

INNOVATION MANAGEMENT IN THE CONTEXT OF BUILDING ORGANISATIONAL RESILIENCE

Joanna MACHNIK-SŁOMKA^{1*}, Elżbieta PAWŁOWSKA², Marta PENKALA³

¹ Silesian University of Technology, Faculty of Organization and Management;
joanna.machnik-slomka@polsl.pl, ORCID: 0000-0001-5387-5909

² Silesian University of Technology, Faculty of Organization and Management; Institute of Management;
elzbieta.pawlowska@polsl.pl, ORCID: 0000-0001-6863-5430

³ Silesian University of Technology, Faculty of Organization and Management; Institute of Management;
marta.penkala@polsl.pl, ORCID: 0000-0001-7876-7525

* Correspondence author

Purpose: The study aims to identify the role of innovation management in building organisational resilience. The rationale for undertaking research on this topic stemmed from the scarcity of scientific studies in this matter.

Design/methodology/approach: The research on this subject was conducted by examining a range of literature from both international and Polish sources.

Findings: The publication focusses on issues of innovation management and organisational resilience. In this context, the paper pays attention to the external and internal environment of the organisation. It's also important to emphasize that the research done identifies the lack of universal definitions of innovation and organisational resilience in the literature. Furthermore, analysis of the factors influencing organisational resilience was carried out. The article also discusses examples of good innovation management practices in the context of organisational resilience illustrating these factors.

Originality/value: The issue discussed in this article concerns innovation management, because it's increasingly being seen as a crucial tool for enhancing organizational resilience. Innovation management is crucial for building organizational resilience as it equips companies with the tools to adapt to change and anticipate future challenges. By fostering a culture of continuous improvement and strategic foresight, organizations can navigate disruptions effectively, ensuring long-term stability, competitive advantage, and sustained growth. Organizational resilience ensures stability and effective crisis response, both crucial for long-term success and sustainability of an organisation in a dynamic environment.

Keywords: Organisational resilience, innovation, innovation management.

Category of the paper: A literature review.

1. Introduction

In a rapidly changing business environment, organisations face challenges that require not only ongoing responses to change, but also strategic preparation for the future. Today, organisations are operating in a turbulent environment and are increasingly aware of the implications associated with emerging risks and their potential impact on their operational risk. According to the Marsh Risk Resilience Report¹, significant risks that may affect an organisation's operations include, but are not limited to, those posed by pandemics, cyber-attacks, new technologies, climate change/ESG (environmental, social and governance) issues, regulatory changes or geopolitical risks.

In the context of these emerging risks, global social, technological, economic and environmental changes, a key aspect is becoming innovation management increasingly treated as a tool for building organisational resilience. Organisational resilience refers to an organisation's ability to adapt, survive and thrive in the face of unpredictable events and diverse challenges (Tarapata, Wozniak, 2022). In the aspect of innovation management, the resilience of an organisation is influenced by a wide variety of factors. Important in this respect is the innovative capacity of organisations, their introduction of effective innovation management practices, which are not only a condition for survival, but also the foundation for long-term development, gaining and maintaining competitive advantage and achieving success.

The aim of this article is to identify the role of innovation management in the context of building organisational resilience. To achieve this objective, an analysis of the factors influencing organisational resilience was carried out and examples of good innovation management practices in the context of organisational resilience illustrating these factors are presented.

2. Methods

The literature analysis focused on determining the role of innovation management in the context of building organizational resilience was based on a systematic literature review (Czakon, 2020). The aim was to check the state of knowledge in the indicated areas. As part of this method, the basic literature on the subject was selected using databases such as Scopus and

¹ The Marsh Risk Resilience Report is based on the results of a survey conducted in early 2021 among nearly 1000 Marsh clients doing business in nine regions around the world and representing more than 36 different industries, including manufacturing, energy, real estate, retail, construction, healthcare, banking, and financial and professional services. The objective of the study was to assess the resilience of organisations to the following risks: pandemic, climate/ESG (environmental, social and governance), cyber/new technology, geopolitical, and regulatory in: Risk Resilience Report Keys to Building a More Resilient Business: Anticipation, Forecasting, and Agility, 2021.

Google Scholar. This was followed by a selection phase of publications, using the following keywords: 'innovation management' and 'organisational resilience'. The list of publications has been supplemented based on the 'snowball sampling'. One of the criteria for the selection of literature was the language of the publication (Polish and English) and the time range of the publication (2003-2024). As a result of the literature selection, a database of publications was developed. Appropriate bibliometric analysis techniques were also used. It was limited to keywords, fields (business, management and accounting, and social sciences) and document type (articles, conference publications, books, and book chapters).

Figure 1 presents an analysis of the number of publications in the period 2003-2024 on the concept of innovation management, based on the Scopus database.

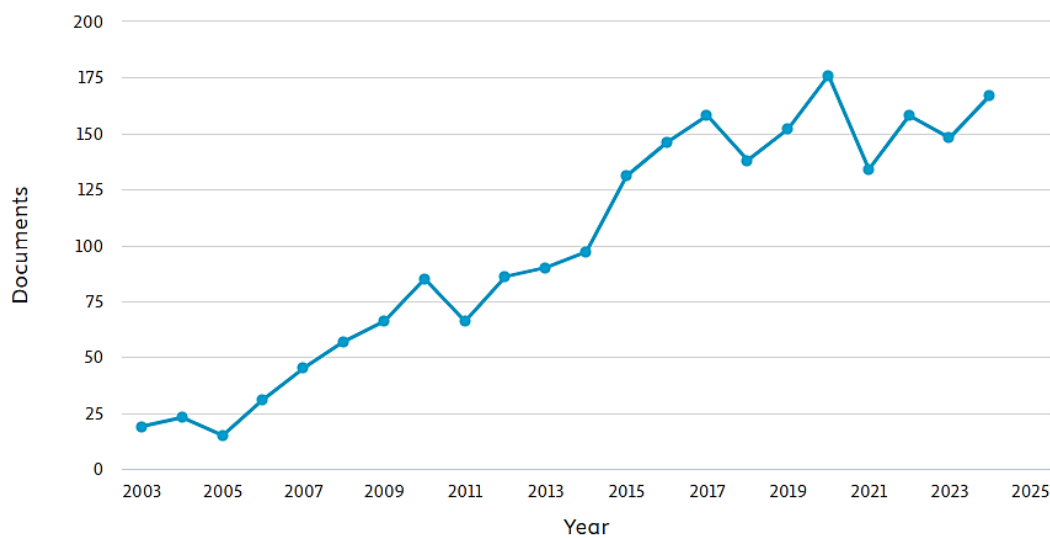


Figure 1. Number of publications on innovation management from 2003 to 2024.

Source: Scopus database.

Based on Figure 1, an upward trend in interest in innovation management among the researchers can be observed from 2003 to 2024. In the first decade, the graph shows a steady increase in the number of publications. It reflects the growing interest in innovation management due to the dynamic development of technology and increasing competition in many sectors of the economy. After rapid growth in previous years, the rate of growth slowed markedly between 2011 and 2016. The number of publications grew less rapidly, reaching around 100 papers per year. The years 2016-2019 are characterised by a renewed increase in the number of publications. This may be linked to global interest in digital transformation, innovation in business models and the implementation of new technologies. From 2020 onwards, fluctuations in the number of publications are visible. These may have been related to the disruption caused by the COVID-19 pandemic, which affected research and industry priorities. During this period, the number of publications fluctuates around 150 per year, indicating a continuing interest in the topic, albeit without a clear upward trend. It is, however, noticeable from 2023 onwards.

Figure 2 shows an analysis of the number of publications in the period 2003-2024 on the concept of organisational resilience, based on the Scopus database.

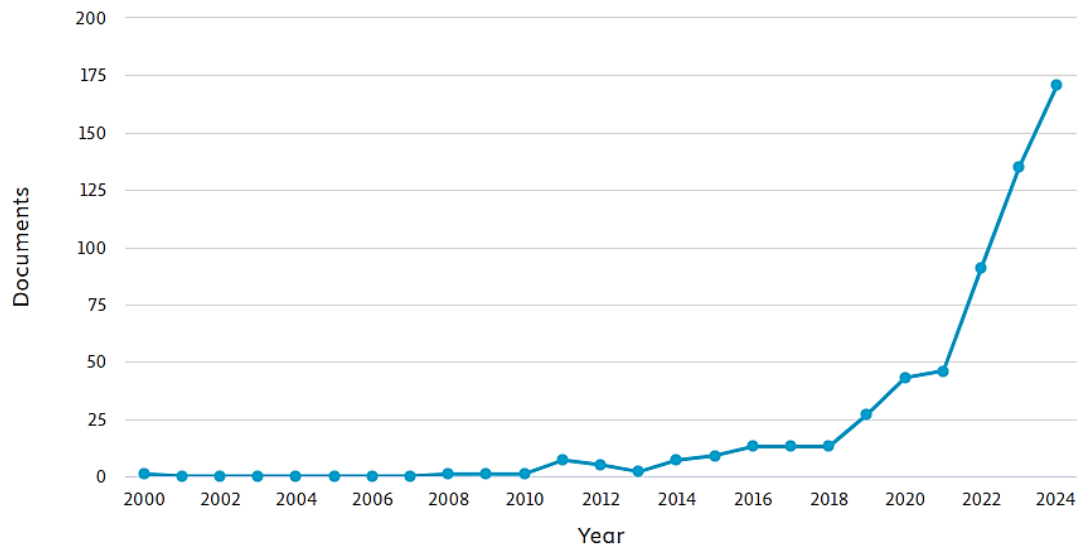


Figure 2. Number of publications on organisational resilience from 2003 to 2024.

Source: Scopus database.

Based on Figure 2, it is reasonable to assume that the number of publications remained very low between 2000 and 2010. It is likely that the topic of organisational resilience was not yet widely developed or was at an early stage of research. A gradual increase in the number of publications has been noticeable since 2010, but the rate of increase has been relatively low. This may be indicative of a growing interest in the topic, which however remained limited to a narrow group of researchers or specific industries. Since 2018, there has been a rapid increase in the number of publications. The most noticeable increase is observed from 2020 onwards.

3. The role of innovation management in the context of building organisational resilience

Today's organisations, due to an increasingly unpredictable and volatile environment, face the need not only to respond to current challenges, but also to strategically prepare for future changes and threats. In the context of these changes and threats, organisations need to build their resilience. An important role in this regard is played by innovation management, which is recognised by many authors as a key tool for building organisational resilience. Innovation management includes activities concerning the planning, organisation, coordination and supervision of innovation processes (Baruk, 2006; Łunarski, 2007). In this context, it is extremely important to prepare and implement an innovation strategy and to monitor activities undertaken in this regard. Innovation management can also be related to the search for

innovations based on available resources that will improve the competitiveness of the entity on the market (Pomykalski, 2001).

The issue of innovation management is also related to the external and internal environment of the organisation. Some researchers use the term 'internal environment' in the context of the internal environment (Studencka, 2016; Cheda, 2023). Its components are the conditions and forces operating inside a given entity (Piekara, 2010). They are understood to include those with managerial and leadership competence in the organisation, employees and the organisational culture (Griffin, 2008). The external environment, on the other hand, is considered as everything that surrounds the organisation externally, outside its boundaries and influences it or can potentially influence it (Griffin, 2008; Kozminski, Piotrowski, 2007).

In the context of the external environment, its dimensions should be considered: volatility, complexity, uncertainty. The first of these refers to changes in the activities of competitors regarding the development of technology, the tastes of potential consumers and the fluctuation of demand (Zhou, 2006). Under such conditions, organisations are forced to introduce new solutions to respond to changes in market needs. It must therefore be concluded that innovation is the basis for the existence and evolution of organisations. The complexity of the environment refers to its diversity. The more diverse the environment is, the faster and more dynamically managers should make decisions to monitor and analyse changes in the entity's environment (Szymaniec-Mlicka, 2014). The organisation's environment should also consider ongoing processes of an unpredictable nature (Bombola, 2014).

According to A. Chodyński (2021), innovation management in an organisation is related to the need for the organisation to have skills relating primarily to (Chodyński, 2021):

- a) Recognition, in particular on the basis of the analysis of the entity's environment made.
- b) Appropriate classification, related to the entity's strategy.
- c) Acquisition (e.g. of technology and sources of external knowledge) and creation of procedures in this respect.
- d) Generation in the form of the creation of technical solutions.
- e) Assimilating different types of innovation - process, product, marketing and strategic.

Bearing in mind the above considerations, one must conclude that innovation management is mainly about the ability to organise the innovation process appropriately. Innovation management is the process of systematically supporting and implementing new ideas, technologies and solutions in an organisation. It primarily involves identifying innovation opportunities, assessing their potential value and implementing them effectively. An effective innovation management strategy requires the creation of an environment that encourages creativity and collaboration internally and externally. Furthermore, flexibility is also key in the context of innovation management, as it enables an organisation to adapt quickly to changing market conditions and technological progress. It should be emphasised that effective innovation management increases an organisation's competitiveness by driving long-term growth and ensuring its ability to survive and thrive in an increasingly dynamic marketplace.

Within the framework of innovation management, a key issue is researchers' understanding of the innovation phenomenon itself. In the literature, a universal definition of the term has not been developed (Tohidi, Jabbari, 2012; Stenberg, 2017; Taylor, 2017; Kogabayev, Maziliauskas, 2017). The term is treated very broadly by researchers representing various disciplines. An analysis of the literature on the subject allows one to conclude that innovation can be seen primarily as an idea (Flett, 1998), the primary purpose of which is to solve existing problems (Kanter, 1995). It is also worth noting that innovation is commonly considered as the introduction of a new product, technology, or solution or a significant improvement of an existing one (Pahl et al., 2007; Kotsemir et al., 2013; Oslo Manual, 2018). In this context, it should be emphasised that innovations today are created based on cooperation between actors representing different sectors. Thus, they create added value for diverse stakeholder groups (Huczek, 2015; Wanicki, 2016; Zupok, 2017; Kowalski, 2020).

The issue of innovation is extremely important in the context of organisational resilience. Similar to the concept of innovation, no uniform definition of organisational resilience has been adopted in the literature (Linnenluecke, 2017). The concept is mainly treated by researchers from a social, psychological and strategic management perspective. Lengnick-Hall et al. (2011) defined organisational resilience as the ability of an organisation to create adequate responses adapted to a given situation and to take transformational action to take advantage of unexpected disruptions that may negatively affect the survival of the entity (Lengnick-Hall et al., 2011). Organisational resilience is also understood in terms of the ability of individuals, groups and organisations to absorb the stresses arising from the challenges they encounter. The aim of such activities is to return to assumed levels of functioning and to learn and grow, making actors stronger than before (Stephens et al., 2013). It is important to emphasise that organisational resilience is key to adapting to a changing global marketplace and coping with short-term disruptions such as natural disasters, cyber-attacks, physical threats or supply chain issues (Organisational Resilience: Good Practice Guide, 2024).

Innovation in the context of rapid and often unpredictable change enables companies to adapt faster to market changes, increase their operational flexibility. The implementation of new technologies, e.g. related to automation, digitisation, artificial intelligence (AI), increases organisational efficiency and flexibility, which in turn translates into increased organisational resilience to emerging changes, threats. The introduction of these technologies in the area of innovation process management, enables a faster response to disruptions in the supply chain or emerging new regulations. Indeed, innovation process management is related to the use of appropriate methods and tools aimed at initiating and consolidating innovative and creative attitudes (Brojak-Trzaskowska, 2014). The literature underlines the importance of external and internal factors (determinants) affecting the management of innovation processes (Rojek, 2017). Among the external determinants, the following are distinguished the state innovation policy, indirect impact factors (mainly concerning the sphere of science and education) and those related to the sector of activity (Chodyński, 2021). Internal determinants refer to the

organisation's strategy, cooperation with research and development units and financial resources. Appropriate knowledge management, the pursuit of employee development and skills acquisition, and organisational culture are also important (Fraś et al., 2015). Innovation process management mainly consists of deciding, organising and controlling innovation-related activities. These activities are important in the context of effectively and efficiently achieving the company's innovation goals (Brojak-Trzaskowska, 2014).

Of particular importance in building organisational resilience in the context of innovation management is dynamic innovation capability, which, in the face of emerging changes in the environment, contributes to the renewal, integration, reconfiguration of resources (Teece, 2007; Wijekoon, Galahityawe, 2016). The concept of dynamic innovation capability refers to the capabilities managers use to manage innovation in response to the challenges posed to organisations by a dynamic environment (Cheng, Chen, 2013; Helfat, Martin, 2015). In the face of contemporary and dynamic change, among the various organisational capabilities, a special role is attributed to this capability primarily because it facilitates the recognition of change on the one hand and adaptation to it through innovation on the other (Hill, Rothaermel, 2003).

In summary, innovation management plays a significant role in building organisational resilience through increased adaptability of the organisation to changing conditions as well as increased operational flexibility.

4. Factors influencing organisational resilience in the context of innovation management

In building an organisation's resilience, it is important to take a broad view that considers not only internal factors, but also the external environment in which the organisation operates, including the industry. It is therefore important to have a horizontal approach that considers different factors and perspectives and to develop appropriate support mechanisms, e.g. in the form of identifying metrics and responding to them quickly.

Significant factors in innovation management that have an impact on increasing the resilience of an organisation include: the organisation's innovation orientation, innovative organisational culture, knowledge management, human capital, leadership to support innovation, networking with partners, investment in research and development, operational flexibility, risk management.

To build organisational resilience, an innovative organisational orientation, an appropriate innovation strategy and an innovative organisational culture that promotes, among other things, creativity, openness, acceptance of risky initiatives, trust, learning and experimentation are crucial (Tidd, Bessant, 2013; Lewicka, 2012). Organisational culture, which is the foundation of an organisation, should support innovation, i.e. the ability to create and implement

innovations (Sitko-Lutek, 2014; Kraśnicka, Głód, Wronka-Pośpiech, 2016). Such organisations are better prepared to face unexpected challenges and are more resistant to change.

For the effective management of innovation creation and implementation processes, the management of knowledge and organisational learning is important to better prepare organisations to cope with the uncertainty and complexity of the environment (Nonaka, Takeuchi, 1995). Effective knowledge management, which includes the acquisition, collection, sharing and application of knowledge, is key to innovation (Oslo Manual, 2018). Organisations that can effectively manage knowledge, quickly assimilate information and use it in decision-making processes are better prepared to respond quickly to changing conditions and are better able to cope with a dynamic environment.

Strengthening the resilience of an organisation in the context of innovation process management can be achieved by an innovation ecosystem, networking with external partners from the public, scientific and economic sectors (Dolińska, 2005). Such cooperation enables better and faster access to knowledge, new ideas, sources of innovation, markets and technologies, which translates into faster response and adaptation to emerging changes and market opportunities, and better opportunities for growth in a changing environment. This is linked to the concept of open innovation, which targets the acquisition of innovation from various sources, both internal and external facilitating access to new technologies and markets thereby increasing the adaptability of the firm (Chesbrough, 2003).

Building organisational resilience requires a significant commitment from managers, employees, as well as incurring financial resources and creating accurate analyses. A key factor in increasing innovation and organisational resilience is leadership focused on promoting innovation, creativity, openness, inspiring and supporting its employees (Kotter, 1995; Eva, Robin, Sendjaya, van Dierendonck, Liden, 2018). Agile decision-making, people orientation, implementing new initiatives in response to market opportunities, and analysing failed projects or decisions so that organisations learn from their mistakes are also of considerable importance.

To build the long-term resilience of an organisation, continued investment in research and development (R&D) is key. Investment in this area is the foundation of innovation. Companies that systematically invest in R&D are better equipped to launch innovative products and adapt to technological and market changes, thus gaining and maintaining a competitive advantage in a dynamic environment (Chesbrough, 2003).

Operational flexibility allows companies to adapt quickly to changing market conditions. It is of great importance in carrying out innovative activities, managing innovation processes. New technologies, in particular digitisation and automation, can significantly increase the flexibility and efficiency of operational processes (Westerman, Bonnet, McAfee, 2014). Operational flexibility therefore influences both innovation and organisational resilience.

Another factor in building organisational resilience is risk management. Companies must have the ability to identify, assess and manage the risks associated with innovation activities (Hillson, 2003). This allows companies to adapt more quickly to unexpected events, risks that

may occur. This plays an important role in ensuring the sustainability and growth of the organisation.

Building and strengthening organizational resilience also depends on financial and economic factors. By optimizing operations and processes, as well as controlling costs and debt, organizations can create favorable conditions before a crisis occurs. In this context, analyzing the actions taken by competitors is also crucial (Hamidavi et al., 2023).

Considering these factors may enable an organization to better adapt to changes, thereby increasing its resilience.

5. Examples of best practices in innovation management in the context of organizational resilience

As mentioned, building organizational resilience involves adopting a proactive approach, characterized by the ability to adapt skillfully to changing conditions, act with flexibility, and focus on continuous development. Emerging changes and threats compel organizations to enhance their resilience to ensure continued existence and become more competitive. From the perspective of innovation management, organizational culture, investment in human capital, managerial competencies, and the ability to implement innovative solutions can play a significant role in building resilience. However, building organizational resilience does not rely on a single, universal solution. It is crucial to focus on multiple factors and respond quickly to changes. There are numerous examples of companies that, by employing appropriate innovation management practices, increase their resilience to emerging threats, contributing to their growth and success.

One interesting determinant of building strong organizational resilience is organizational culture, which plays a significant role in innovation and its management. An analysis of successful companies reveals that they have developed an organizational culture where innovation is seen as everyone's responsibility and a goal that employees at all levels strive to achieve in their daily work (Bolton, 2013). A noteworthy example of such an organization is Apple. Apple's culture fosters experimentation among scientists and developers, as well as the formation of informal task forces and problem-solving teams. To encourage the pursuit of creative solutions and prompt decision-making, the norms and values emphasize employee decision-making authority and the freedom to find their own solutions. The role of the manager is not to monitor or supervise employees' activities but to act as a facilitator, providing employees with the resources they need to solve problems independently. Formal decision-making procedures are kept to a minimum, while direct communication is the norm within the organization. Effective communication among employees also plays a crucial role, enhancing their engagement and ability to tackle challenges together (Young, 2021). Shared norms, values,

goals, and employee identification with the organization can contribute to strengthening it, ultimately increasing its resilience to potential threats.

Another interesting factor closely related to organizational culture and significantly impacting the building of organizational resilience is investing in human capital. Contrary to popular belief, organizational success is often not determined by the budget allocated to research and development, nor does technology seem to play the most critical role. Research clearly indicates that the most effective innovation strategies are those focusing primarily on people and human capital. These strategies involve attracting, engaging, and motivating key talents in innovation, fostering a culture of innovation by promoting and rewarding entrepreneurship and risk-taking, and developing innovative skills among all employees. This is also supported by studies from Y. Salamzadeh et al. (2013), which show that investing in human capital has a significant impact on staff creativity and innovation (Salamzadeh et al., 2013). A notable example of an organization that invests in human capital is Alphabet (Google), which is distinguished by both its business success and innovation. Alphabet excels in IT solutions, business techniques, experimentation, improvisation, analytical decision-making, co-creation of products, and other unique forms of innovation. The results achieved by the company demonstrate the value of investing in a well-thought-out human resources policy closely aligned with the company's market strategy. The company invests in various training and development programs, offering employees access to a wide range of online courses, workshops, and mentoring programs. The outcome of these efforts is not only high productivity but also innovation and the ability to quickly adapt to changing market conditions. Investing in human capital leads to the diffusion of knowledge and creativity among employees, supporting the company's goals and serving as a crucial foundation for building organizational resilience.

The managerial staff plays a significant role in building organizational resilience. Their role stems from the nature of their work, which is responsible for the overall development of the organization. A key element is their flexibility in action, openness to change, and the development and implementation of contingency plans and procedures that help the organization respond to crises and unforeseen situations (Fernando et al., 2020). This is crucial for maintaining stability and ensuring the survival of the organization in a changing environment. An interesting example of managerial adaptation to changing conditions is Amazon, which ranked third among the most innovative companies in 2023. During the COVID-19 pandemic, Amazon began aggressively hiring to keep up with the surge in online shopping driven by the pandemic. However, since then, the company has started to gradually reduce its workforce as consumers returned to physical stores and its retail business no longer grew as rapidly as in recent years. This situation led the management to make decisions to cut expenses, due to concerns about a recession, rising inflation, and a sharp increase in interest rates. Amazon reduced its warehouse space, paused some experimental projects, and shut down its telehealth service. This example illustrates how management adapts to changing conditions by quickly adjusting processes and structures to new challenges, thereby increasing the organization's resilience to emerging threats.

Another crucial factor in building organizational resilience is an organization's focus on innovation. This involves the ability to adapt business activities to new realities, including the organization of key processes, the functioning of supplier networks, and consumer behavior. Research by Boston Consulting Group shows that organizations that doubled their spending on innovation during economic downturns—seizing the opportunity to invest and strengthen their market position—achieve better long-term results compared to their competitors. An interesting example of a company highly oriented towards innovation is Tesla, which specializes in electric vehicle production. Tesla has become a leader in developing batteries for electric cars and creates hardware and software for autonomous vehicles. Recently, it has also begun expanding into the field of humanoid robots. Its mission is to accelerate the world's transition to sustainable energy. The company's ability to introduce new solutions and adapt to a changing environment has enabled its expansion and established a strong market position.

The concept of open innovation also plays a significant role in increasing organizational resilience. There are many examples of companies successfully implementing innovation management strategies based on open innovation. One such example is Procter & Gamble, which is recognized as a pioneer in adopting this strategy. The company drives innovation not only through internal sources but also through external ones, including collaboration with external partners, thus accelerating the process of bringing innovations to market (Huston, Sakkab, 2006). This strategy enhances organizational resilience by strengthening the company's ability to adapt. Another company employing an open innovation strategy is IBM. IBM implements open innovation by collaborating with research institutions and universities, developing programs that promote the advancement of technologies and enabling adaptation to rapidly changing technological environments and markets (Gartner, 2013). Intel, on the other hand, fosters innovation through collaboration with other organizations within its ecosystem and invests in open innovation via its venture capital unit, Intel Capital, which supports the development of technology startups. This approach provides access to knowledge, new technologies, and markets, thereby increasing the company's resilience and contributing to greater competitiveness.

Another interesting example of a company that implements innovation through an integrated approach to innovation management, knowledge management, and research and development is Nestlé. The company employs a model that combines research and development activities with marketing efforts, allowing for a better understanding of customer needs. This approach contributes to more effective innovation implementation and improved market adaptability while simultaneously reducing the negative impact on the environment. This activity is supported by digital technologies, including artificial intelligence (AI).

The analysis of the examples presented above indicates that organizations focused on innovation not only invest in the development of their employees but also build an organizational culture based on shared norms, values, and effective communication. They are also oriented towards flexibility and rapid adaptation to changing conditions, which

ensures their stable position in an unstable environment. These examples show that effective innovation management—encompassing investments in research and development, fostering an innovative organizational culture, managing knowledge, network collaboration with external partners, and operating within an innovation ecosystem—is crucial for building organizational resilience in a dynamically changing environment.

6. Discussion and summary

Innovation management plays a crucial role in building organizational resilience in the face of dynamic challenges and changes in the modern world. However, building resilience in the context of innovation management requires identifying, understanding, and integrating multiple factors, such as flexibility, investment in research and development, an innovative organizational culture, human capital, innovation-oriented leadership, knowledge management, risk management, network collaboration with partners, and open innovation, among others. Organizations that effectively manage innovation by leveraging their dynamic innovative capabilities are better prepared to handle market challenges and changes. Implementing effective innovation management practices is essential for long-term success and competitiveness in the global market. Examples of analyzed companies, such as Apple, Alphabet, Amazon, Tesla, IBM, Intel, Procter & Gamble, and Nestlé, illustrate how effective innovation management can enable survival in a turbulent environment and rapid adaptation to changing conditions, resulting in higher efficiency and a better competitive position in the market.

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