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Review

Controlling vs. Business Analysis: Theoretical and Practical Perspectives in a Dynamic Business Environment

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Abstract: The paradox of "time compression in decision-making" is to create quick and informed decisions. Traditional management support functions are no longer delineated, their functions and structures are mixed, and the question of understanding the character of the relationship between modern business analysis and controlling is imposed as an imperative. Business analysis, as a scientific discipline, studies the company and its business opportunities through analytical methods and theoretical frameworks. In contrast, controlling is a managerial concept that integrates the functions of planning, analysis, and control, relying on the findings of business analysis to support the decision-making process. The subject research comparatively analyzes the mutual relations of business analysis and controlling, examining how they develop and function in theory and practice. Special attention is paid to the need to affirm the integrated approach to controlling, which includes a synergistic effect, and the "clinical" methodological structure of the analytical procedure of business analysis, in holistic business management. The results of the research showed that business analysis, as an autonomous scientific discipline, is independent of controlling, but in business practice, it is often functionally connected with it. It was identified that in the scientific framework of business analysis controlling is studied as a management instrument, while in modern business practice controlling organizationally unites the function of business analysis.

Keywords: *Business analysis; controlling; holistic business decision-making.*

1. Introduction

One of the significant paradoxes in modern business is "time compression in decision-making" according to which it takes more and more time to make a decision, and there is less and less time to make a decision, imposes the question of making quick and informed decisions in an increasingly complex business environment, which is one of the keys in modern business management. Business analysis and controlling play key roles in modern business decision-making which is characterized by conditions of growing complexity, globalization, and digitization. However, although both concepts are of essential importance for modern management, in academic and professional circles

there is no single definition of their roles and mutual relations, so it is not possible to talk about the complete clarity of the situation regarding the relations of controlling and business (financial) analysis [1].

Therefore, their determination is often contradictory and inconsistent, especially when defining the role of controlling in business decision-making and its reliance on analytical methods. One possible reason for this ambiguity is that "controlling" is an English term without a precise equivalent in local languages, allowing for interpretative flexibility and ongoing debate, and the academic literature presents diverse definitions, some emphasizing outcomes, while others focus on the universal objectives of a company [2].

Nevertheless, we proceed from the fact that it is grounded on the one hand to understand business analysis as a separate scientific discipline [3] that focuses on the study of the entire business and its company opportunities from a theoretical and methodological perspective, with the application of analytical methods.

Whereas, on the other hand, controlling is a managerial concept that relies on business analysis, that is, as a cross-functional performance management concept tasked with the performance-based coordination of planning, control, and the provision of information [4].

A particular controversy concerns the question of whether controlling is exclusively a part of accounting and financial management or is a separate function for strategic and operational management support. In theory, different approaches have been developed - the American model of controlling focuses on controlling as a component of financial control and accounting analysis, while the European, especially the German model, focuses on controlling as an integration of managerial functions of planning and control, and a separate business function.

At the same time, business analysis is increasingly expanding the spectrum of methods, using advanced techniques such as big data analytics, artificial intelligence, and predictive modeling, which further complicates its boundary concerning controlling. The key questions that arise are: can the controlling function fully encompass all dimensions of business analysis and does business analysis develop as a separate scientific discipline independent of the functional framework of controlling?

The goal of this research was to precisely define the separate roles of business analysis and controlling, to avoid methodological and functional overlaps, and to enable efficient integration. The starting hypothesis is that within business analysis, as a scientific discipline, the role of controlling as a management instrument is studied and that in business practice, controlling functions as a separate organizational entity, which incorporates an integral planning-analytical function. The contribution of this research is a better understanding of the theoretical and practical aspects of business analysis and controlling, based on which the optimal way of their integration into managerial processes can be established.

2. Business analysis - theoretical and practical activity

Business analysis, as a special scientific discipline, is a specific form of scientific analysis because it studies a narrower segment - the economy of a company, defining and measuring business activity in the context of the general economy, and focusing on the economy of a specific company, analyzing its operational sense and valuation through the knowledge of general economic theory. In other words, the subject of research is the company and the business opportunities of the company as a whole, which is why it differs from those sciences that use analysis as a method of researching some partial aspects of the company and the business of the company [5], but also the state and perspective of business development opportunities, i.e. from the development aspect, which significantly distinguishes it as a science from other economic sciences, e.g. microeconomics, the subject of which is the reality of companies.

Therefore, business analysis as a scientific discipline can be explicitly defined as follows: business analysis, as an independent scientific discipline, presupposes the consequent application of the principles of analysis methods that investigate the company and the business possibilities of the company as a whole [6]. Therefore, a general approach to analysis as a method is not sustainable, often based on the fact that the company is dealt with by numerous disciplines that understand it from different aspects and use analysis as a method. And since it is an indisputable fact that analysis uses methods, it follows that it is not a method, but a science - which is characterized by using methods. Therefore, the scientific understanding of business analysis is based on the unity of theory and methods, where theoretical concepts define research directions, and methodological tools enable their application in the analysis of specific economic phenomena. In fact, in recent times, the general understanding of analysis as a mere technical discipline has gone beyond that, promoting analysis as a dynamic tool for forecasting and strategic decision-making.

Unlike the theoretical aspect, which deals with the development of methodology and principles of analysis, the practical aspect of business analysis is focused on concrete results and the application of those methods in real business conditions. The development and understanding of business analysis as a practical activity is a dynamic process that begins with theoretical research, goes through methodological development and empirical validation, and finally becomes a tool for solving specific problems in practice. In this process, theory and practice complement and improve each other, which increases the effectiveness of both the scientific discipline and its application in the real world. In this way, business analysis as a business activity helps management in making decisions based on reliable data and objective assessment, thus contributing to the growth and development of the company.

The development of business analysis as a practical activity reflects the evolution of economic thought and business practice, moving from a technical-technological, i.e. economic-financial approach to an integrated, strategic, and holistic view of business operations. The evolution of business analysis is reflected in the transformation of its name, scope, aspect, perspective, and spectrum of methodological tools, which is conditioned by changes in the science of business economics.

The initial development of business analysis is generated by the phase of balance analysis [7], where the balance is analyzed as a measure and statement of results, ie the balance of business [8]. Then the analysis of the balance is completed and the financial analysis is affirmed, which are not identical. Namely, financial analysis is based not only on financial reports but also on other financial data that are not recorded in accounting (eg data from the capital market, various types of investments, etc.), as well as other relevant quantitative and qualitative data [9]. Financial analysis focused on financial results and perspectives [10], which is dominant in Anglo-European theory and practice, and continues to be the subject of research. Five relatively independent approaches to the development of systemic financial analysis of companies are indicated, namely: empirical pragmatic, ratio statements, multivariate modelers, distress predictors, and capital marketers schools [11].

On the other hand, further changes in the economy of the company indicate that the object of analysis is the company and everything that surrounds it and that the subject is its entire operation, in which case we arrive at a concept that goes beyond financial analysis. The content of the analysis of the entire business is covered by the names economic analysis of business, or just business analysis, the subject of which is the production and economic activity of the company and the final production and financial results of its activities [12]. This approach, related to planning, was dominant in Eastern European theory and practice as a consequence of the planning concept of the economy, which starts from the fact that the business of a company is an economic business process that as such strives for rational business [13], and which explores and explains and assumes an understanding of economic reality and planning for the future [14], i.e. the internal reserves of the company [15].

At the end of the last century, in the theory and practice of business economics, the need for non-financial information and a strategic way of thinking began to be emphasized, which supports the position that when analyzing the business of a company or entity, one starts from the whole of all

internal and external factors that have an impact on its business, which led to the transformation of the content of business analysis, according to the holistic context. Successful intermediaries have at least as good an understanding of the industry economics as the firm's managers, as well as a reasonably good understanding of the firm's competitive strategy [16].

Next, digitization enables advanced data analysis and real-time performance monitoring with Key Performance Indicators, analytics, and artificial intelligence, leading to new dilemmas and demands for answers. The answer is a business analysis using performance measurement, whose focus is on quantified monitoring, control, and direct management of performance [17], as a tool for continuous monitoring of the effects of decisions, strategies, and investments. In other words, business analysis is performed to define and validate solutions that meet business needs, goals, or objectives [18].

The essence of the transformation into modern business analysis is reflected in the holistic approach as a key principle of understanding business processes, which implies the connection of business factors and potential in a holistic context. This approach enables a more comprehensive assessment and decision-making, making business analysis not only a theoretical framework but also a necessary practical activity in modern business management. Business and competitive analysis is not purely art or science, but a combination of substantial portions of both in its effective application [19]. In other words, explicitly, business analysis as a practical activity represents a continuous process of systematic examination and evaluation, (failure) of business and (failure) to use the company's potential, to inform, in a holistic context, selected and useful information, of all levels of managers and other internal and external stakeholders, about the resulting business situation and the possibilities of further development of the company [6].

Therefore, in a modern, holistically oriented company management system, business analysis represents one of the key managerial functions, which by connecting different aspects of business, enables managers to identify challenges, recognize opportunities, and optimize processes, thus contributing to more efficient and sustainable development of the company.

To make informed decisions, it is necessary to carry out a methodologically structured analytical procedure that represents the key mechanism of generating a platform for making informed and strategically based decisions. Developing an analytical procedure requires a systemic approach, almost identical to the clinical one, and according to this perception, the following analytical phases can be defined:

1. Anamnesis and analytical description, i.e. data collection and evaluation, which involves the systematic collection and processing of historical and current data to identify patterns, trends, and key performance indicators.

The framework of the analysis consists of an anamnesis in which historical data is collected, including financial statements, previous strategies, and their consequences, and the analytical description focuses on the current business situation through performance quantification and strategic position analysis.

The methodological framework of this phase includes the application of basic methods of operational and strategic analysis that enable a deeper understanding of business dynamics and the identification of potential challenges.

2. Diagnosis ie. identification of cause-and-effect relationships between recognized problems and key business factors.

The diagnosis phase includes analytical interpretation and causal analysis, through which possible causes of business challenges are considered and hypotheses about their origin are tested. Differential diagnosis involves evaluating multiple potential causes and validating them through advanced analytical methods, such as regression analysis, factor analysis, and analysis of variance. Based on the results of this phase, the company's management gets a clear picture of the fundamental problems and possible solutions that can contribute to business improvement.

3. Epicrisa no. 1 i.e. operational-tactical epicrisis, i.e. evaluation and preparation for implementation, which aims to synthesize the findings of analysis and diagnosis and evaluate the company's readiness to implement measures. The phase of Epicrisis no. 1 is focused on short-term business performance and the organization's ability to quickly adapt to identified challenges. Within

Epicrisa no. 1, the first recommendations for operational and tactical measures are formulated, which may include the restructuring of operational processes, optimization of costs, and improvement of internal controls to ensure a quick and efficient reaction to identified problems.

4. Therapy ie. implementation of operational-tactical measures aimed at solving identified problems and improving business performance. Key aspects of the therapy phase include cost optimization, organizational restructuring, innovation in business models, and the introduction of new technologies. The implementation of these measures requires precise planning, monitoring of execution, and constant evaluation to ensure their effectiveness and minimize potential risks.

5. Prognosis ie. prediction of future performance, which enables assessment of the effects of implemented measures and prediction of future performance of the organization. The forecasting phase includes prognostic analysis and predictive modeling, which involves the use of scenario analysis, time series analysis, and the development of predictive models to anticipate future market opportunities and challenges and formulate an appropriate strategy for long-term growth and development.

6. Epicrisa no. 2 - strategic epicrisis, i.e. long-term evaluation and synthesis of the effects of implemented measures, as well as assessment of the sustainability of the business model. The phase of Epicrisis no. 2 focuses on the strategic position and competitive advantage of the company. Evaluation of strategic goals and positions and identification of new opportunities and challenges enable management to define future business directions and ensure the long-term stability and vitality of the organization.

Without business analysis, there is certainly no survival of a company, and it is obvious that it is not an optional process or a relic of outdated business models, but an indispensable business function, that forms the core of management support, and without it, there is no business decision-making [20]. Ignoring business analysis results in ill-conceived business models, reduced efficiency, and, ultimately, jeopardizing the survival of the company in a dynamic economic environment. Therefore, the adoption of business analysis is not an option, but an imperative for any company that strives for long-term competitiveness and sustainability. Accordingly, it is advisable to use clinical analytical methodology. Business analysis has developed into a specialist discipline that can be offered to organizations [21]. Its role goes beyond the mere collection and interpretation of data - it is a fundamental mechanism that allows the company to adapt to changes, recognize opportunities, and minimize risks in unpredictable market conditions.

3. Controlling – theoretical and practical activity

Controlling, as a key business function, is becoming increasingly important and indispensable in modern corporations due to the dynamic environment and the need for integrated management of resources and information. However, different authors and researchers approached the definition of controlling from different perspectives, which led to a wide range of definitions and approaches. Different approaches to controlling have developed in response to specific economic, cultural, and managerial paradigms.

Controlling is considered the process of determining goals, and adequate planning, and then control of the company by controllers and managers whose task is to cooperate and take responsibility. Controlling is considered a management support, and the common goal is yield optimization [22].

A key factor in the differences in modern theory and practice in the literature stems from the concept of controlling in the USA and Germany, which are developed as a reflection of their economic and management paradigms.

American controlling stems from the American understanding of economics and business management, which relies on decentralized, market-oriented systems with a strong focus on financial control, efficiency, and short-term profitability. The American approach sees controlling as a part of accounting and finance, where the key focus is on the structures and processes of formal

control [23,24], that is, on connecting the control system with reward and incentive systems for managers [25], and more recently not only on the application of control but also on designing, using and adapting to specific organizational needs and an integrated approach to performance [24].

German controlling, on the other hand, reflects the continental European management model, which is structurally organized, long-term oriented, and holistic. German controlling functions as an integrative managerial tool that connects planning, control, and strategy, where the most important authors emphasize its critical importance in the coordination of different subsystems [26,27], in running a company [28], and in gathering information [29]. The essence of the German concept of controlling is in functional support in solving specific management tasks in different areas using a specific set of methods and special tools [30].

American controlling is based on a financial and accounting concept that is focused on financial monitoring, while German controlling represents a broader managerial concept, which includes organizational efficiency and (pro)active expert management support, as separate business functions. However, in modern conditions, both approaches are increasingly combined because none of these models is sufficient on its own anymore, as an efficient and informed management response to the demands of the holistic context of business is necessary.

Specifically, the necessity of integrating different approaches to defining the concept of controlling is conditioned by the following reasons:

- Globalization of the market, because today corporations operate on a global level, which requires harmonization of different business practices and standards. Integrating different approaches to controlling allows corporations to more effectively manage operations at the international level.
- Information technology development, because the development of information technologies has enabled the collection and analysis of large amounts of data. An integrated approach to controlling uses these technologies to provide comprehensive information to management, which contributes to making informed decisions.
- Requires a holistic approach to management, which implies looking at the organization as a whole. The integration of different approaches to controlling enables a comprehensive overview of the company's performance, including financial and non-financial aspects, that is, which is short-term, medium-term, and long-term, socially, ecologically, and economically harmonized. The Balanced Scorecard is often cited as a key framework for modern controlling, as it provides a holistic approach to performance measurement and management [31].
- Increased complexity of business processes because due to the growth and diversification of business activities, controlling must include different functions and processes within the organization. An integrated approach enables more effective coordination and supervision of these processes.
- Focus on strategic management because classic, operational management is focused exclusively on financial aspects, it is no longer enough, but management uses strategic and operational controlling. Strategic and operational controlling are key to successful business because they enable organizations to simultaneously respond to daily challenges and plan future activities [32], relying on quantitative and qualitative information [33].

The Balanced Scorecard model represents an instrument, i.e. a methodology whose task is the transformation of the company's strategic goals towards successful business [34]. A holistic approach that integrates a greater number of different elements through the prism of different aspects of situational perceptions gives better performance.

Accordingly, the integration of different approaches to controlling is a requirement, that not only improves the decision-making process but also enables corporations to respond to the challenges of a dynamic business environment, improving their adaptability, innovation, and competitiveness.

Therefore, controlling is increasingly becoming an integrated function that combines financial and strategic aspects with the aim of effective decision-making and business optimization. In other words, it is methodologically justified that the modern, integrated concept and determinations of controlling are understood in a holistic context [6], which results in the following determinations:

- Holistic management function, i.e. controlling is not a part of accounting or finance, but an integral function of management that enables coordination and harmonization of all aspects of business. It deals with connecting strategic, operational, and financial management, which achieves comprehensive management of the company, in a holistic context.
- Based on the scientific method of business analysis, i.e. it means the systematic collection, processing, and interpretation of data to make informed decisions. In other words, controlling is based on the application of analysis methods that enable meritorious decision-making, which is based on reliable data instead of intuitive assumptions.
- Synergistic integration of management functions, i.e. controlling unites different areas of management, which enables vertical and horizontal integration, creating synergistic effects between different sectors of the company and increasing its adaptability to changes in the market.
- Multidisciplinary knowledge, i.e. controlling includes a wide range of disciplines: management, business analysis, economics, finance, statistics, IT, accounting, and psychology. The effect of interdisciplinarity enables precise analysis of business situations and provides quality management support, in a holistic context.
- Optimization of the information process is one of the key functions of controlling, which refers to the process of transforming numerous diverse, internal and external, raw data from all legal and legitimate sources, and connecting and transferring them into a practical format for timely use in holistically oriented business information, i.e. management. At the same time, the transparency of business flows is ensured through the visualization of key performance indicators, reporting, and digitization of information management. This is a critical process, today in the digital age in the conditions of big data, which requires Volume, Velocity, Variety, Veracity, Value, Validity, Volatility, Variability, Visualization, and Vulnerability [35], to determine the quality of support organizations and their departments make business decisions [36].
- Competent partner support to management, i.e. controlling is an advisor, strategist, or proactive partner to management. Controlling is a type of "economic conscience" of management that appropriately helps managers in making timely and informed decisions.
- The development of a vital company in a dynamic environment, because the company functions as a complex system that must continuously adapt to market, technological, and regulatory similar changes. Controlling focuses on leading and directing a vital, and for adapting and developing a capable enterprise, which is dedicated to continuous optimization of processes, timely reaction to changes, and alignment of operations with strategic goals.

Summarizing the above, the following definition is highlighted, which can significantly contribute to the understanding of control, i.e. that controlling is a holistic management function, based on the scientific method of business analysis, which synergistically integrates management functions and multidisciplinary knowledge to optimize the information process and competent-partner support to management in the management and development of a vital company in a dynamic environment. Overall, in the spirit of elaborating the controlling process, it can be concluded that knowledge is the basis for business development and sustainable success in the long term. In modern business conditions, organizations that are ready to learn have a much better chance of survival [37].

4. Discussion

Within controlling, all functions are treated equally and with respect for the specificity of the position in terms of a complex (integral) dynamic unity. Controlling does not have its special methods, techniques, or activities. Controlling, therefore, is neither planning, organizing, analyzing, informing, nor traditional controlling nor does it replace, nor can it replace, any of the management functions [6]. Control is a partial function of management support tasks and refers to the execution system while controlling is aimed at integral and systemic management support and refers to its functions. It does not "represent" the management of human resources, nor does it take on the tasks of leadership and management, because then it would not be different from management (therefore, it is not management either); but it is closely related, it aims to align with the goals and form a harmonious whole of all individual management functions, as well as to integrate and supervise that integration, while control is a partial function of management support tasks and refers to the performance system.

Controlling simply uses the development of everyone's approach, especially the management support functions, unifying them in the form of a synergistic effect of selection (knowledge) of information for the strategic and operational management of the company. At the strategic and normative level, the functions of coordination and harmonization, and the function of regulation/management are based on the science and practice of management and organization, and the functions of planning and analysis are primarily based on the science of business economics. Combining these aspects forms the scientific basis of the concept of controlling.

Emphasizing the framework of business analysis, it is noticeable that, according to its task and content, it forms the core of controlling. Business analysis is a separate and specific economic discipline whose object of research is the business operations of companies, and therefore belongs to the microeconomic disciplines, and constitutes one of the individual sciences of the economy of companies. Controlling is not constituted as a science; it is, first of all, treated as a concept, derived from the needs of decision-making in practice, which assumes the existence of other generic functions, the results of which it coordinates and integrates, and functions essentially, based on the link of planning, control and analysis, and other relevant information that make it organizational.

Template "information system" in the so-called modules of information for decision-making, proved ineffective and irrational in the generally accepted sense of the word effective management. No doubt, there are certain results, but of a narrow domain. Claims to impose "partial information systems" as an integral - generally accepted solution - as a management information system - did not bear fruit. For example, we are talking about "accounting information system" or its variant "management accounting", especially in the Anglo-American speaking area, where it focuses on internal information collected by accounting to make internal decisions, but they are primarily financial.

Then, numerous information systems from the domain of informatics, try to "template" the so-called information modules for decision-making in the turbulent market conditions of the company's economy. Whereas today, in the era of Big Data, when the requirement is the efficient transformation of numerous and diverse data into useful information, business analytics, which processes a large amount of data using modern digital tools, is identified with business analysis. Namely, business analytics focuses on the value of historical data using the power of statistical and mathematical models, and advanced techniques such as artificial intelligence algorithms [38], thus helping to predict future trends and automating decisions, while business analysis explains what happened and why. Therefore, the information system must be built in such a way that it enables quick and easy disposal of information [39].

It can be concluded: that business analysis in terms of its activity, task, and content is obviously at the very foundation of controlling activities.

Bearing in mind our economic structure and the consequent management practice, there are certain dilemmas and ambiguities and attempts to "drown" business analysis into controlling, and even to deny it, whereby controlling is presented as an absolute novelty, although in theory and practice, business analysis has existed for a long time. Controlling is a novelty, but not an absolute

one, which innovatively unites all (already existing) administrative and professional tasks that makeup service and support for the management of the company's operations. From previous observations and research, it is evident that a significant part of what is related to controlling in recent times has long been treated in the classical economic literature as part of the scientific disciplines of business analysis and business planning of takeovers, and that in classical practice it has long been related to the scope of work of the planning and analytical functions, i.e. the plan and analysis department.

Of course, over time, the content and perspectives of business analysis have changed, and it is reaffirmed as a science in scientific and professional literature, and through examples of good analytical practice, as a key and indispensable instrument for the output of relevant and reliable information (knowledge) for business decision-making.

After this knowledge, the following seems rational: within the framework of business analysis as a scientific discipline, the role of controlling as a management instrument is studied, and in business practice, as a separate organizational entity, the planning and analytical function is integrally included in the function of controlling.

5. Conclusions

The subject research showed that business analysis is not only a methodological tool but a separate scientific discipline that studies the company and its business opportunities as a whole. On the other hand, controlling is a managerial concept that integrates various management functions, but it cannot be considered a scientific discipline. This difference has significant implications for the way they are understood and implemented in business practice.

The research confirmed that business analysis, as a scientific discipline, studies controlling as a management instrument, while in business practice, controlling functions as a separate organizational entity within which the planning and analytical function is integrally included. The key findings indicate that business analysis is the core of controlling because it relies crucially on its methods and findings in the managerial decision-making process. At the same time, business analysis has scientific autonomy and can evolve and develop without direct connection with controlling, although their functional integration with clearly defined roles is of greater practical value.

The contribution of the research is reflected in a more precise definition of the role and mutual dependence of these concepts, thereby contributing to the academic debate on their importance and role.

Also, it was observed that in the conditions of modernism, the integrated approach of controlling, which goes beyond the classic, American and German approaches, is an adequate solution for the holistic context of management, enabling the company to proactively make decisions, optimize resources and adapt to a dynamic business environment.

At the same time, it is suggested to accept the clinical methodological structure for the analytical procedure of business analysis, according to the clinical methodological approach that enables comprehensive diagnosis of problems, precise identification of causes, and targeted corrective measures. Understanding these differences can contribute to the improvement of modern managerial practices in companies, which, among others, require a solution to the paradox of "time compression in decision-making." It was concluded that connecting business analysis and controlling focuses on achieving a synergistic effect for the efficiency of managerial decision-making, but that it is necessary to precisely define their separate roles and importance.

However, the research is not without limitations. The research is based on a comparative review of the literature, while future research should focus on the empirical examination of the role of business analysis and controlling in different economies, sectors, and organizational structures. Also, the development of digital technologies and new analytical methods raises the question of how business analysis and control will evolve in the future, which represents a relevant direction for further research.

Their integration in modern management should not be seen as a hierarchical dependence, but as a functional synergy that enables more efficient holistic business management. Clearly defining their role is crucial for further improvement of theoretical models and practical application in management, thus creating a basis for making informed and sustainable decisions in a dynamic business environment.

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