

Knowledge Management in Crisis Conditions and Financial Results of Enterprises

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Abstract: The article addresses the considerations concerning key issues affecting the proper functioning of enterprises. The global situation related to the COVID-19 pandemic in recent years has contributed to significant changes in terms of management. In this publication, the attention is drawn to a necessary element of the functioning of enterprises, i.e., knowledge management. Actions taken in the field of implementing innovation, implementing IT systems as well as implementing the concepts of sustainable development translate into proper knowledge management in enterprises. The above issues are defined and constantly deepened in literature. However, there are few studies that combine this topic and analyze interrelationships. The review of literature indicates the significance of these issues and confirms the need for further research in this area. In this publication, the issue of innovation is addressed, as a "driving wheel" of enterprises operating in the market environment. The link between the implementation of innovation in enterprises and the development of IT systems, taking into account the idea of sustainable development, is also analyzed. The considerations are deepened by the relations between knowledge management and innovation, IT systems and sustainable development. The article includes the empirical part in which two enterprises from Poland, operating primarily on the domestic market, are subject to the analysis. In the article, a case study has been applied using economic analysis based on two selected enterprises. The objective of the article has been to learn about the components of knowledge management used in crisis conditions. It should be noted that the pandemic period was a crisis situation for enterprises and the conducted research has showed what actions in terms of knowledge management were taken by enterprises to survive on the market. The conducted analyses have proved that enterprises, despite the same industry, took different actions, which translated to the achieved financial results. The functioning of modern enterprises in crisis conditions, taking into account the issues discussed in the article, is the key to their success. Therefore, the topic of the article is up-to-date and relevant.

Keywords: knowledge management, Innovation, IT systems, Sustainable development

1. Introduction

Knowledge management, innovativeness of enterprises, information systems, and sustainable development include very complex issues. Therefore, modern companies are increasingly oriented to going beyond their comfort zone and seeking a common denominator that connects these areas in order to cope with crisis conditions. In the article, the term "condition", identified with the COVID-19 pandemic, was intentionally used. "Condition" is defined as a determinant of the occurrence of a certain situation (Bednarska-Wnuk, 2010). Crisis in literature is defined as the peak moment of an escalating crisis situation. It is mainly characterized by lack of information, an increase in unforeseen events, lack of control, instability of the situation, and dynamics of changes. It should be noted that the proper flow of information plays a crucial role in crisis situations (Marjański, Starczewski, Ciekankowski, 2017). The COVID-19 pandemic has drastically changed the established rules of enterprise management, including broadly defined knowledge management. There are many interpretations of knowledge management in literature. The complexity of this issue is confirmed by the fact that theoreticians and practitioners continuously expand the definitions of this concept. Knowledge management is defined as a whole of various activities related to enterprise management (Salojärvi, Furu, Sveiby, 2005). Knowledge management is a complex process involving various actions that contribute to establishing favorable decisions in companies (Anshari et al, 2023). This process consists primarily of knowledge recognition, creation, storage and sharing of acquired knowledge. These activities seek to use knowledge to increase the efficiency of the enterprise (Wang, Wu, 2021). Proper knowledge management in enterprises is also conducive to gaining a competitive advantage. Deepening the considerations on knowledge management, it should be noted that it is also the organization's ability to acquire knowledge on time and in the right place in crisis situations (Oktari et al, 2020).

It should be noted that from year to year, it is observed that more and more companies undertake innovative activities. Moreover, the term "innovation" gains a broader meaning. Therefore, for the accuracy and relevance of the concept of innovation, the constant enrichment and updating of definitions is crucial. Schumpeter is recognized as the precursor of this issue. He indicated that innovation is considered a comprehensive change. It is not only a process aimed at improvement but also the creation of something entirely new that will significantly deviate from existing norms (Schumpeter, 1960). Currently, innovation is treated as a comprehensive change

that takes into account various areas it is intended to affect. It is reasonably considered as a type of experiment, as its effects are difficult to assess at the stage of implementation (de Carvalho Pereira et al, 2015).

The literature distinguishes many categories of classification of knowledge management components. Researchers isolate, categorize, and explain components from different perspectives (Usman, Zaveri, Hamza, 2021). They use different research methods to identify the components of knowledge management in different types of enterprises (Mohammadzadeh Ravshiti, Ghiasi, Tahmasebi Limooni, 2020). This article highlights four key components of knowledge management from the perspective of crisis situations. Due to the occurrence of crisis conditions, managers had to transform the operations of companies, mainly directing them to the implementation of innovative solutions, IT systems, and implementation of the assumptions of sustainable development. In the area of these components, enterprises implement activities that affect the proper management of knowledge.

In the article, the method of critical analysis of literature was used, as well as the method of economic analysis, and a case study. The triangulation of the research methods allowed for the in-depth analysis of the issues. The objective of the article is to learn the components of knowledge management used in crisis conditions. In most companies, the elements, such as, knowledge management, innovations, IT systems, and sustainable development are not new. However, they are currently the foundation of business management. They should be constantly explored and updated. Therefore, the topic of the article is important and relevant.

2. Innovativeness as a “Driving Wheel” of Enterprises Operating in the Market Environment

An important criterion for assessing the effectiveness of enterprises is their innovativeness (Jap, 2001). The efficient functioning of companies is highly integrated with the implementation of innovation. The current review of literature takes into account the impact of innovation on achieving a competitive advantage for enterprises in the market (Sobczak, Głuszczyk, 2020). This means that innovativeness corresponds to the company's ability to maintain its competitive potential in the market, which depends not only on its assets but also on the knowledge and skills of its personnel. Innovation increases the competitive advantage, and thus distinguishes the company in the market environment (Matos et al, 2015). It should be noted that this also has an impact on shaping the overall market situation and to some extent also causes the establishment of prevailing trends in the market. The development of companies is determined by the level of implemented innovation. The review of literature indicates that more and more researchers identify the level of innovation in companies with maintaining the stability of the entity in a situation of economic fluctuations in the environment (Hou, Hong, Zhu, 2019).

In today's world, enterprises implement various types of innovation. There is process, marketing, organizational, and product innovation. Process innovation primarily involves streamlining and creating entirely new methods, especially within supply and production. The characteristic feature of marketing innovation is the implementation of new marketing methods. Organizational innovation relates to changes in terms of management methods in different structures of the company's operation. Product innovation is a key type of innovation. It involves creating entirely new products, but also improving existing ones. Such a wide range of types of innovation created by companies provides the opportunity for continuous development and gaining an increasingly competitive advantage in the market (Brodowska-Szewczuk, 2019).

In their strategies, companies should primarily consider the dynamic development of technology. With such an approach, entities, especially large companies, have the chance to compete in the global market and gain a competitive advantage. Technological novelties have a positive impact on the company's image because this indicates development and adaptation to a dynamically changing environment (Szuper, 2021).

Literary studies indicate that product innovation is identified with something innovative that allows customers to acquire products that deviate from accepted norms, while enabling the company to expand its business to new markets, new customers, and suppliers. It is also necessary to analyze the market innovation itself, which constitutes the key link to product innovation. Researchers define it as the completely innovative understanding and functioning of the company in the market. This is related not only to originality in terms of promoting products but mainly recognizing market perspectives, this is also innovation in terms of analyzing the market itself and reaching new markets (Wang, Ahmed, 2004).

The individuality of the market sets a type of determinants of belonging. Therefore, it can be concluded that it is enterprises and their level of innovativeness that create the market. The benefits from innovation are oriented to the entity implementing it but also, on a broader scale, even globally (Jaakson, Aljaste, Uusi-Kakkuri, 2019).

This is innovation that drives the market since companies, to strengthen their competitive advantage, strive to increase their own innovativeness. Moreover, enterprises aim at maximizing profits, and the ability of entities to create innovation translates into achieving financial benefits (Kumar, Haleem, Sushil, 2019). This also affects belonging and survival in the market, as well as efficient and effective functioning (Jaakson, Aljaste, Uusi-Kakkuri, 2019).

It is worth emphasizing that knowledge of innovativeness is recognized as an essential element allowing for understanding economic phenomena (Reagans, Zuckerman, 2008). Innovation as a "driving wheel" of enterprises operating in the market environment is a general statement, but precisely defining the situation that has been observed for years. Companies constantly compete in terms of implemented innovation. They try to create innovative solutions that will surprise both competitors and customers themselves. By implementing new solutions, companies stimulate other entities to innovate. Therefore, this affects both enterprises and the entire market itself (Łęgowik-Świącik, 2022). Moreover, it is difficult to imagine creating innovative solutions without considering the development of IT systems, which are of fundamental importance from the perspective of the company, competitors, the market, and above all, customers.

3. Knowledge of Innovation in Enterprises and Integrity of Development of IT Systems, Considering the Idea of Sustainable Development

The development of knowledge of sustainable development in enterprise management has been affected by the recognition of social objectives of the enterprise, taking into account justice and solidarity among people, on an equal footing with economic goals (Booth, 1998). Sustainable development in the 21st century is an equally important issue as innovation. When analyzing literary studies, one can notice an increasing number of scientific publications on innovation and sustainable development that combine these two issues. The implementation of innovation by enterprises is inseparably linked to the application of the idea of sustainable development. Innovation in enterprises is also related to the development of diversified IT systems. All types of IT solutions have a crucial impact on the proper functioning of enterprises in such a dynamically changing environment (Amin, 2019). From the perspective of the enterprise, implemented IT systems are primarily intended to improve its functioning. Literature sets define the IT system as a complex set, the operation of which is affected by individual components. It should be noted that individual pieces of information are accumulated but also processed (de Carvalho Pereira et al., 2015). It should therefore be pointed out that in the 21st century IT systems are assigned a key role for proper knowledge management in enterprises. One of the many advantages is the strengthening of the position of enterprises in a given market environment (Stroińska, Trippner-Hrabi, 2017). A literature review confirms the existence of links between knowledge management and innovation. It is precisely innovations that depend to a large extent on knowledge. It is indicated that knowledge management is a source of innovation (Hussain, 2019).

Over the years, the definition of sustainable development has significantly evolved. Currently, the assumptions of this concept include not only the broadly understood ecological aspect but also the social and economic ones. Knowledge management in the context of sustainable development aims to intensify activities implementing the assumptions of this idea (Martins, 2019). Its main objective is to balance these areas rationally to aim at satisfying needs and providing future generations with the opportunity to use these goods. These ideas focus primarily on common sense, rationality, balance, and responsibility. The concept of sustainable development assumes counteracting destructive activities, particularly those that have an impact on the environment (Duran et al., 2015). This concept should not be understood as abandoning development. To maintain proper balance in all areas, development is crucial. Mainly in underdeveloped countries, the ideas of sustainable development come down primarily to reducing disparities in people's living conditions. In this context, development is understood as a paradigm in fulfilling the idea of sustainable development (Klarin, 2018). It is precisely entrepreneurs that bear significant responsibility for the common future. The implementation of new technologies, IT solutions, is necessary with such rapid technological progress. Enterprises, implementing innovation, must consider the ideas of sustainable development. Innovation, IT systems, sustainable development, and knowledge management are analyzed primarily separately. Under crisis conditions, proper knowledge management is an essential component of business operations. The listed components and the activities performed by enterprises in their regard affect knowledge management (Schiuma, Jackson, Lönnqvist, 2021). Therefore, it is necessary to deepen these considerations and take into account the dependencies between them. Figure 1 shows the interaction of individual components.

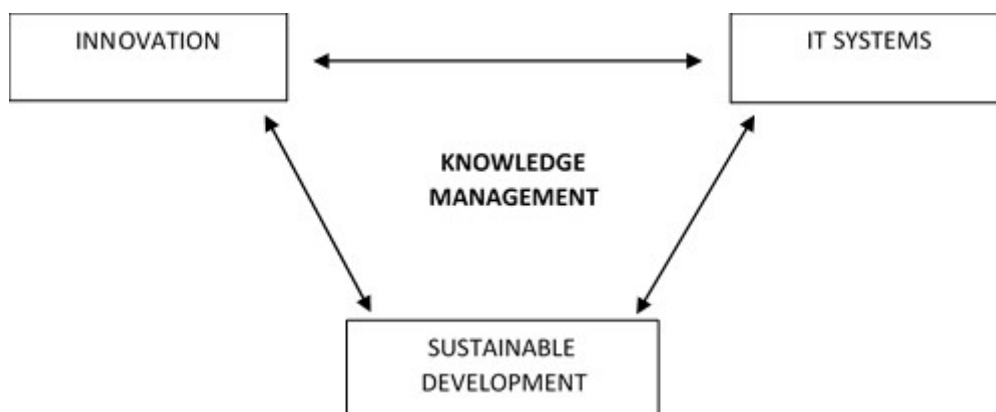


Figure 1: Impact of Individual Components

To sum up, it is worth emphasizing that the analysis of Figure 1 shows that innovation creates IT systems and improves existing ones without directly affecting them. IT systems contribute to shaping innovation and directly affect it. On the other hand, the ideas of sustainable development directly affect and influence the process of creating, implementing, exploiting, and withdrawing innovation and IT systems. This means that innovation and IT systems directly affect sustainable development. Therefore, innovation, IT systems, and the ideas of sustainable development contribute to proper knowledge management in companies. All the above-mentioned components are essential for the proper functioning of the enterprise and are closely linked to each other.

4. Research Methodology

The empirical research was conducted based on the method of economic analysis and a case study. The method of economic analysis allowed for the thorough examination of the processes taking place in enterprises, mainly in financial terms (Grzenkowicz et al., 2017). On the other hand, the case study allowed for the detailed analysis of the studied companies, taking into account their overall functioning (Eisenhardt, Graebner, 2007). Two companies from the clothing industry in Poland were selected for the study: Wittchen S.A. and Monnari Trade S.A. The research sample was deliberately selected due to the availability of the data and the wide range of activities of these entities.

5. Description of the Research Sample

The research period adopted in the analyses covers the years 2016-2021. The selection of the research sample was mainly conditioned by the availability of financial and non-financial data, similar scope of activity of the companies and specificity of their functioning.

The Wittchen company started its operations in 1990. It has been listed on the Warsaw Stock Exchange since 2015 and belongs to the WIG-clothing index. The main activity of Wittchen is the sale of footwear, clothing, luggage accessories and mainly leather accessories. It is a dynamically operating company on both domestic and foreign markets. The products are sold in stationary stores and in an online store. It also uses marketplace platforms (<https://www.wittchen.com/>, Wittchen S.A. financial report for 2021).

The Monnari brand was founded in 1998. It has been listed on the Warsaw Stock Exchange since 2007 and belongs to the WIG-clothing index. The company is mainly engaged in retail sales of clothing. It also offers accessories, bags, and footwear. Monnari Trade S.A. sells its products in stationary stores, an online store and on marketplace (<https://emonnari.pl/>, Monnari Trade S.A. financial report for 2021).

Wittchen S.A. and Monnari Trade S.A. are the leaders in the industry, characterized primarily by a strong market position.

6. Economic Analysis Of Wittchen S.A. and Monnari Trade S.A.

The analysis was conducted based on the research period of 2016-2021. The extensive time frame will allow for the in-depth examination and comparison of the occurring changes, taking into account the crisis conditions. The most important economic indicators from the following groups were used in the research:

- liquidity ratio,
- debt ratio,
- profitability ratio.

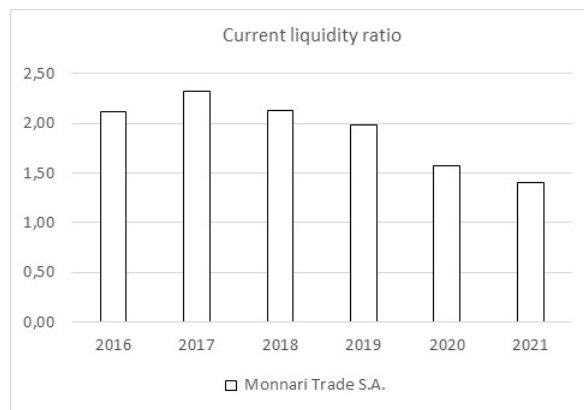
Figure 2 shows the current liquidity ratio of Wittchen S.A.



Source: Own study based on the financial statements of Wittchen S.A. for 2016-2021.

Figure 2: Current Liquidity Ratio of Wittchen S.A.

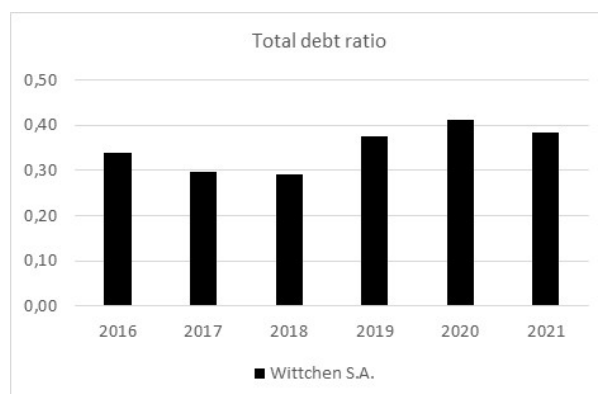
The optimal level of 2.0 was significantly exceeded in the years 2016-2019 and in 2021. Thus, excess liquidity was observed, which indicates a significant amount of free cash. The correct level of the current liquidity ratio was recorded in 2020. Figure 3 presents the current liquidity ratio of Monnari Trade S.A. in the years 2016-2021.



Source: Own study based on the financial statements of Monnari Trade S.A. for 2016-2021.

Figure 3: Current Liquidity Ratio of Monnari Trade S.A.

In the years 2016-2018, the current liquidity ratio exceeded the recommended level of 2.0. This indicates the occurrence of financial overliquidity of Monnari Trade S.A. On the other hand, from 2019 to 2021, the ratio decreased year by year. The lowest value was reached in 2021. It should be noted that despite the regression, these values are within the range of 1.2-2.0, indicating that the company had knowledge to efficiently utilize capital. Figure 4 shows the total debt ratio of Wittchen S.A.



Source: Own study based on the financial statements of Wittchen S.A. for 2016-2021.

Figure 4: Total Debt Ratio of Wittchen S.A.

During the research period of 2016-2021, the total debt ratio in each year was at the correct level. This indicates primarily the financial independence of Wittchen S.A. and thus the proper knowledge management. Figure 5 presents the total debt ratio of Monnari Trade S.A. in years 2016-2021.



Source: Own study based on the financial statements of Monnari Trade S.A. for 2016-2021.

Figure 5: Total Debt Ratio of Monnari Trade S.A.

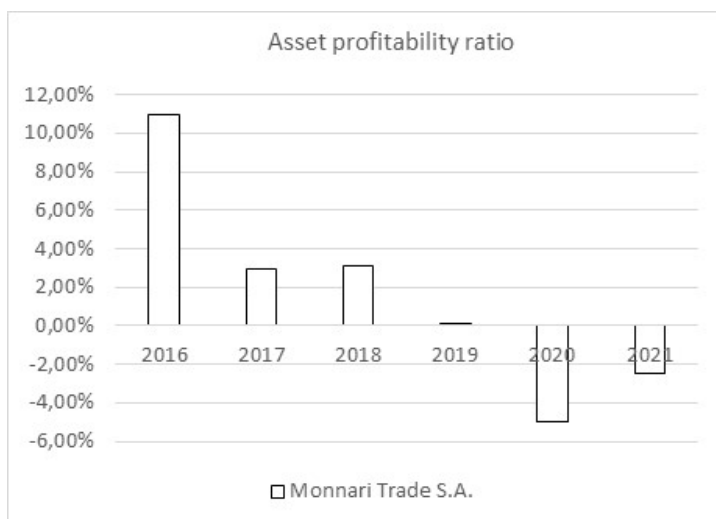
Monnari Trade S.A. is financially independent as the total debt ratio over the analyzed years did not exceed the optimal level of 0.57-0.67. Thus, the company has the knowledge of how to properly manage it. It should be noted that the highest level was achieved in 2021. Figure 6 shows the asset profitability ratio in Wittchen S.A.



Source: Own study based on the financial statements of Wittchen S.A. for 2016-2021.

Figure 6: Asset Profitability Ratio in Wittchen S.A.

In the years 2016 and 2021 there was a fluctuation amplitude in the asset profitability ratio values. The lowest value of the ratio was recorded in 2020. However, there was a significant increase in the ratio in 2021. More than PLN 0.13 of net profit was generated from PLN 1 of assets involved. This situation indicates that the financial situation of the analyzed enterprise improved, and knowledge was managed more effectively. Figure 7 presents the asset profitability ratio of Monnari Trade S.A.



Source: Own study based on the financial statements of Monnari Trade S.A. for 2016-2021.

Figure 7: Asset Profitability Ratio in Monnari Trade S.A.

In Monnari Trade S.A., there has been a significant regression in the asset profitability ratio value since 2019. The financial condition of Monnari Trade S.A. deteriorated from year to year. A net loss occurred in 2020 and 2021.

7. Discussion

The above analyses demonstrate that Wittchen S.A. coped well under the crisis conditions. Temporary drops were recorded in the years of the outbreak of the COVID-19 pandemic. However, the company maintained a stable position, and its financial situation has been constantly improving. The positive situation is the result of a range of actions taken by the management before and during the pandemic. The very successful online store has contributed to the ability to continue sales in difficult times. The activity reports indicate that the company continued to develop and adjust its online sales during the pandemic. The company also operates dynamically on marketplace. Diversified distribution channels enabled sales to continue. Furthermore, the Board Members of the company took specific actions and limited their salaries to PLN 1 gross per month. Negotiations with representatives of shopping malls resulted in rent exemptions and reductions during lockdown periods. Wittchen S.A. significantly focused on controlling and optimizing operating costs. Therefore, the decisions made by the management were crucial in reducing the negative effects of the COVID-19 pandemic. Wittchen S.A. also focuses on research and development, which contributes to constant changes, and thus implementing innovation. The importance of all types of IT solutions is confirmed by the fact of having an online store. The company also takes actions related to implementing the concept of sustainable development. The company carries out a number of activities aimed at the good of the environment. It implements them in products, but also in the company's headquarters and showrooms. The product range includes those that are made of recycled materials. Systems are installed at the company's headquarters and in the showrooms to reduce electricity consumption. The presence of knowledge management components is noticeable in the company's activities. Therefore, it should be indicated that Wittchen S.A. managed its knowledge correctly, and the company coped with the difficulties arising from factors beyond its control (Financial Statements and Activity Reports of Wittchen S.A. for the years 2016-2021).

The conducted analyses indicate that Monnari Trade S.A. recorded a net loss in the years 2020-2021. Thus, the company faced difficulties to effectively operate during the COVID-19 pandemic. Many actions were taken, as evidenced by the financial statements and activity reports, including negotiation talks with lessors, which were aimed at considering the global situation. The offer was expanded and adjusted to current conditions. The actions oriented to expanding the company's activities to new distribution channels were relevant. Innovation was implemented, the online store was improved, and remote work was introduced. Financial assistance was also obtained. It should be noted that the company also considers the ideas of sustainable development in its operations. The company constantly analyzes its activities, has implemented, among others, Environmental Policy, Social Policy. The carbon footprint has also been calculated. It is noticed that the company implements activities that are largely focused on meeting the assumptions of sustainable development. The suppliers with

whom Monnari Trade S.A. collaborates are mainly foreign suppliers, mostly from Asia. The problems with timely deliveries and frequent lockdowns could have been crucial for the company's financial situation. Such a situation did not result from internal problems, but from events beyond the company's control. Despite the difficulties, the company is currently achieving increasingly better financial results. Among the various activities that were undertaken in the enterprise, the presence of knowledge management components is noticeable. It should be emphasized that Monnari Trade S.A. managed its knowledge correctly during the crisis conditions since it survived in such difficult times. The management took various actions that must have significantly reduced the negative effects (Financial Statements and Activity Reports of Monnari Trade S.A. for the years 2016-2021).

The conducted analyses enabled the identification of knowledge management components used in crisis conditions. Despite being in the same industry, the companies took various actions. However, in both companies, innovation implementation, the use of sustainable development concepts, and IT systems were observed. These components contributed to proper knowledge management. It should be noted that each company and industry is characterized by different specificity, and thus, different components and actions may occur.

8. Conclusions

The theoretical considerations presented above emphasized the importance of using innovation, IT systems, and the idea of sustainable development in companies. It should be noted that these components are crucial in proper knowledge management in crisis conditions. Companies should continuously improve their actions to manage knowledge properly and effectively. Knowledge management focuses on the present but also serves as a type of indicator of the future. How the company manages knowledge now will translate into its functioning in the future. The interconnection and interaction of the above-mentioned components plays a fundamental role in knowledge management. The empirical research indicated that the occurrence of knowledge management components, i.e., innovation, IT systems, and the idea of sustainable development, allows enterprises to survive difficult times and, above all, provides opportunities to stabilize the financial situation. To sum up, proper knowledge management translates into a whole of functioning and achievement of favorable financial results in companies.

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