

Managing R&D Activities in IT Firms: Empirical Evidence from Companies Listed on the Warsaw Stock Exchange*

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*Presented at the 47th IBIMA International Conference, 29-30 June 2026, Madrid, Spain

Abstract

The purpose of this article is to identify methods of managing research and development (R&D) activities in IT companies listed on the Warsaw Stock Exchange in Poland and to assess the extent to which the organizational solutions and tools used support the quality of financial reporting. The study addresses two questions: what tools are used for planning, organizing, and controlling R&D activities, and whether cooperation between R&D and financial accounting departments promotes reliable disclosure of information. The theoretical framework draws on literature on disclosures related to R&D activities, innovation management, and the principles of recognizing development costs under IAS 38. The study employed a literature review and a purposefully selected cross-sectional survey conducted in the second half of 2024 and in 2025 among individuals responsible for R&D management or reporting in IT companies.

The results indicate that R&D is an important management area for 95.45% of respondents, and 90.91% of companies use tools to support this process. A majority of respondents report good communication with financial accounting departments, and most companies use R&D data when preparing financial statements. The originality of this study lies in linking management practices, technical documentation, and interdepartmental communication to the reliability of financial reporting in high-tech companies. The practical dimension includes identifying solutions useful for R&D managers, controllers, and accountants, while the theoretical dimension expands the discussion on the organizational determinants of disclosures in corporate accounting. A limitation of the study is the sectoral, national, and declarative nature of the sample.

Keywords: R&D activities, Financial Reporting, Corporate Governance, research and development management

Introduction

Global competition, the expansion of areas of cooperation, and the concentration of ownership and capital are processes taking place in the business environment as a result of globalization. The changes taking place in the economy necessitate the search for new areas related to business operations, on the basis of which entities could build a competitive advantage (Szymański, 2017, 104). One such area is research and development, which in recent years has become a value creator for many organizations and economic sectors. These are primarily industries within the so-called “*high-tech industry*” sector. One of the industries that relies on the latest technical and technological advancements is the IT sector. It uses research and development to create IT systems, computer software, and IT hardware. Enterprises in this industry use research and development to achieve their desired market position and build a competitive advantage.

From an accounting perspective, the focus of research is on identifying and classifying research and development work under the appropriate line item in the financial statements, as well as on reliable measurement and presentation in accordance with applicable accounting principles and management accounting tools.

The main aim of this publication is to attempt to answer the question of how companies listed on the Warsaw Stock Exchange in Poland from the IT sector manage their research and development activities and what tools they use for this purpose. The degree of cooperation between the units responsible for managing research and development activities and the financial accounting department in the context of preparing financial statements was also analyzed. The article presents the essence of reporting information on research and development activities, as well as key issues related to the management of research and development activities. The research section analyzes the methods of managing research and development activities, including an examination of the tools used in managing development work. It assesses the scope and form of documentation for research and development activities and identifies organizational solutions regarding responsibility for managing research and development activities. Additionally, the level of communication between the units managing research and development activities and the financial accounting department was determined.

The author employed a combination of literature review and survey research. The survey respondents were individuals responsible for reporting on research and development activities and managing research and development activities in the surveyed IT sector companies. The main rationale for selecting this sector for the study was the scale and intensity of research and development work, as well as its affiliation with high-tech industries, which are characterized by a significant level of innovation and extensive R&D activities.

The Essence of Reporting on Research and Development Activities

The issue of reporting information on research and development activities is an important topic for both investors and financial statement preparers. The disclosed information helps build and/or maintain a company's competitive advantage by highlighting new products and innovations that are not fully reflected in financial metrics (Chan et al, 2001, 2431–2456). Disclosures regarding ongoing research and development activities can be particularly useful for analysts and other market participants planning to establish a partnership with a given entity (Jones, 2007, 489–522). They enable the building of market position by signaling advantages and deterring competitors, and their primary goal is to reduce the cost of capital or reduce agency costs. Verrecchia (2001, 97–130) views voluntary disclosure as a substitute for regulation that mitigates information asymmetry. On the other hand, disclosures related to research and development involve significant risk—especially if they concern confidential information that, if exploited by competitors, could benefit them, e.g., by enabling the development of new technology. Key instruments in investment decisions for high-tech industries are forecasts regarding intangible assets and their impact on the income statement and balance sheet (Smith and Cordina, 2014, 309–322). This does not mean, however, that historical data is completely disregarded in the process of making such economic decisions. Investors are increasingly using these elements of financial statements not to verify an entity's financial and asset position, but to determine whether the entity correctly recognizes and presents its assets and sources of financing (Jones, 2007, 489–522). They also gain value during later stages of ongoing research and development. In interviews conducted by Smith and Cordin (2014, 309–322), respondents indicated that financial statements cannot replace descriptive documents or meetings with entrepreneurs during which the essence of ongoing research and development work is presented and discussed. Therefore, it should be particularly emphasized that the balance sheet and income statement should not be relegated to the background and treated as less important in the era of integrated reporting, where the emphasis is increasingly placed on descriptive elements.

From the perspective of corporate reporting, the primary task of the accounting system is to answer the following questions: what constitutes research and development in light of the definitions and classification criteria specific to accounting; how expenditures on development work and research work should be recognized; to which category the completed work should be assigned, and where in the organization's financial statements it should be presented (Gabrusewicz, 2016, 116). The accounting system allows for reflecting the stage of completion of a given project and its impact on the entity's financial position as presented in the financial statements.

The correct valuation and presentation of the financial effects of research and development work should be based on the provisions of balance sheet law and the accounting policy adopted by the entity. In order to reliably disclose information about research and development work, it is necessary to carefully reflect the economic events that occurred as a result of its implementation. This approach minimizes the risk of distorting the financial position, which could arise from the inaccurate recognition of the financial effects of research and development activities. The recognition of research and development activities under international accounting standards is governed by International Accounting Standard No. 38, "Intangible Assets". It defines development work "as the practical application of research findings or other knowledge in the planning or design of new or significantly improved materials, equipment, products, processes, systems, or services, which takes place prior to the commencement of mass production or use" (IFRS 2022, IAS 38, para. 8). Development work arises from the application of research

work, which is “an innovative and planned search for solutions undertaken with the intent to acquire and assimilate new scientific and technical knowledge” (IFRS 2022, IAS 38, para. 8)¹.

International Financial Reporting Standards require the identification of criteria allowing for the capitalization of costs incurred for development work, but do not specify which of these an entity is required to disclose in its financial statements. The only mandatory disclosure is the total amount of expenditures incurred during the period for research and development recognized in the income statement. Other mandatory disclosures relate to the “intangible assets” subgroup, without the need to separately identify development work within it.

The proper measurement and presentation of the financial effects of research and development activities should be based on the provisions of accounting law and the entity’s adopted accounting policies. It should be emphasized, however, that the information contained in the documentation provided by the organizational units responsible for managing this work is also of key importance for the reliability and credibility of the presented data. It is this documentation that enables the proper identification of research and development stages, the assessment of compliance with cost capitalization criteria, and ensures consistency between accounting recognition and the actual course of innovation processes within the enterprise.

Management of research and development activities

R&D reporting involves not only reporting outside the organization (e.g., in the form of financial statements) but also serves as a management tool used within the entity. Appropriate internal reports, such as a development project implementation sheet or a budget execution report for selected research and development activities, serve a control and motivational function within the organization for its managers and employees. This is particularly true in organizations that create value and generate profits through investments in intangible assets, such as companies in the IT sector. Properly planned research and development activities lead to the creation of new products and processes, the reduction of certain costs, and ultimately to improved financial results for the company and the attainment of a competitive advantage. The ability to benefit from technological development requires a company to understand and effectively utilize it, which involves conducting a continuous and deliberate process of managing research and development activities. The optimal solution is a management system that integrates R&D decisions with the company’s strategic decisions (Trott, 2005, 262). The corporate strategy planning process involves a systematic examination of a wide range of factors. Its primary task is to define the company’s objectives and the means to achieve them. It serves as a criterion against which alternative courses of action and the results obtained can be evaluated (Urbanek, 2014, 246). A company’s decision to invest in research and development involves developing a system and procedures that, through proper management, increase the likelihood of success. Management of the prepared project takes place at the general level of innovation project management, where development work constitutes a part of it, and at the detailed level, where only the R&D project is relevant and appropriately selected management tools are used (Szopik-Depczyńska and Depczyński, 2011, 160). Management tools that enable the execution of tasks related to planning, organizing, and controlling research and development work include, among others:

- an individual research and development budget,
- cost estimate for ongoing research and development work,
- a project charter for specific research and development work,
- balanced scorecard,
- Technology Readiness Level (TRL).

An individual R&D budget is a tool based on estimating revenues and costs or the costs of R&D activities alone. The budget involves quantifying the financial plan for R&D activities and consists of a statement of project revenues and costs or, in some cases, revenues and expenditures related to the planned work (Nicolae and Anca , 2010, 919-920).

The second tool, **the cost estimate for ongoing research and development activities**, involves only a summary of planned costs. Project cost planning methods refer to the approach used in estimating individual budget items (Łada, 2007, 38).

¹ According to the standard, development activities is recognized as an intangible asset when: it is probable that the entity will obtain future economic benefits attributable to the asset, and the acquisition price or production cost of the asset can be reliably determined (IFRS 2022, IAS 38, para. 21) and meet the capitalization criteria (see IFRS 2022, IAS 38, para. 57). Otherwise, just like research activities, they will constitute an expense of the period (IFRS 2022, IAS 38, para. 43 a-b).

The R&D project charter is the primary document of the project proposal, which includes a discussion of the project's overall objective, a substantive description of sub-tasks, a schedule of planned work, and a project cost estimate. It serves as a summary of the planned work and anticipated outcomes. It is treated as a project management tool. It identifies the project supervisors, explains the specifics of the activities, and outlines the key success criteria for the project. The project charter includes a brief description of its vision and objectives. The prepared document should be concise, with supplementary information included in the appendices (Stabryła, 2006, 46-48).

The balanced scorecard is a coordinated set of objectives and performance metrics that provides senior managers with a quick and comprehensive overview of the company's operations and enables a multifaceted assessment of its performance. It serves as an alternative to traditional measurement systems, describing and explaining what should be measured within a company to best assess its effectiveness in executing strategy (Kuchta and Ryńca, 2007, 94) while considering four perspectives: financial, customer, internal processes, and innovation (development) and learning. A balanced scorecard can serve as a tool for dialogue between a company and its stakeholders. Information from the scorecard for R&D made available to investors provides insights into ongoing projects and products in the development phase, demonstrating the company's capacity and readiness to undertake innovative activities (Dyczkowska, 2019, 145-147).

The **Technology Readiness Level** is a tool for managing research and development activities using nine levels of technological readiness, where the first level describes the lowest stage of a project's technological advancement, while the ninth level indicates its full maturity and readiness for implementation. Based on this framework, it is possible to determine the stage of research and development activities and classify it as either research or development. Activities qualifying for levels 7-9 are considered development activities (Bhattacharya et al, 2022, 112-124).

Management of Research and Development Activities in IT Sector Companies – Results of Research

The main objective of the study was to assess how companies listed on the Warsaw Stock Exchange in the IT sector manage their R&D activities² and to identify the organizational tools and solutions used to support the planning, organization, and control of research, with particular emphasis on their significance for the quality of information disclosed in financial reporting. An assessment was also made of the level of cooperation and communication between units responsible for research and development activities and the financial accounting department, in the context of preparing financial statements. The research tool used was a survey questionnaire, with respondents being the individuals responsible for reporting on research and development activities and managing research and development activities in the surveyed companies. The selection of the respondent sample was purposive. The survey was prepared using the "Webankieta" program and distributed online in the second half of 2024 and in 2025. Surveys were sent via:

- direct email messages,
- LinkedIn,
- the Facebook platform.

Initially, the surveys were sent via direct email messages. These were sent to individuals whose names appeared on the companies' official websites as those responsible for the company's financial reporting or managing its research and development activities. Additionally, the survey—with a request to distribute it among employees—was sent to the company's general email address. The next step was to locate the surveyed companies on LinkedIn, and subsequently the individuals working there. Based on available information about their positions within the company, the author selected appropriate respondents and sent them a request to complete the survey. Using personal data about employees from the selected company, requests to complete the survey were sent to the same individuals via Facebook. A total of 365 messages were sent requesting completion of the survey (including reminder messages). A total of 44 completed surveys were received from:

- employees of the finance and accounting department (financial accounting department): 40.91% of respondents,

² The list of companies included in the IT sector was finalized on May 1, 2024. These companies are: Asseco Poland, Asseco Business Solutions, Asseco South Eastern Europe, Ailleron, Atende, Betacom, Comp, DataWalk, Digitree Group, Fabrity Holding, Grupa Pracuj, IFIRMA, LSI Software, NTT System, OPTeam, Passus, Shoper, Silvair, Spyrosoft, Text (LiveChat Software), Vercom, Wasko.

- an employee of the controlling department (management accounting department): 27.27% of respondents,
- Other positions: 31.82% of respondents, including:
 - Investor Relations Director - 9.09%
 - Senior IT Project Manager - 4.55%
 - R&D employee - 4.55%
 - Project Manager - 4.55%
 - IT Project Lead - 4.55%
 - Chief Accountant/CFO – 4.55% of respondents,
- Manager (Director) of the Controlling Department (Management Accounting Department) – no respondents.

The first part of the survey focused on assessing the importance of materiality and the methods of managing research and development activities in the surveyed entities. In this section of the questionnaire, a five-point Likert scale was used, allowing respondents to express their level of agreement with the presented statements. The scale included the following response options:

- [1] – I strongly disagree;
- [2] – I somewhat disagree;
- [3] – neither agree nor disagree;
- [4] – I somewhat agree;
- [5] – strongly agree.

The table below presents the questions asked in this area (see Table 1).

Table 1: Questions and answers regarding research and development management

Answers:	1	2	3	4	5
Questions:					
Research and development activities is an important area of your company's management.	0.00%	4.55%	0.00%	9.09%	86.36%
Your company uses management tools that enable planning, organizing, and controlling research and development activities.	0.00%	9.09%	0.00%	18.18%	72.73%
The research and development activities carried out at your company (including its stages and the expenses incurred) is strictly defined and specified in separate documentation for this activities.	4.55%	4.55%	4.55%	18.18%	68.18%

Source: own analysis

Respondents agreed with the statement (95.45% of responses) that research and development constitutes a significant area of their company's management. Only 4.55% indicated that this is not an important area of management.

90.91% of responses indicated that the company uses management tools that allow for the planning, organization, and control of research and development activities. 9.09% of respondents disagreed with this statement.

Regarding the statement "Research and development work carried out in your company (including its stages and expenditures) is strictly defined and specified in separate documentation for this work," 86.36% of respondents answered that they strongly agree or somewhat agree with the above statement. 9.1% of respondents disagree with this statement.

The second part of the survey concerned the management tools used for the purposes of identifying, planning, organizing, and controlling research and development activities. In the first question for this stage of the study, the author examined how respondents identify research and development activities in their business entities. The possible answers to this question, along with the results, are presented in Table 2.

Table 2: Responses to the question: How does your company identify research and development activities?

Answers:	%
Based on individual technical documentation maintained for specific research and development activities carried out by the company, e.g., a research and development project card	77.27%
Based on generally accepted principles defined for all research and development activities carried out by the company	22.73%
Using TLR (Technology Readiness Levels)	0.00%
Other method (please specify)	0.00%

Source: own analysis

77.27% of responses indicated that research and development activities is identified based on individual technical documentation maintained for specific development projects carried out by the company, e.g., a research and development project sheet. 22.73% of respondents, however, apply generally accepted principles defined for all research and development activities carried out by the company.

The second question examined which management tools companies use to plan, organize, and control research and development activities. The responses to this question are presented in Table 3.

Table 3: Responses to the question: What management tools does your company use to plan, organize, and control research and development activities?

Answers:	%
Cost estimate for ongoing research and development activities	81.82%
Individual R&D budget	72.73%
Project sheet for specific research and development activities	40.91%
Project feasibility analysis	27.27%
Business plan	13.64%
Other (specify) - knowledge gained during research and development activities	4.55%

Source: own analysis

For this stage of the survey, respondents could select several tools used in their organization to plan, organize, and control research and development activities. 82% of respondents identified the cost estimate as the tool most frequently used for planning, organizing, and controlling research and development activities. These are, in order: individual R&D budget 72.73%, project charter prepared for specific R&D activities 40.91%, project feasibility analysis 27.27%, business plan 13.64%, and knowledge developed in the course of R&D activities. Respondents also indicated their own tool used for managing R&D activities, which was “knowledge developed in the course of R&D activities.”

The final section of the survey questionnaire included questions designed to determine who in IT sector companies is responsible for managing research and development activities, as well as whether these units collaborate with the units responsible for reporting information on research and development in the financial statements (the financial accounting department). Table 4 presents the questions asked along with the responses received.

Table 4: Questions regarding cooperation between the department responsible for managing research and development activities and the department responsible for preparing financial statements.

Answers:	YES	NO	I DON'T KNOW
Does your company have a separate department/unit/person responsible for managing R&D activities?	81.82%	13.64%	4.55%
Is there good communication in your company between the department/unit/individual managing research and development activities and the person/unit responsible for preparing the financial statements (the financial accounting department)?	72.73%	18.18%	9.09%
Does the financial accounting department have access to and use technical documentation related to research and development activities when preparing financial statements?	81.82%	4.55%	13.64%
When preparing financial statements related to research and development activities, your company uses data provided by the unit/department/person managing this activities.	95.46%	0.00%	4.54%

Source: own analysis

Survey respondents indicated that in most companies (81.82% of responses), there are separate departments responsible for managing development activities, specifically: the R&D project management department (83% of responses), a department managing only a single R&D project (12% of responses), and the company's development department (5% of responses). 13.64% of respondents stated that their company does not have a separate department responsible for managing R&D activities.

According to the responses, departments managing research and development activities communicate well with the person/unit responsible for preparing the financial statements (the financial accounting department)—72.73% of responses—and also indicated that the financial accounting department has access to and uses technical documentation regarding research and development activities in preparing financial statements—81.82% of responses. 95.46% of respondents indicated that the data received by the department managing research and development activities is used to prepare the financial statements.

Conclusion

The complexity of R&D processes, as well as the uncertain nature of their results, justify the need for an in-depth analysis of the information disclosed in this area in the organization's reports. It should be emphasized that the presented information can reflect a true and fair view of the entity only if it is prepared internally using carefully selected management accounting tools that enable the proper identification, measurement, and interpretation of the results of R&D activities. Another essential condition for ensuring high-quality information is proper communication between the department responsible for managing research and development activities and the financial accounting department. Effective cooperation between these organizational areas promotes greater transparency in disclosures and improves the reliability of the information used by stakeholders.

The survey conducted by the author indicated that research and development activities is a significant area of management for companies in the IT sector, 90.91% of which have an appropriate tool for managing (planning, organizing, and controlling) development activities (91% of responses). The top three most frequently cited tools were the cost estimate for ongoing research and development activities (81.82% of responses), an individual research and development budget (72.73% of responses), and a project charter prepared for specific research and development activities (40.91% of responses). Respondents indicated that companies maintain appropriate documentation regarding ongoing research and development activities (86.36% of responses) —i.e., using individual technical documentation maintained for specific development activities, such as a research and development project sheet (77.27% of responses), or based on generally accepted principles defined for all research and development activities (22.73% of responses). 81% of respondents stated that the company has a separate department/unit/person responsible for managing research and development activities. The survey results indicate that companies in the IT sector have distinct units responsible for managing research and development activities, most often in the form of R&D project management departments. At the same time, respondents

confirmed a relatively high level of cooperation between units responsible for R&D activities and the financial accounting department, which should be considered a positive practice contributing to the improvement of the quality of information reported in the financial statements. In particular, the possibility of using technical documentation of research and development activities in the process of preparing financial statements and the widespread inclusion of data provided by R&D management units in financial reporting were highlighted. The results obtained indicate that the proper organization of structures responsible for research and development activities and effective communication with the financial accounting department are essential conditions for ensuring the consistency, reliability, and usefulness of disclosed information in companies where research and development activities form the foundation of the entity's operations.

The research conducted in this article provides a basis for in-depth analyses of issues related to the management of research and development activities, particularly regarding the detailed identification and evaluation of the tools used to support this process. At the same time, it seems reasonable to expand the scope of future research to include the issue of internal organizational communication, which is one of the key factors determining the effective reporting of information regarding research and development activities. Properly designed communication mechanisms, in fact, help ensure the consistency, completeness, and usefulness of the information presented in companies' reports. One limitation of this study is its sector-specific, country-specific, and self-reported nature. Future research should therefore incorporate cross-sector comparisons, case studies, archival analyses, and assessments of internal communication quality.

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