New or significantly improved product is implemented when it is introduced in the market. New processes, organizational methods and marketing methods are implemented when they start their actual use in the company" [6, p.13].

"The source of inspiration for the innovation process is the knowledge, which generally is a structured collection of information resources produced and accumulated during the development of society. In contemporary society we can distinguish at least two types of knowledge resource: the knowledge produced by the scientific activity and a product of science and practical knowledge (colloquial), which is the result of the experience of production and life of society. Knowledge is in the process of R&D developed and multiplied, which in turn is the basis of transformation of knowledge into practical innovations" [13, p. 8].

When classifying innovation, taking into account the effects and severity distinguished are:

- activities successfully completed, resulting in the introduction of innovations, however, it does not necessarily have to be associated with commercial success,
- innovative activity in progress,
- discontinued operations prior to the implementation of innovations.

This approach is similar to the recognition of development work in accounting in Polish accounting law, with the proviso that to be included in the intangible assets they must be completed and bring measurable effects unit, and if they are in progress that should be included into the cost other operating activities.

A substantial indicator of the importance of research and development activities is the share of expenditure incurred on it in total expenditure on innovative activities. Statement presented in Table 2, covering the period 2006-2014, allows to highlight the importance of research and development in the development of the company and at the same time the market.

Table 2
Percentage of expenditure on research and development expenditures in on innovation in general in years 2006-2014 in Poland (current prices)

Year	Type of activities	Expenditures on innovation in mln zl	Expenditures on R&D in mln zl	Percentage R&D in innovation %
2006	Industrial enterprises	17814,2	1592,8	8,9
	Services	8268,4	925,4	11,2
2008	Industrial enterprises	24684,0	1999,4	8,1
	Services	10664,8	789,2	7,4
2009	Industrial enterprises	22652,1	2242,6	9,9
	Services	8260,1	751,7	9,1
2010	Industrial enterprises	23757,8	3349,8	14,1
	Services	10790,3	1348,8	12,5
2011	Industrial enterprises	20821,1	2761,1	13,3
	Services	10979,1	1489,5	13,6
2012	Industrial enterprises	21535,4	3675,4	17,1
	Services	15145,4	6068,3	40,0
2013	Industrial enterprises	20958,9	4039,4	19,3
	Services	11980,9	2749,6	22,9
2014	Industrial enterprises	24621,6	4562,7	18,5
	Services	12995,2	2947,3	22,7

Source: Own studies based on: [2], [3], [4], [5], [6], [7], [8], [9], [10], [14].

Analyzing data presented in Table 2, an increase in the importance of research and development in innovative activities is noted, which is reflecteded in the increasing percentage of spending on research and development in total expenditure on innovative activities. Considering this issue, taking into account activity in industry and the service sector, the trends are similar in percentage terms. However, taking into account the valuable observed that investment in innovation in individual years in the service activities are usually about two times lower than in the industrial sector. These disparities are due to the specific nature of the quoted sectors and are not associated with lesser or greater desire for innovation.

INTERPRETATION OF RESEARCH AND DEVELOPMENT FOR THE PURPOSE OF STATISTICAL RESEARCH

The phenomenon of research and development work is tested inter alia for public statistics. The data obtained from subjects are somehow targeted at compliance with agreed definitions and concepts. In the studies of the Central Statistical Office, relating to the activities of innovative enterprises in Poland, for research and development (R&D) considered to be those that are associated with the development of new or significantly improved products (product innovation) and processes (process innovation) performed by our own developmental or acquired from other units [10].

Broader and more insightful systematizing of the subject of research and development contained in the publications of statistics on science and technology, in which the

main focus is on the activity of the entities in the field of research and development, which is defined as "systematically conducted creative work, undertaken in order to increase resource knowledge, including knowledge of man, culture and society, as well as for discovering new uses for this knowledge. It includes three types of research, namely, basic research, applied (including industrial) and development. R&D differs from other activities visible element of novelty and the elimination of the uncertainty of scientific and/or technical support, or solution to the problem not arising obviously from prior art" [16, p. 14].

It should be noted that the definition distinguishes between the concept of research and development as separate categories. Similarly recognized is the Accounting Act mentioned before, which describes the conditions to qualify for the assets of the unit costs of completed development work.

Walking towards the systematization of concepts related to research and development activities for basic research is considered experimental and theoretical work undertaken primarily to acquire or expand their knowledge about the causes of phenomena and facts, undirected, in principle, to obtain specific practical applications. Basic research can be divided into the so-called basic research clean and targeted (oriented).

Basic "pure" research are conducted with the aim of advancement of knowledge, without seeking for their practical application, while basic research "targeted" are conducted in order to obtain a broad knowledge base that will be able to provide a basis for solving existing or potential problems.

Applied research (including industrial) - as the name suggests - are the research work undertaken to acquire new knowledge for concrete practical applications. They consist either on the search for possible practical applications for the results of basic research, or the search for new solutions to achieve a preconceived practical purposes.

Experimental development are understood as structural works, technological-design and experimental involving the use of existing knowledge gained from research work or as a result of practical experience, to develop new or significantly improve existing materials, devices, products, processes, systems and services, including the preparation of prototypes of experimental and pilot installations. This category generally does not occur in the field of humanities. Development should not be confused with the implementation works, beyond the scope of R & D activities, related in particular to the implementation of the technical documentation, instrumentation, test installation, a test series of new product, carrying out amendments after tests, etc.

An important determinant of the importance of research and development is the structure of expenditures incurred on them taking into consideration distribution into basic research, applied research and experimental development, which is presented in Table 3.

Table 3
The structure of currant intramural
expenditures on R&D by type of R&D activity

Year	Percentage of type of R&D activity		
	Basic research %	**Applied research %**	**Experimental development %**
2010	39,7	20,5	39,8
2011	36,4	24,0	39,6
2012	36,7	21,0	42,3
2013	34,3	21,6	44,1
2014	32,3	20,7	47,0

Source: Own studies based on: [16, p. 60].

In the analyzed period, covering 2010-2014, a dominant share of development expenditure is observed. It should be emphasized that in the coming years this share is increasing. The highest share of expenditure on research and development occurs in the corporate sector, and according to statistical studies, is almost 80%.

It is noteworthy that shown in the statistics of public expenditures on research and development are not necessarily in a form to be recognized in entities of accounting, because legal fortifications resulting from the Accounting Act cause the division of labor on research and development and can generate their different proportions.

SUMMARY

The conducted considerations reveal that research and development are part of the innovative activity of enterprises. In various areas of interpretation of the scope of the concept it is diverse, so depending on the context, capacity of the term is varied. In Poland, the formal guidelines on research and development occur in the Accounting Act and the International Accounting Standard No. 38, "Intangible Assets". For the purposes of public statistics data is collected from subjects on their research and development activities, but depending on the type of studies the scope of such information may vary.

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