

Article

Integrating Innovation into Business Strategy: Perspectives from Innovation Managers

Daniel López *  and Miquel Oliver 

Network Technologies and Strategies Research Group, Department of Information and Communications Technologies, Pompeu Fabra University, 08018 Barcelona, Spain; miquel.oliver@upf.edu

* Correspondence: daniel.lopez17@estudiant.upf.edu

Abstract: This article presents the results of a literature review and the preliminary results of interviews with directors and innovation managers of large companies on the importance of innovation in business strategy, innovation strategy, and the factors they consider when choosing their strategy. Therefore, the study determines nine statements. There is no global consensus on the definition of innovation, which could affect its relevance in business. This contributes to the fact that the innovation department is not integrated as the main lever of the core business. A business strategy needs innovation, and a business innovation needs its own strategy. In fact, it is positive to incorporate the innovation strategy into the business strategy to improve productivity, performance, and sustainability. The innovation strategy is framed in a multidimensional way, and the innovation strategies are oriented to the offering, efficiency, and business plan. In turn, there are factors (internal and external) that affect or influence the decision of companies when deciding on an innovation strategy. It is also concluded that it is reasonable to consider that we can use the business strategy methodology to determine the innovation strategy. Future research could delve into how to establish a framework that defines the innovation strategy methodology with a unified approach where the main strategies and their components are revealed.

Keywords: business; innovation; strategy; technology; competitiveness; performance; business model; open innovation



Citation: López, D.; Oliver, M. Integrating Innovation into Business Strategy: Perspectives from Innovation Managers. *Sustainability* **2023**, *15*, 6503. <https://doi.org/10.3390/su15086503>

Academic Editor: Daniel Arias Aranda

Received: 14 March 2023

Revised: 6 April 2023

Accepted: 8 April 2023

Published: 11 April 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The Working Group on Statistics on Science, Technology, and Innovation from the European Commission, based on a survey across 22 countries [1], states that 51.2% of the European SMEs companies declare themselves as “non-innovators”, which means companies that did not introduce any innovation in the three years reference period. A more recent study in the region of Catalonia, by IDESCAT [2], concludes that only 25.1% of companies in Catalonia made product or business process innovations. Both figures are coherent and show that the gross of the industry lacks any innovation strategy to increase its competitiveness.

It can be found in the literature [3–8] that there are companies that have difficulties and inhibitors to carrying out innovation, such as being too oriented to short-term results or experiencing economic restrictions, a lack of innovation culture, talent limitations, etc. One of the different hypotheses of this low level of innovation in the industry is that innovation is a field that does not have a commonly agreed definition to clearly size its scope. This lack of a common definition leads to misunderstandings about innovation, making it difficult to measure, decide, plan, and deploy any strategy.

If managers want to develop an effective strategy amid a constantly changing market, they need to use innovation cleverly to boost their organization’s competitiveness [9]. This strategy is a general framework made up of an integrated set of options for the achievement of business objectives, and an action guide that receives feedback from the action-result

binomial [10]. Hence, innovation should take a fundamental role in the company's business strategy because it is regarded as one of the key factors of success and an essential strategic component to survive in an increasingly competitive market environment [11–14]. Now, due to the disruption of digital technologies and the complexity of leading dynamic markets in a sustainable way, the average age of the companies in the S&P 500 has been reduced to less than 20 years, versus the 60 years in the 1960s [9]. So, ensuring that innovation is embedded into a business strategy moves organizations to innovate in the long term, helping them survive beyond the next financial year [15].

Innovation is considered a key factor in the organization's performance [16]. But what kind of innovation is needed? How is the strategy defined? What actions need to be taken by companies toward innovation? Business innovation needs an innovation strategy that drives companies to decide on the innovation plan that best suits their corporate objectives, regulates their processes, and explains how to use the resources to generate value and competitive advantage through innovation [17,18]. Having an innovation strategy that aligns with the business strategy is a key element in innovating sustainably over time and achieving better financial results [19]. However, there are no blueprints for the innovation strategy [20], and few companies have a clear one [17]. PricewaterhouseCoopers (PwC) reveals that nearly 20% of companies do not have a well-defined innovation strategy at all (from a survey that includes almost 600 innovation leaders in companies of different sectors and sizes around the world), and almost half of the companies do not have cultural support and strategic alignment between innovation and business [19]. In fact, only 7.53% of Catalan companies have a specific innovation strategy [2].

There is no universal guide to innovation, but it is possible to increase your chances by putting together the right components [21]. The potential level of the innovation strategy depends on the quality of its individual components [22], which will influence or determine which strategy best fits the company. Consequently, achieving success is not as simple as applying the best practices in the sector, hiring the best innovation leader, or not copying what others are doing; it is more complex [23].

Therefore, in this research, we ask three questions:

- What are the innovation strategies most used by companies?
- What are the factors that determine or influence which innovation strategy to choose?
- What is the methodology used to establish an innovation strategy?

As a result, we have identified three necessary components for the innovation strategy: the dimensions, which will define the framework of the company's competitive space for innovation; the strategy's taxonomy, addressed to where, when, and how to compete; and, the factors, both internal and external, that can influence or determine the company's innovation strategy decisions. Likewise, we deduce that the business strategy methodology could be applied to the innovation strategy (analysis, formulation, and implementation), although no specific literature on this process was found. Therefore, this research is also based on the responses of surveyed innovation managers and directors of large companies operating internationally on the relevance of innovation in business strategy, the need for an innovation strategy, and the factors they use and consider.

A limitation of this study and proposal for future research is to delve into innovation strategies, making a broad list of strategies and factors to be considered by companies. At the same time, it would be very relevant to delve into the innovation strategy methodology so that companies can conceptualize a framework of where and how to act.

2. State of the Art

2.1. Context and Definitions

Without a globally accepted definition of innovation, it is difficult to have a common understanding when we talk about that term. Although there are great efforts from the research business community to achieve a global consensus on the definition of innovation, the analysis of 208 definitions and the proposal made by [24] seems too recent for companies to have assumed the global conception of what innovation is. Here, the authors conclude

that “innovation is the operationalization of creative potential with a commercial and/or social motive by implementing new adaptive solutions that create value, harness new technology or invention, contribute to competitive advantage and economic growth”.

Sometimes the word innovation is associated with creativity or invention [25–27]; while one’s companies expect a disruptive innovation [28], others only could consider incremental innovation due to its operational and short-term results [20,29]; some companies tend to a default association between technology and innovation, forgetting that there is innovation beyond technology [30]; and some policy-makers and researchers explain that R&D is in the linear model of the innovation [31]. In fact, “research” is identified as the first stage of innovation (the three stages are: research, transformation, and commercialization) [32].

Specifically, the term innovation in business ecosystems and jargon is also called *business innovation*. In this case, one of the most accepted definitions comes from the Oslo Manual [33], which states “A business innovation is a new or improved product or business process (or a combination thereof) that differs significantly from the firm’s previous products or business processes and that has been introduced on the market or brought into use by the firm”. However, the level of novelty of every improvement is something difficult to measure and adds more complexity to the definition of innovation [34,35]. Here, for example, each new version of the iPhone which includes new capabilities, i.e., 5G connection, in some contexts would be considered an innovation and not in others. Therefore, the culture and innovation experience of each company as well as their expectations and technological capabilities may change that view on how innovative a product is.

A few examples of the different ways that innovation can manifest are:

- (1) Product innovation, where Apple’s iPhone revolutionized the mobile phone industry.
- (2) Process innovation, where the assembly line revolutionized the manufacturing process and enabled the mass production of goods.
- (3) Business model innovation, where Netflix disrupted the traditional movie rental industry with its subscription streaming service.
- (4) Organizational innovation, where Google encourages creativity and collaboration among employees.
- (5) Open innovation, where LEGO allows customers to submit ideas for new products; or
- (6) Marketing innovation, where Red Bull sent a man to the edge of space in a helium balloon.

A better understanding of innovation can contribute to its adoption in the company’s culture, counting on it being a fundamental pillar for competitiveness and business performance. For example, up to three-quarters of productivity development in the European industry can be attributed to innovation [36], and companies that apply innovation in their strategies produce better performance [37]. Moreover, innovation is positive for customers because they can enjoy better products and services; positive for businesses because innovation provides sustainable growth and development; and positive for the employees because innovation is a challenging job associated with higher intellectual knowledge and salaries. In summary, for the whole economy, innovation represents higher productivity for all of society [38].

Innovation can produce a breakthrough, such as creating and bringing a new product or service to market, or it can create a series of smaller innovations that produce efficiency or new ways of working that create profitability [39]. We might think that all investment in innovation does not have a direct return, and it is true, but companies accumulate internal transformative capacities associated with the innovation process that produce indirect effects that can overcome the direct effects of the innovation [40].

According to [41], there are five types of innovation that companies could apply:

- The process innovation that aims to increase efficiency and productivity often relies on technological advancements and investments.
- The service or product innovation that involves creating significantly improved or entirely new services or goods.

- The marketing innovation involves developing marketing strategies and improving service quality to attract potential markets and deliver quality service to target markets.
- The organizational innovation encompasses changes to managerial techniques, strategies, and structures to improve overall performance. It involves not only improving staff responsibilities and duties, but also developing new methods to coordinate and control employees.
- The business model innovation should be viewed as a strategic innovation since it allows organizations to change or improve their business model, which can increase their market share by attracting new customers. Furthermore, combining technology and business model innovations can even alter the industry structure; therefore, an important aspect of innovation management is understanding its relationship with strategy.

So, the definition of innovation assumed by every organization influences the role of innovation in the company; for example, it facilitates or restricts actions, affects how to do innovation (internally or externally) [42], or is related to management (duties, functions, and responsibilities). Sometimes, the more technical the conception of innovation is, the further it is from being a strategic factor for the business. In these situations, the innovation is perceived as individuals experimenting with unstable solutions that bring more problems instead of adding value to the business, thus limiting the department and therefore its power to transform. The association can endanger the business and decouple the relevance of the innovation department in the organization, and the hierarchical structure influences the innovation process, almost including the idea generation and selection [43–45].

Innovation is not just a single department's responsibility, but rather, a key capability that should be integrated into an organization's overall strategy [46].

Realizing that innovation is of primary importance in the present and future of the company, the innovation department gets larger dimensions: the greater the weight in the organization, the more key it will be for the business strategy. The innovation department should be positioned as a horizontal department in the organizational structure as a transversal area that collaborates with the rest of the departments to accomplish the objectives of an organization. With horizontal innovation, the decisions are close to the idea generators, helping the cross-participation and adoption, which is like democratizing the innovation in the company [47].

Innovation results from collective efforts and ideas, so the ability to innovate is reflected in the creative use of resources (talent, processes, technologies, products, etc.). For this, the ideal situation in a company is that all departments have an innovative mentality, so that creativity not only has to come from the innovation department. A company must have organizational structures that support and encourage innovation, cultural environments to make innovation succeed, and processes to convert ideas into innovation [48].

The innovation department must manage the innovation process in the company, which implies the internal promotion of innovation culture, the definition and implementation of methodologies and processes, the testing of new technologies, the correct mechanisms and agreements with external resources, and *hiring* the right talent, to name a few [21,49]. Innovation requires leadership, sponsorship, and focus to become a key business asset [50].

The innovation process normally uses new combinations of existing factors [51], without ruling out that a new creation or invention may also occur during the process, or that an input toward R&D is generated.

Companies must define, as part of their innovation strategy, their innovation model, which is mainly composed of what methodology will apply and the processes that will follow to manage innovation. The literature shows references in a variety of innovation models with some variations between them, understanding consequently there is no globally accepted model. Normally, the innovation process is shown graphically with a funnel, where the first stage is to generate ideas, and step by step, the number is reduced to finally achieve the form of an innovation result [52–55]. Some authors have coincidences in

the meaning of stages, but use different names to denominate each section. In any case, the taxonomy coincides with three main points: the generation of ideas, selection, and testing. In turn, the procedure has some variations depending on who originates the process and how, for example, if the pull is from the market (user needs), or if the push is from the company using its differentiation value (technological knowledge, strategic agreements, etc.), or even a combination of both [56].

Firms can obtain knowledge from internal resources (their employees with their capabilities) and external resources through getting licensing, acquiring other firms, R&D subcontracting, or converting external hiring knowledge by hiring relevant researchers [57]. In fact, internal and external R&D should be considered as complements, not as separate options [58].

Although innovation is not just technology, there is no doubt that it is a key tool for optimization and efficiency and serves as a powerful instrument for creating differential value. New technologies provide companies with new capabilities for the creation of new business models, reimagining the value offered to customers, convincing them to pay for the new value, and generating benefits for the company [59].

As commented before, a step forward in consolidating the relevance of innovation in business is when the company wants to innovate and tries to change or improve its business model, which is called business model innovation (BMI). A business model is how a company creates value while delivering customers' products or services. It is a model that describes how the business runs, a competitive strategy that explains how you will do better than your rivals. In order to pursue business model innovation, organizations need to consider new ways of competing in the market, which may involve breaking with past practices in at least one area, such as value-chain design, conceptualizing customer value, or identifying potential customers [60]. In fact, [61] states that strategic innovation requires strategic experiments to position the company ahead of competitors.

The BM can be considered as a blueprint or a roadmap to accomplishing the vision, where we must identify and define the feasibility (can we build it?), the desirability (do customers want it?), and the viability (can we generate value?). However, once the companies are operating their business models, the world continues to evolve (new competitors, new technologies, new user preferences . . .) that make the competitive advantage of companies temporary, and they need to evolve their BM toward new business models. The BMI approaches the market differently compared to competitors and transforms those changes into a competitive advantage, thanks to innovation [62]. In times of crisis, the easy and tentative solution for companies is to increase the prices of their products, but the answer must be to innovate in the business model to reduce costs in operations, add new features, invent new products, and more [63,64]. BMI involves people, processes, technologies, and governance to facilitate monitoring and control and pursue the organization's strategic objective. Examples of these new approaches with excellent results are when, for example, Nestlé sold coffee machines at a low margin to increase its profits by selling the capsules, or when IKEA went from selling by mail order to selling disassembled furniture at a low cost [65]. Starbucks did not invent coffee but revolutionized the sector by associating the brand with a new lifestyle.

The innovation metrics are one of the main concerns of companies, especially those that do not believe in their return. Despite the existence of the indirect benefits of innovation discussed above, managers are under pressure from investors who need short-term direct income from all lines of business, including innovation. Business innovation must be tackled systematically to improve the odds of success, and measured and controlled, by its nature, in a different way than the normal production department does, since the company does not have the appropriate processes or metrics to efficiently measure a new business model [66]. The premature use of ROI (Return on Investment) to measure innovation is not a good idea because it makes the innovation less likely to achieve the objective, a process that is not normally associated with instant results [54]. Nevertheless, the measure of innovation uses qualitative and quantitative modes for each stage of innovation. For example, one

possible quantitative metric for research could be the time and money invested, or the number of ideas collected in the ideation phase. In qualitative aspects, we can measure the development with 'Do we have the right people involved in the project?' or on the market stage with 'Do we really understand our customers?'.

An innovation mindset helps business development at three levels of ambition: (1) improve existing products, serving existing markets and customers; (2) expand the current business to new ones, adding products to the nearest markets and customers; and (3) create new products for markets that do not yet exist [67].

However, how is innovation subsidized? What are the common ways for companies to subsidize innovation? There are some sources of financing for the design and development of the innovation [68]. One way is through the provision of government subsidies, which seems to perform better if it is focused on a few companies rather than offering very dispersed aid [69].

Adding to the territorial and country government, in Europe, one of the main sources for the development of Research and Innovation is the Horizon program promoted by the European Commission [70].

Some companies have an internal structural policy to invest a percentage of their annual income in innovation. For example, Apple invests in R&D about 5% of its annual revenue, Google more than 16%, Meta over 13%, and Amazon invests 28% [71]. Other companies make investments based on their lines of business, as part of their business development.

Another mechanism to subsidize innovation is crowdfunding, a way of raising money by collecting it from many people through online platforms [72].

Venture capital is another possibility, addressed to fast-growing companies that promise scalable business projects [68], and is usually associated with technological barriers that protect investment and mark differentiation.

An alternative is to participate in an external contest, a publication of challenges where the participants present solutions to the challenges exposed. The prize is usually the implementation of a Proof of Concept to validate the innovation [73–75].

Young companies called "startups", self-employed people recognized as "entrepreneurs", or the segregation of companies called "spin-offs" also participate in support and mentoring programs, such as the one offered by [76–81].

Once the innovation is done, the company should transfer it to its appropriate department, such as how the Research Center or University Research Group transfer their assets to a company [82], (understanding 'transfer' from the point of view of the receptor as the adoption of innovation, technology, or knowledge, that has been developed out of the department [83]).

Normally, the innovation team does not have the appropriate dimension, skills, and objectives that a maintenance group can have. Therefore, the innovation team cannot do the correct user support, maintenance, and daily operation for a product; for this reason, another department must take the solution (MVP, for example), and finish it (for example, make a final and complete product, scale it for a larger number of users, add new features, improve performance, design of user experience and user interface, etc.).

Proof of Concept (PoC), prototype, pilot, and MVP are terms widely used in the innovation process, concepts that do not have a globally accepted definition. The different actors can understand different meanings that could cause misunderstandings about what they really are and their scope [84,85].

Proof of concept is a term generally associated with the initial stages attributable to the evidence derived from an experiment, which demonstrates that the idea (product, service, etc.) is feasible [85]. Therefore, the objective of the proof of concepts is precisely to obtain evidence to validate the innovation [86].

Continuing with the process, we find the prototype that can be defined as the result of the physical or digital materialization of the critical elements of the design [84]. Next, the definition of Minimum Viable Product (MVP) comes from the Lean Startup method-

ology [87], in which the developed product is elaborated and improved with an iterative process with continuous feedback from the first users. The MVP usually has very limited functions, those essential to be used by users [88,89], a formula widely used in startups (organizations that develop new products and services under conditions of very high uncertainty). Companies are also adopting this practice to protect their investment (instead of investing in a great product with a deliverable at the end of the project, companies tend to prefer agile methodologies with partial deliverables). This practice allows them to test early results while trying to take advantage of the first move [90]. Investment in innovation does not guarantee the expected results. The main objective of this investment is to validate if the idea is feasible instead of investing in a big project, protecting the time, money, and morale of the employees.

Another strategic transformational process in companies, that address innovation as one of the major expected outcomes, is digital transformation [91], two interconnected concepts where one (digital transformation) uses the other (digital innovations) [92]. It does not only refer to technological changes, but also implies an innovative change in business operations, management, and organizational structures, and affects processes and products. In addition, the transformation aims to align the culture of the company to adapt it to the changing needs of the environment, and it becomes a strategic mainstay for the business [93]. Prioritizing purpose instead of simply seeking growth can lead to sustainable growth and keep employees motivated and committed to achieving a meaningful goal [46].

Each organization will decide whether to move into the red or blue oceans according to its strategy: the most innovative tend to be in the blue oceans seeking to invent and capture a completely new demand, while others will remain in the red improving their offering. Depending on their business strategy, each one will choose their market where, when, and how to compete [94], but carefully as the strategy is not to be taken lightly because acting prematurely on innovation can be counterproductive for the organization, especially for its brand image and reputation [95].

Although not all companies believe that they do not have a need to innovate, there are several reasons why organizations should do so, including expanding the range of products and services offered, increasing their existing market share, entering new markets, reducing labor costs, improving the speed of delivery time of products and services, improving working conditions, reducing the impact of environmental conditions, reducing the cost of energy, and more [33]. Therefore, it should be plausible to say that when we talk about “innovation”, it means “business”, and it does not refer to a simple technological and independent project.

2.2. Methodology

This study aims to investigate the topic of business innovation and its strategy by conducting an exhaustive literature review and a set of interviews with experts and managers on innovation and directors of innovation departments of main companies. The methodology used in this study includes the following steps:

Literature Review: An extensive literature review, with 139 references, was conducted to identify the most relevant and recent studies on innovation. Databases such as Scopus, Web of Science, and Google Scholar were used to search for relevant articles published mainly between 2010 and 2023. Keywords used in the search included “innovation”, “business innovation”, “innovation strategy”, and “innovation management”.

Selection of Studies: The studies were selected based on their relevance to the research focus of the study, which is to explore the factors that contribute to successful innovation. The studies were also selected based on their research design, methodology, and quality.

Analysis of Studies: The selected studies were analyzed to identify the common themes, trends, and patterns in the literature. The analysis focused on the factors that contribute to successful innovation, such as leadership, culture, resources, and collaboration.

Interviews: A set of semi-structured interviews with eight innovation experts and managers, heads of innovation departments of major companies, was conducted to collect

additional information on the factors that contribute to successful innovation. To gather insights from industry experts and managers on innovation strategy, we conducted a purposive sample of innovation directors and managers from large companies with a proven track record in innovation. The selection criteria for interviewees included having extensive experience of at least 15 years in leading innovation efforts within their respective organizations and being involved in developing and implementing innovative products and services. We ensured diversity in selection by targeting companies from different industries and regions, with different sizes and levels of innovative maturity.

Although we searched for parity between men and women, we found more men in managerial positions than women, however, we were able to interview some women who represent 12.5% of the total. According to the study from [96], women hold only 12% of executive positions in the field of innovation. Since the participants were directors and managers of business, innovation, and strategy departments, their schedules were complicated. Therefore, the interviews were scheduled to last 30 min, rigorously respecting the time established.

Because the participation agreement was to maintain the anonymity of the names of the interviewees and the companies where they work, the data is not publicly available. According to the participants, they had to ask their companies for permission to make it official, with the risk of not obtaining it. They also assured that the answers could be others if they officially participated.

The sectors of the companies that participated belong to research and telecommunications (2), financial services (1), media (1), fashion (1), transport, and logistics (2). A brief description of each company can be found below:

- A company that specializes in the telecommunications industry, specifically in the management and operation of wireless telecommunications infrastructure such as radio and television broadcasting towers, and telecommunications sites. As of 2021, it has over 1500 employees and generated a revenue of €1.5 billion in 2020.
- A company specializing in telecommunications research and innovation. As of 2021, it has around 150 employees and generated a revenue of €15 million in 2020.
- A company that provides financial services to its customers, including consumer credit, personal loans, and credit cards. It has over 1200 employees and generated a revenue of over €600 million in 2020.
- A company that is a broadcaster that produces and broadcasts television and radio content, including news, sports, and entertainment programs. As of 2021, it has around 6000 employees and generated a revenue of €1.0 billion in 2020.
- A company that is a global leader in the fashion industry, producing and distributing fashion products. It has over 8000 employees and generated a revenue of almost €2 billion in 2020.
- A company that is a law firm that offers legal services to individuals and companies in a wide range of areas, including corporate law, mergers, and acquisitions, and dispute resolution. It has over 1000 lawyers and professionals and operates in over 10 countries, generating revenue of over €300 million in 2020.
- A company that is a leading infrastructure operator, managing highways and toll roads in multiple countries around the world. It has over 13,000 employees and generated a revenue of almost €5 billion in 2020.
- A company that operates the largest maritime infrastructure in the Mediterranean, offering transport services to businesses and individuals. As of 2021, it has over 1000 employees and generated a revenue of over €170 million in 2020.

The interviews were recorded and transcribed for analysis. More details on the interviews are presented in Appendix A.

Analysis of Interviews: The interviews were analyzed to identify the common themes, trends, and patterns in the responses. The analysis focused on the factors that contribute to successful innovation, such as leadership, culture, resources, and collaboration.

Integration of Results: The results of the literature review and the interviews were integrated to provide a comprehensive understanding of the factors that contribute to successful innovation. The results were organized into a set of statements and presented in the findings section of the paper.

In conclusion, the methodology used in this study provides a rigorous and comprehensive approach to exploring the topic of innovation. The combination of an exhaustive literature review and the interviews with experts and managers on innovation, and directors of innovation departments of main companies, provides a rich source of data for analysis and interpretation. The findings of this study can inform innovation management strategies and practices in organizations.

2.3. Innovation Strategies

The literature shows that strategy and innovation have historically been studied as separate fields, [97–99]. The strategy had focused primarily on the corporate and business unit levels and the innovation literature focused primarily on the product level, and around the year 2000, the combination of innovation literature and corporate strategy began [100].

Due to its relevance to business, innovation needs a strategy because it involves planning, prioritizing, and developing the right types of innovation (technological or not), ensuring that the appropriate resources, knowledge, capabilities, organizational structure, and processes are used in the most effective way [17,18,101]. The innovation strategy is a set of actions that drive all procedures and guidelines in an organization to generate and manage innovations to achieve business objectives [12], driving at least the value chain, customer value, or potential users [102]. The innovation strategy should be based on the corporate strategy and needs to be understood as an integral component of long-term strategic business management [13]. In fact, it is positive to incorporate the innovation strategy into the business strategy to compete in a better position in terms of differentiation, productivity, and economic growth [103], and achieve better financial results [19].

The strategy is a process, not a result, and especially in these moments of dynamism that require globalization, it should be ready to change as conditions evolve. As a business strategy, the innovation strategy should also be defined as a set of options combined to harmonize the purpose (aligned with the business), define the playing field (where to compete), how to succeed (how to develop distinctive value), what competencies (capacities it has and does not have), and management systems (how to evaluate the strategy) [104]. As we can read in Figure 1, to develop value, companies use strategies to minimize risk in search of the convergence of people's desires, commercial viability, and technical feasibility.

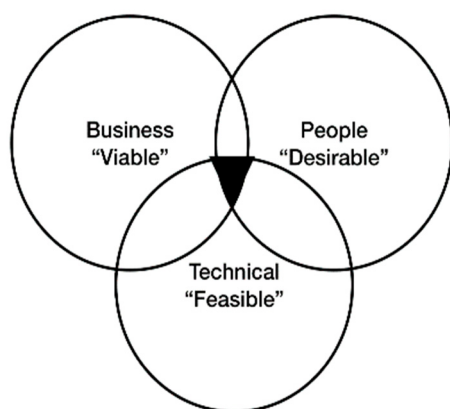


Figure 1. The convergence of ideal status for companies.

For many people in business, the word ‘strategy’ has become an automatic verb when they are talking about planning [105], but it is not the same. In the strategic plan, you are the customer, you control costs (“*I am going to expand the business*”, “*I am going to launch a new product*”), whereas, in strategy, you do not control customers and revenue, so since the

strategy is a hypothesis that you think will happen, it is impossible to test it in advance or guarantee it. Once an option is chosen, that is when the planning begins [106]. Strategic plans have an expiration date, while strategies do not [107].

Building a strategy is a process that involves asking a set of tough questions: What situation are you in now? Where are you going? How are you going to do it? [108]. With the strategy, it will be necessary to demonstrate which part of your theory is true and which is not, so it is about choosing correctly based on the preferences and needs of the user, on the competition, and on our capabilities. So how can companies test the hypotheses? Through market analysis? Hiring new talent or training current employees? Following what the competitors are doing? The strategy is how to overcome the barriers, and it will validate the assumptions and confirm (or not) if your choice is the best one. In fact, as shown in Figure 2, strategy is what we use to move from mission to vision, a theory that involves creativity in designing a solution. A strategy is a problem-solving tool about how we can solve a problem [106].



Figure 2. Strategy allows companies to move from mission to vision.

So, following the business strategy methodology by [104,109], strategy is divided into three sections as reflected in Figure 3: strategic analysis, strategies formulation, and strategies implementation.

- Strategic analysis.
 - a. Is when companies set their mission (definition of business they are doing now), vision (definition of what they want to be in the future), values (definition of company principles), and strategic objectives (what they want to achieve).
 - b. Another basic tool in this section is the S.W.O.T. analysis, where companies define their strengths, weaknesses, opportunities, and threats.
- Strategies formulation.
 - a. After the mandatory analysis, companies design their strategies by exploiting (or seeking) their competitive advantage. To do this, they define their playing field through the dimensions on which to compete (for example, quality, price, brand prestige, etc.).
- Strategies implementation.
 - a. Strategies selection. In the selection process, companies will define how to develop value. To do this, they will set the objectives and the action plan to achieve them. So, they must clearly specify what and how they are going to do it, and sometimes it is better to develop a small set of priorities that everyone supports in order to produce results [110].
 - b. Go-live. It is the execution of actions following the plan. It usually implies organizational changes because the development of some tasks may require new skills and resources.
 - c. Strategic control. Here, the companies manage the implementation. They control development and results through KPIs (Key Performance Indicators) and OKRs (Objective Key Results). This section is key because companies will know if their strategy is working or not, so with good management, they will have the opportunity to modify tasks, adapt them to external or internal forces, or even change the line of action.

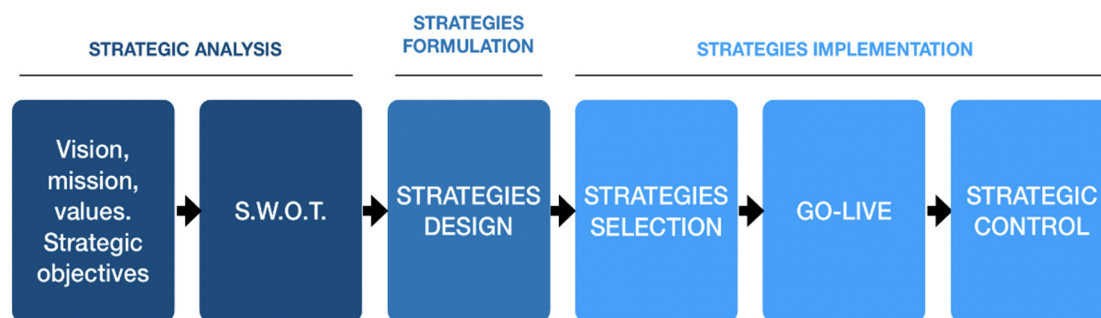


Figure 3. Methodology to establish a strategy stipulated by Guerras and Navas (2022) [109].

Unlike the fact that there is information on the strategic business process, no similar methodology has been found to define the innovation strategy process, but it seems that it can be adapted to use it (analysis, formulation, and implementation).

So, in this analysis, as happens in business strategy, the innovation strategy can also be framed in a multidimensional way, addressing what a company innovates and how it innovates [111]. Here, the authors use binomials of dimensions for the strategies: exploration vs. exploitation, internal vs. external sources, technology push vs. market pull, and product vs. process innovation. The axes should be composed of the key elements of the companies that offer, or want to offer, a value proposition, and generate dimensions that allow the goals to be achieved within the framework of the defined competitive space.

The literature shows a diversity of options, and other studies use matrices with different axes: while one indicates two critical dimensions, the capacity to leverage new business models with the technical competencies [4], others propose an innovation strategy classification in five dimensions [11], naming strategies oriented to technological, time, market, competition, and cooperation. In another research, the dimensions were deduced from the study of 100 innovative companies framing them, in this case, in customer excitement, competitive leadership, and portfolio enrichment [112]. Moreover, we find 12 dimensions of business innovation for offerings, platforms, solutions, customers, customer experience, value capture, processes, organization, supply chain, presence, networking, and brand [113]. A summary of the dimensions can be found in Table 1.

Table 1. Dimensions for the innovation strategy found in the literature.

Author, [Reference Number]	Dimensions
Pisano, [4]	Capacity to leverage new business models with the technical competencies
Wolf et al., [11]	Technological, time, market, competition, and cooperation
Bowonder et al., [112]	Customer excitement, competitive leadership, and portfolio enrichment
Mohanbir, [113]	Offerings, platform, solutions, customers, customers experience, value capture, processes, organization, supply chain, presence, networking, and brand

Once the company has well-defined the framework of competitive space in innovation, it is the moment to decide which strategies will be adopted according to those dimensions. Here, we can find two big groups of strategies: exploitative, which focused on efficiency and incremental improvements; and exploratory, which addressed discovering new ideas and new business models [114–118].

Other strategies are oriented to the level of risk that the company wants to assume and the level of leadership that represents being a first-mover or a fast-follower, like proactive, active, reactive, and passive [20], while others are closed to process innovation, taking in mind cost leadership, making efficiencies to attain superior performance, cost

advantage, and service innovation based on differentiation, and creating unique and different features [119].

Ref. [13] explain there are interdependencies between four components of innovation strategy: technology strategy due to the relevance of tech in innovations; product strategy to produce what the customers want; process strategy because of the chosen technology and product strategy; and timing strategy due to the time-to-market can be very relevant to leading or following market opportunities.

Ref. [112] analyzed 100 innovative companies and they found 12 predominant strategies according to their dimensions. Here, the authors expose that, in the customer excitement dimension, which involves providing new offerings or experiences, there are the strategies of platform offering (covering a variety of needs), co-creation (working with the client to generate insights), cycle time reduction (delivering the product early), and brand value enhancement (delivering customer aspirations).

For the competitive leadership dimension to stay ahead of the competition in the marketplace, there are strategies of technology leveraging (using tech to be better than competitors), futureproofing (reducing uncertainty with multiple options), lean development (optimizing the production), and partnering (collaborating with others).

For the portfolio enrichment dimension to entering new market segments or creating new businesses, there are strategies of innovation mutation (creating new products through technology evolutions), creative destruction (ending an offering for a new replacement), market segmentation (creating new opportunities thanks to segments), and acquisition (procuring technology, brand, or market).

Large companies also publish their own studies, such as the one by PwC based on their survey called Innovation Strategy Profiler, where they shape the strategies into three: need seekers (companies looking for new products through customers' needs), market readers (those focused in incremental innovations being fast-followers), and technology drivers (those who use their technological capabilities and try to apply new technologies) [19].

On the other hand, ref. [60] explains that strategic innovation can be defined by three dimensions such as content, process, and context, but before, the company must define who its customers are, and what service or product is offered with profitability and value to attract customers. From a content perspective, companies should focus beyond retaining and satisfying existing customers to continually explore new potential markets that offer new opportunities. From a process point of view, companies need to be aware of internal and external forces (S.W.O.T. analysis) to have the ability to choose the best innovative ideas for their business environment that best fit their organizational culture. From a context angle, organizations should have a tolerance of mistakes, support for teamwork, rewards for risk-taking, possession of non-bureaucratic processes and a flat organizational structure, to name a few.

At the same time, we observe three generic movements in the literature called strategies: open innovation, imitation, and innovation leadership.

First, open innovation (the situation where an organization is not dependent on its own internal knowledge and resources, as it uses outside help to create innovation), is one of the innovation strategies discussed in the literature associated with the innovation performance in companies [120]. However, the open strategy could not be considered as a standalone option, and internal R&D and open innovation should be seen as complements, working as one to be successful [58]. Along the same line, other researchers have published the cooperation action as an innovation strategy, or rather, an open innovation option focused on collaboration with startups and spin-offs [12].

Second, a very widespread option that companies take is imitation. Not all investment in research and development is profitable, so being innovative does not guarantee fast results. For this, some companies prefer imitation, discussed here as a possible strategy, because depending on the conditions and copying what others are successfully producing is more effective than research with the risks that this entails [121]. However, an imitation strategy has more presence in hierarchical cultures [122], and appears to boost short-term

performance, being more effective in sustained growth in low-tech industries and in non-OECD countries [123], although the effect of sustained competitive advantage is stronger on innovation than on imitation [115].

And third, innovation leadership, which could be precisely the opposite of imitation (one more reactive, the other more proactive), allows companies to adapt and change the external environment, which would improve their performance [124,125].

A summary of the innovation strategies can be found in Table 2.

Table 2. Innovation strategies found in the literature.

Author, [Reference Number]	Strategies
Müller et al., [114]; Ali, [115]; Jia, [116]; Chen et al., [117]; Gao et al., [118]	Exploitative (focus on efficiency and incremental improvements) and exploratory (discovering new ideas, and new business models)
Dodgson et al., [20]	Proactive, active, reactive, and passive; depending on the level of risk that the company wants to assume and the level of leadership that represents being a first-mover or a fast-follower
Kaliappen and Hilman, [119]	Process innovation (for cost leadership, making efficiencies to attain superior performance and cost advantage), and service innovation (for differentiation, creating unique and different features)
Gaubinger et al., [13]	Technology strategy due to the relevance of tech in innovations; product strategy to produce what the customers want; process strategy as a result of the chosen technology and product strategy; and timing strategy due the time-to-market can be very relevant
Bowonder et al., [112]	Strategies of platform offering, co-creation, cycle time reduction, and brand value enhancement. Strategies of technology leveraging, futureproofing, lean development, and partnering. Strategies of innovation mutation, creative destruction, market segmentation, and acquisition
Jaruzelski et al., [120]	Need seekers (those companies are looking for new products through customers' needs), market readers (those who focused in incremental innovations being fast-followers), and technology drivers (those who use their technological capabilities and try to apply new technologies)
Valmaseda-Andia and Albizu-Gallastegi, [120]; Bogers et al. [58]; Wolf et al., [12]	Open innovation, the situation where an organization is not dependent on its own internal knowledge and resources, as it uses outside help to create innovation
Wanasika and Conner, [121]	Imitation, because not all investment in research and development is profitable, and sometimes copying what others are successfully producing is more effective
Adjei, [124]; Carmeli et al., [125]	Leadership in innovation, proactivity that allows companies to adapt and change the external environment, which would improve their performance

Before deciding which strategy companies would implement, they should know what key factors determine or influence an innovation strategy to choose the one that suits them best.

2.4. Factors for Strategies

The size and direction of business activity are not solely determined by market demand, as the impact of the market can fluctuate significantly due to cyclic changes in the industry, such as periods of growth and decline, as well as sudden disruptions [126]. So, when designing a strategy, companies must consider many factors before deciding.

For example, some studies analyze the impact of talent on innovation, which represents positive business results [127]; the cost reduction because of many innovations [128]; the relevant role of user necessities for a product [129]; or the importance of learning about best practices within and beyond a firm's industry sector [130]. All these publications have not been treated as determinants of strategy because they have been studied individually with other intentions, but due to their impact, they could be considered as candidates to form part of the strategy elements.

On the other hand, there are factors to be considered, such as the mission and culture of companies [19,122], and key factors of influence on business development, such as globalization and technology [131]. There is innovation beyond technology, we can innovate without the mandatory use of new technologies [30], but there is no doubt that in recent decades it has taken an important role in business offerings (products and services). Now data processing and communications are light years away from a few decades, so the possibilities they bring us are incredible and could be a determining factor in the strategy.

At the same time, there are other considerations that affect how companies establish and operate innovation, such as financial status, company size, management skills, or competitive advantage, to name a few [132]. Other influencing factors detected are, for example, the industry, the economic conditions, or the internal capabilities of the company [17]. In the same direction, we have a proposal of five factors that influence the innovation strategy: accumulated technological competencies, external orientation, organizational specialisms, internal strategic cohesion, and management skills [20].

Empirical work was oriented to identify factors that determine the decision to innovate in firms [133]. Here, the authors identified five areas grouped in obstacles (economic risk, costs too high, organization structure not flexible, etc.), sources (suppliers, competitors, customers, etc.), cooperation (governmental labs, competitors, R&D firms, etc.), finance and decision-making process in innovation (profit increase, compliance regulations, turnover, etc.).

The company's sector could also be a possible determinant to consider. For example, public companies mainly use current knowledge instead of generating new ones [118].

Companies that prefer to go a step further could choose leadership by incorporating R&D, seeking exclusive added value for their purposes in an internal, external, or mixed-managed way, for example, with basic research, applied research, and experimental development. Hence, R&D is presented as a possible factor that could influence the type of strategy chosen [11,13,134,135].

One of the previous steps that every company should take when facing which strategy is the S.W.O.T. analysis (Strengths, Weaknesses, Opportunities, and Threats), another candidate to be a determining factor because the S.W.O.T. is intended to shed strategic insights [136], being part of the innovation process [137]. It is the tool par excellence for business strategy, but is also applicable to the innovation strategy [138] and used to identify the good and bad of the innovation systems models [139].

A summary of the factors can be found in Table 3.

Table 3. Determinant factors of innovation strategies found in the literature.

Author, [Reference Number]	Determinant Factors
Briganti and Samson, [127]	Employees with talent represents positive business results
Lluch, [129]	User needs play a relevant role in making a product
Leavengood and Anderson, [130]	Importance of learning about best practices within and beyond a firm's industry sector
Naranjo-Valencia et al. [122]; Jaruzelski et al., [19]	The mission statement determines the organization's rationale, purpose, and overall intent. The company culture frames its philosophy and its attitudes, behaviors and values

Table 3. Cont.

Author, [Reference Number]	Determinant Factors
Haro Carrillo et al., [131]	Globalization has allowed companies to access customers from all over the world, increasing their markets but at the same time competing fiercely and being affected by external fluctuations. New technologies make it possible to increase competitiveness by adding new functionalities for the efficiency of systems, products and services
Bayarçelik et al., [132]	Financial status, company size, management skills, or competitive advantage
Katz et al., [17]	The industry, the economic conditions, or the internal capabilities of the company
Dodgson et al., [20]	Accumulated technological competencies, external orientation, organizational specialisms, internal strategic cohesion, and management skills
Braga and Braga, [133]	Obstacles (economic risk, costs too high, organization structure not flexible, etc.), sources (suppliers, competitors, customers, etc.), cooperation (governmental labs, competitors, R&D firms, etc.), finance and decision-making process in innovation (profit increase, compliance regulations, turnover, etc.).
Gao et al., [118]	Business sector (for example public companies mainly use current knowledge instead of generating new ones)
Wolf et al., [11]; Malhotra, [134]; Van de Poel et al., [135]; Gaubinger et al., [13]	R&D to take a further step in leadership, seeking exclusive added value for its purposes internally, externally or mixed managed, for example, with basic research, applied research and experimental development
Valentin [136]; Geschka [137]; Štěrbová et al., [138]; Al-Mubarak et al., [139]	SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats), because the SWOT is intended to shed strategic insights being part of the innovation process to identify the good and bad of innovation systems models

3. Results, Discussion and Future Work

In this section, we present the main results obtained from the revision of the literature in the previous state of the art, incorporating the conclusions of the interviews carried out with directors and innovation managers, mostly in the category of large companies.

Finally, we contextualize the limitations of the study as well as the next steps in terms of future work.

3.1. Results

After careful analysis of the literature and interviews with innovation leaders, we can infer the following results as statements:

Statement 1. *There is no global consensus on innovation, and there will not be in the short and medium term.*

The lack of consensus on the definition of innovation could lead to different interpretations affecting the understanding and relevance of innovation in business.

The experience, culture, or environment of companies affect the conception of innovation so that while in some scenarios a new functionality is enough to be considered an innovation, for others it does not correspond to the expectations.

Regarding relevance, the definition of innovation assumed by every organization influences the role of innovation in the company, and the hierarchical structure influences idea generation and selection [43–45].

For example, companies that only adopt a technological definition of innovation could limit its importance to the business, handling it as a compliment and not as part of the business. A definition of innovation-oriented toward intrapreneurship without fear of trial and failure could help companies advance in their evolution. Or, on the contrary, when the definition is oriented not to try because the reduction in investment is present, and only pursues the efficiency of daily processes, the company could slow down its evolution.

Interviews results:

The definition of innovation used in face-to-face meetings for innovation managers was varied. Some were very operational, defining innovation as a platform to test products before launching them into production (25%); some of them especially emphasized the words “value for customers” (25%); while others underlined “putting the future on today’s agenda” (12.5%). However, the majority coincided in mentioning that innovation is a “cultural mentality” that transforms the company (37.5%).

Seventy-five percent of the managers consulted affirm that they practice incremental innovation (it refers to a series of small improvements that are made in the existing products or services of a company), and only 25% declare that they try to disrupt the business model.

Regarding how they are doing innovation, the answer was equality (37.5%) for both cases: mainly with internal resources and some external resources; and all the opposite, mainly with external resources with some internal resources (the other 12.5% affirmed to work with balanced team internal/external).

Statement 2. *The innovation department is not yet integrated as the main lever in the core business.*

Interviews results:

The interviews revealed that innovation is still mostly associated with technology projects, with different roles in companies and with different understandings of how to apply and manage it. Innovation is something that is predominantly outside of business, so the innovation department is embedded in another bigger area (62.5% of participants), losing direct presence on the board of the company. Only 12.5% have a Chief Innovation Officer on the Board Committee, and 37.5% have other Chiefs.

We observe in the data collected that 50% of the companies work vertically (it means that they operate as a separate unit within the organization and are responsible for developing new products, services, or processes from start to finish. In this structure, they have their own dedicated budget and resources. They may have little interaction with other departments or teams, and their focus is on creating new ideas and solutions that can be integrated into the company’s existing operations). The other half does so horizontally (this means that they collaborate closely with other departments and teams within the organization to identify areas for improvement and develop innovative solutions that can benefit the company. In this structure, the innovation department may not have a dedicated budget or resources, but it works in partnership with other departments, such as marketing and operations, to identify new opportunities for growth and implement new ideas and technologies).

The main function that defines the innovation department is testing new technologies (37.5%) and promoting and stimulating the culture of innovation internally (25%). The rest stated that they do both (technological and cultural) equally (37.5%).

Fifty percent of the organizations declare that the origin of the demand for innovation projects comes both from the innovation department and from other areas. While 37.5% say that it is the innovation department that drives the requests, the remaining 12.5% proactively receives requests from other units. To carry out these projects, the innovation department has its own annual budget (62.5%), while the rest (37.5%) comes from a mixed modality (from the innovation department itself and from other areas).

Statement 3. *Business strategy needs innovation.*

Innovation is a key element that represents performance improvement in its application. Up to three-quarters of productivity development in the European industry can be attributed to innovation [36], and companies that apply innovation in their strategies produce better performance [37].

Innovation is a fundamental pillar in business strategy; it is not just a technological project, it is a culture, a mindset, a tool that provides competitive value to the company and added value to customers.

For the economy, innovation denotes greater productivity for all [38]: (1) It is positive for customers because they can enjoy better products and services. For example, the invention of smartphones and mobile apps has revolutionized the way people communicate and access information. Similarly, the introduction of online shopping and e-commerce platforms has made it easier for customers to buy products and services from the comfort of their homes. (2) It is positive for businesses because innovation provides sustainable growth and development. For instance, the use of automation and artificial intelligence has enabled companies to streamline their operations and reduce costs. Additionally, the adoption of renewable energy sources such as solar and wind power has helped businesses become more sustainable and reduce their carbon footprint. And (3) It is positive for the employees because innovation is a challenging job associated with higher intellectual knowledge and salaries. For example, software engineers and data scientists are in high demand due to their expertise in developing and implementing innovative technologies. Similarly, professionals in the healthcare industry involved in developing new treatments and drugs often command high salaries due to the specialized knowledge and expertise required for the job.

Interviews results:

All those interviewed agreed on the need to include innovation in the business strategy, considering it as a key element in business competitiveness. Despite their wishes, the reality is that 75% affirmed that innovation is key to their business strategy, while 12.50% said that the weight is secondary. Another 12.50% stated that innovation does not play a relevant role in their business strategy.

Statement 4. *Business innovation needs its own strategy.*

The innovation strategy is a set of actions that drive all procedures and guidelines in an organization to generate and manage innovations to achieve business objectives [12]. It involves planning, prioritizing, and developing the right types of innovation (technological or not) and ensuring the appropriate resources, knowledge, capabilities, and organizational structure, among others [17,18,101]. It is important not to manage the innovation strategy as an isolated strategy independent of the rest of the company's functions. The innovation strategy should be based on the corporate strategy and needs to be understood as an integral component of long-term strategic business management [13]. With the innovation strategy, the company can control and manage the generation of innovation, even though few companies have a clear innovation strategy [17].

Not all companies have a clear innovation strategy, in part due to a lack of consensus on the definition of innovation. This limitation in its definition could restrict the scope of action of the innovation department, normally associated with technological projects and far from the business core. This could imply that the person in charge of innovation does not belong to the board of directors, and is not serious about having their own strategy, treating innovation as a complement to the business, sometimes even more propagandistic than effective. Likewise, the innovation managers interviewed confused the terms strategy and planning, so when they talk about strategy, they are explaining their planned actions for the year.

Interviews results:

With this point, the interviewees repeated their opinion agreeing on the advantages of having an innovation strategy, something crucial to define the development of innovation. While 62.5% of them claimed to have an innovation strategy, 25% did not. Only 12.5% said that they did not have a specific innovation strategy because it is embedded in the business strategy itself.

Most of the directors and managers (62.5%) participated in the creation and updating of the innovation strategy. Most updates occur between 2–4 years (50%), while 25% review the strategy beyond four years, and the other 25% do it every year or even a few times a year.

Statement 5. *It is positive to incorporate the innovation strategy into the business strategy.*

The incorporation of an innovation strategy is crucial to compete in a better position in terms of differentiation, productivity, economic growth, and achieving better financial results [19].

The innovation strategy should be based on the corporate strategy and needs to be understood as an integral component of long-term strategic business management [13].

The innovation strategy is a set of actions that drive all procedures and guidelines in an organization to generate and manage innovations to achieve business objectives [12], driving at least the value chain, customer value, or potential users [102].

Statement 6. *Innovation strategy is framed in a multidimensional way.*

We have different approaches to declaring the sections of the business value proposition, and the dimensions will define the framework of the competitive space using innovation.

The literature reviewed shows dimensions that can be grouped into four frameworks:

- Dimensions oriented to “*innovation sources*”: those that define and treat the fonts of innovation, from internal to external resources, in a competition or cooperation [11].
- Dimensions oriented to the “*innovation category*”: those areas that define where the firm works innovation: in the form of improvement (exploitation) or disruptive vision (exploration) [111].
- Dimensions oriented to “*innovation types*”: the association to which the innovation is applied, in the product or process [113].
- Dimensions oriented to “*innovation needs*”: related to who pulls the business: the technology that the company creates or dominates, or the market needs, including the time-to-market and competitive leadership. Customers’ needs include dimensions such as portfolio enrichment and client excitement [4,112].

Interviews results:

Although the directors and managers interviewed so far have spoken positively about the use of innovation strategy, none used dimension terminology to define the space where they develop capabilities to align innovation with business objectives. It seems that not all frame a strategy, but mix concepts of tactics and planning. In fact, the conversations were automatically directed by the interviewee toward the explanation of their lines of action, listing the planned tasks.

Not everyone seems to act with analytical thinking that helps establish a strategy. It would be relevant to train those responsible for innovation with a more medium-long-term vision and reasoning so that they can see beyond the forecast year and short-term actions. The choice of the dimensions of competitiveness is a critical and essential step to defining a correct strategy, and it does not seem that it is a step that everyone is aware of taking.

Statement 7. *The innovation strategies are oriented to the offering, efficiency, and business plan.*

Companies have different strategies to adopt, the defined dimensions being decisive. The literature reviewed shows strategies that can be grouped into three types of orientation:

- Strategies oriented to the “*offering*”: those related to the “making methods”, strategies such as co-creation, collaboration, and open innovation. Additionally, those pertaining to “provision”, strategies such as those oriented to service, process, and product [12,58,112,119,120]
- Strategies oriented to “*efficiency*”: here we find the strategies associated with delivery, time-to-market, or exploitation [13,114–118].
- Strategies oriented to the “*business plan*”: those related to brand value, diversification, market segmentation, reducing uncertainty, acquisitions, the level of risk assumed, and the level of leadership adopted or the imitation [20,120,121,124,125].

All three groups apply technology, commented as a cross strategy due to its capacities and influence impact.

Interviews results:

At this point, the face-to-face meetings revealed a crossover of concepts because most interlocutors referred to strategy when talking about tactics, methods, or even action points. Some of the highlighted words in their innovation strategy explanation ordered from highest to lowest citation were: market observation and environment analysis (50%); relation with the innovation ecosystem (50%); organizational adaptation structure (37.5%); open collaboration (25%); realization of fast MVPs (25%); cultural development (25%); make assets and business case (25%); alliances (12.5%); have your own dedicated team (12.5%); and training (12.5%).

Therefore, companies mainly focus on strategies oriented to the offering (40.91%), strategies oriented to efficiency (31.82%), and strategies oriented to the business plan (27.27%).

Statement 8. *There are factors both internal, such as mission or talent, and external, such as politics or world economy, that affect or influence the decision of companies when choosing an innovation strategy.*

We have seen that there are many aspects to consider that influence when a company decides on its strategy. We can organize it into three groups:

- Factors oriented to the “*approach*”: firm factors such as mission, vision, culture, organizational structure, value chain, firm values, team talent, company size, internal strategic cohesion, economic risk, management skills, resources, investment, business knowledge, and S.W.O.T.; environmental factors such as market, sector, industry, alliances, pandemics, wars, ecological, legal, politics, and world economy [17,19,20,118,122,136,137].
- Factors oriented to “*thought*”: such as innovation maturity and types, R&D (internal, external, and mixed mode), technology capabilities, and *intuition* [11,13,133–135].
- Factors oriented to “*observation*”: such as competitors, good practices, state of knowledge and technology, government and EC innovation strategy, customer’s needs, learned lessons, and previous innovation outcomes [17,131,133].

Interviews results:

Not all the participants were aware of the factors that influence innovation in their companies; most of the respondents were superficial. The most cited were three: the external environment in general terms, but mainly in the economy; the results obtained in previous innovation trials; and having a focus on certain issues, due to the great diversity of options that technically exist in the market.

In the following Figure 4, you can see a summary scheme of the three components necessary for the innovation strategy and how they interact.

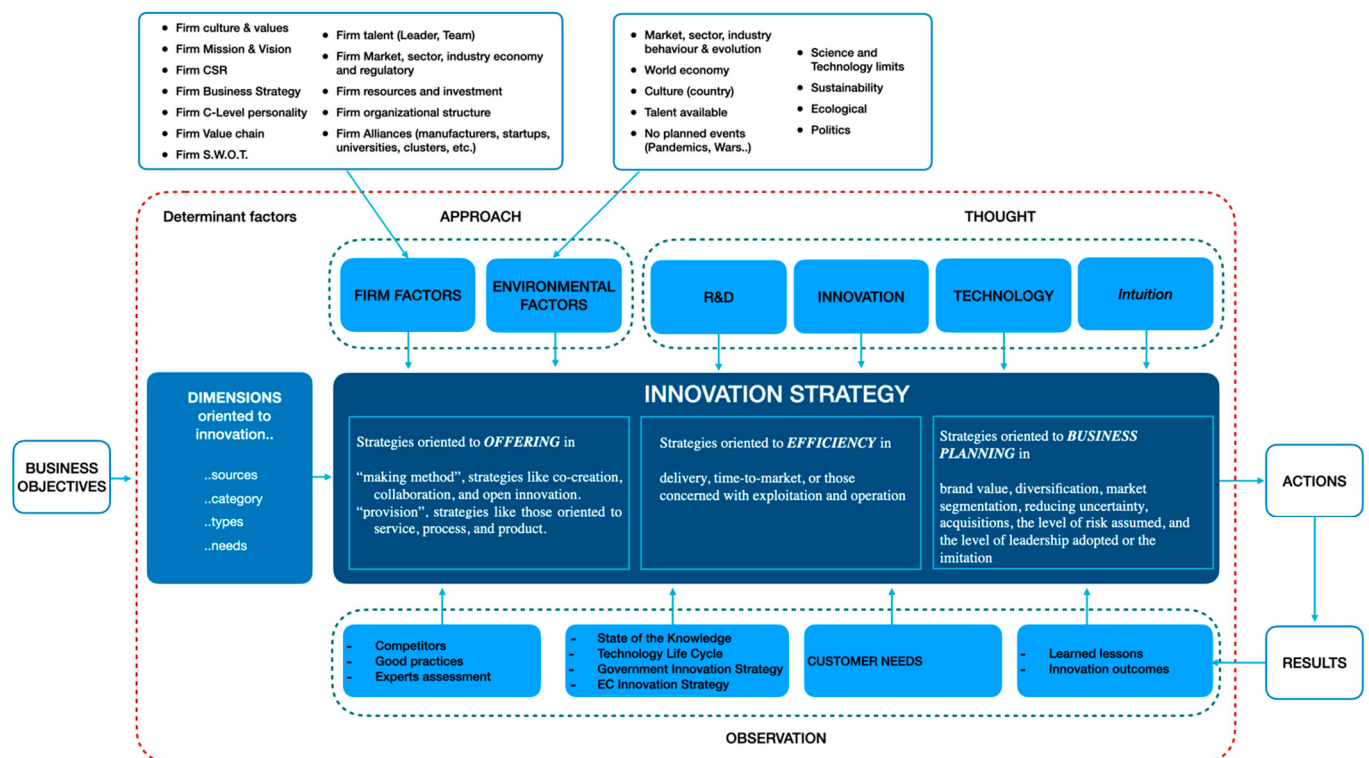


Figure 4. The three necessary components for the innovation strategy: dimensions, strategies, determinant factors.

Statement 9. *It is reasonable to consider that we can use the business strategy methodology to determine the innovation strategy.*

The literature provides information on the widely used strategic business methodology, which generally comprises three phases, namely analysis, formulation, and implementation. However, there is a paucity of information on the methodology for innovation strategy, mainly because the literature on innovation strategy tends not to focus on the methodology itself, but rather on describing the innovation process and types of innovation [13,19,20,112,114–119].

Just as key questions and answers are used in business strategy (What situation are you in now? Where are you going? How are you going to do it? [108]), innovation strategy should also be defined as a set of options to align purpose (aligned with the business), define the playing field (where to compete), how to succeed (how to develop distinctive value), and identify competencies (capabilities you have and do not have) and management systems (how to evaluate the strategy) [104].

Then, following the business strategy methodology of [104,109], it could be considered that the innovation strategy is also divided into three sections: strategic analysis, strategy formulation, and strategy implementation.

Interviews results:

The interviews showed the lack of methodology in innovation strategy. Only 12.5% of responders declared they analyze the internal and external environment to trace a path from the current status to the desired one. Another 12.5% stated that they observe the market and competitors, learn from them, and act in consequence.

Twenty-five percent of the interviewees answered that their process involves reviewing the needs of business departments, learning about the state of the art by attending conferences and events, reading newsletters, and doing technical scouting.

Most of them (75%) agreed to use the European Commission's Horizon program to generate assets and experience, as their main pillar in innovation strategy.

On the other hand, not all companies control and manage the innovation strategy with indicators and/or OKRs. Twenty-five percent declared that they do not use any of them because they do not believe in them. Of the 75% that use metrics to control, 50% only use OKRs and the rest use both (KPIs and OKRs).

3.2. Limitations and Future Work

This article is based on the reviewed literature and the responses of the companies that kindly participated in the interviews.

Business strategy and innovation strategy are two broad fields that are closely related but are not applied harmoniously with the same intensity in all organizations. The lack of global consensus on the definitions in the innovation ecosystem could hinder its adoption, negatively impacting the business. So, it would be very useful for companies if future research could delve into the environment of innovation strategies by establishing a basic framework that defines the methodology and a unified approach where the main strategies and their components of the innovation strategy are revealed.

Proposed next steps could be:

- Define a series of basic concepts to help the reader understand the environment with which the following points will be worked, avoiding misinterpretations due to various definitions.
- Delve into the innovation strategies most used by companies thanks to a continuous review of the literature, and add more interviews to verify theory and practice.
- Understand the different factors that affect or influence a company when choosing one strategy or another.
- In addition to these two lists of options for companies, obtaining a methodology that companies could follow to establish their innovation strategies would be very relevant.

4. Conclusions

The aims of this study were to investigate the methodology that companies follow to establish their innovation strategies, list the possible innovation strategies that they can choose, and the factors that determine or influence their decision.

There is no global consensus on innovation, and there will not be in the short and medium term. Innovation is a non-standardized term, and the understanding adopted for each company affects its implementation, roles, and functions. Most of the interviewed managers and innovation directors agreed on mentioning that innovation is a “cultural mentality” that transforms the company, and only 25% of them declared that they have tried to innovate disruptively.

The results of this study have shown that successful innovation is a multifaceted and complex process that requires the collaboration of different factors. The findings of the literature review and the interviews revealed that leadership, culture, resources, and collaboration are key factors that contribute to successful innovation. The analysis of the literature review and interviews revealed that leadership is an essential component of successful innovation. Leaders who foster a culture of innovation, encourage risk-taking, and provide support and resources are more likely to achieve successful innovation outcomes. Moreover, the study revealed that culture is an important factor that influences innovation outcomes. Organizations that have a strong innovation culture are more likely to generate new ideas and implement them successfully. The analysis of the interviews also revealed that resources are critical to innovation success. Organizations that invest in resources such as people, technology, and infrastructure are more likely to achieve successful innovation outcomes.

Collaboration was also identified as a key factor that contributes to successful innovation. The study showed that collaboration can take different forms, including collaboration between internal teams, collaboration with external partners, and collaboration with cus-

tomers. Effective collaboration is essential for generating new ideas, developing prototypes, and implementing innovation initiatives.

Even though business strategy needs innovation, and business innovation needs its own strategy, the innovation department is not yet integrated as the main lever in the core business. Only 12.5% of those interviewed stated they have a Chief Innovation Officer in the Board Committee. For companies, it is positive to incorporate the innovation strategy into the business strategy because it is crucial to compete in a better position in terms of differentiation, productivity, and economic growth to achieve better financial results.

It is reasonable to consider that we can use the business strategy methodology to determine the innovation strategy. This strategy is framed in a multidimensional way, however, none of the interviewees referred to this term. Among the most used strategies, we find those oriented to offering, efficiency, and business plan. We also find factors that determine or influence the choice of innovation strategy.

In summary, the findings of this study highlight the importance of leadership, culture, resources, and collaboration for achieving successful innovation outcomes. Organizations that focus on these factors are more likely to generate new ideas, develop innovative products and services, and gain a competitive advantage. This study has important implications for innovation management strategies and practices in organizations, and future research can build on this study by exploring these factors in more depth and investigating their impact on innovation outcomes in different contexts.

Author Contributions: Methodology, M.O.; Investigation, D.L. and M.O.; Writing—original draft, D.L.; Supervision, M.O. All authors have read and agreed to the published version of the manuscript.

Funding: This article is part of the Industrial Doctorate Program expedient number 2021DI3a granted by AGAUR, the Agency for Management of University and Research Grants of the Government of Catalonia. The authors also wish to acknowledge the support from the SGR-AGAUR program with number 00955.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data is not available due to the express request for the privacy of the participants and their companies.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

As we have seen in the state-of-the-art section, there is a common misunderstanding about what innovation is, and, at the same time, not all companies are applying innovation with the same intensity. To avoid confusion related to definitions and to better understand the meaning of innovation for the participants, we conducted face-to-face meetings instead of surveying people, with the intention of gaining insight before entering the strategy section. For this reason, the interview was divided into two sections: innovation and strategy.

Section 1: Innovation

- What kind of innovation do you practice?
- Related to innovation resources, how are you doing innovation?
- Do you practice applied research?
- In the organization structure, where is the innovation department?
- How does the innovation department work in the organization?
- What are the main functions of the innovation department?
- How and who is proposing the innovation projects?
- Do you have a reserved budget for innovating as you want, or it is coming from other departments?

- Does innovation have a direct presence on the Board or Executive Committee?

Section 2: Strategy

- Is Innovation in your business strategy?
- Do you have an innovation strategy?
- Did you participate in the creation of your innovation strategy, or do you participate in the updates?
- How often is the innovation strategy reviewed?
- Could you describe the basic pillars of your innovation strategy?
- What are the factors that you consider to be determinants or influences when choosing an innovation strategy?
- Could you describe the methodology used to establish the innovation strategy?
- Are you measuring the innovation strategy with KPIs and/or OKRs?
- Could you describe, at a high level, your main OKR/KPI?

References

1. Community Innovation Survey (CIS). 2018. Available online: <https://ec.europa.eu/eurostat/web/microdata/community-innovation-survey> (accessed on 10 January 2023).
2. Institute of Statistics of Catalonia. Statistics on Business Innovation, Statistics. 2020. Available online: <https://www.idescat.cat/novetats/?id=4231> (accessed on 14 February 2023).
3. Grego-Planer, D.; Kus, A. Determinants of Innovation Activities in Small Enterprises: A Model Approach. *Eur. Res. Stud. J.* **2020**, *XXIII*, 137–148. [CrossRef] [PubMed]
4. Pisano, G. The Hard Truth About Innovative Cultures. *Harv. Bus. Rev.* **2019**. Available online: <https://hbr.org/2019/01/the-hard-truth-about-innovative-cultures> (accessed on 4 February 2023).
5. Bayo, E.; Camps, X. *Com Esdevenir una Empresa Innovadora*; ACCIO: Barcelona, Spain, 2015.
6. Ashkenas, R. Ten Ways to Inhibit Innovation. *Harv. Bus. Rev.* **2012**. Available online: <https://hbr.org/2012/07/ten-ways-to-inhibit-innovation>, Product#:H0095F-PDF-ENG (accessed on 15 January 2023).
7. Balsano, T.J.; Goodrich, N.E.; Lee, R.K.; Miley, J.W.; Morse, T.F.; Roberts, D.A. Identify Your Innovation Enablers and Inhibitors. *Res.-Technol. Manag.* **2008**, *51*, 23–33. [CrossRef]
8. Assink, M. Inhibitors of disruptive innovation capability: A conceptual model. *Eur. J. Innov. Manag.* **2006**, *9*, 215–233. [CrossRef]
9. Hunsaker, B.T.; Knowles, J. Effective Innovation Begins with Strategic Direction. *MIT Sloan Manag. Rev.* **2021**, *11*. Available online: <https://sloanreview.mit.edu/article/effective-innovation-begins-with-strategic-direction/> (accessed on 10 December 2022).
10. Nickols, F. Definitions & meanings. *Distance Consult.* **2016**, *200*, 2–10.
11. Wolf, V.; Dobrucka, R.; Przekop, R.; Haubold, S. Innovation strategies in the context of the paradigm of the five dimensions of innovation strategy. *Logforum* **2021**, *17*, 205–211. [CrossRef]
12. Wolf, V.; Dobrucka, R.; Przekop, R.; Haubold, S. Cooperative innovation strategies—Review and analysis. *Logforum* **2021**, *17*, 477–484. [CrossRef]
13. Gaubinger, K.; Rabl, M.; Swan, S.; Werani, T. Innovation Strategy. In *Innovation and Product Management*; Springer: Berlin/Heidelberg, Germany, 2015; pp. 61–80. [CrossRef]
14. Ferreira, J.J.M.; Fernandes, C.I.; Alves, H.; Raposo, M.L. Drivers of innovation strategies: Testing the Tidd and Bessant (2009) model. *J. Bus. Res.* **2015**, *68*, 1395–1403. [CrossRef]
15. Taleghani, A.; Taleghani, M. Business Innovation Approach. 2021. Available online: https://www.researchgate.net/publication/348662104_Business_Innovation_Approach (accessed on 4 February 2023).
16. Tohidi, H.; Jabbari, M.M. Innovation as a Success Key for Organizations. *Procedia Technol.* **2012**, *1*, 560–564. [CrossRef]
17. Katz, B.R.; Preez, N.D.; Schutte, C.S.L. Definition and Role of An Innovation Strategy. In *Proceeding of the SAIIE conference proceedings*, Glenburn Lodge, Gauteng, South Africa, 6–8 October 2010; p. 15.
18. Afuah, A. *Innovation Management: Strategies, Implementation and Profits*, 2nd ed.; Oxford University Press: New York, NY, USA, 2003.
19. Jaruzelski, B.; Loehr, J.; Holman, R. The Global Innovation 1000: Why Culture Is Key, PwC. 2011. Available online: <https://www.strategy-business.com/article/11404> (accessed on 2 March 2023).
20. Dodgson, M.; Gann, D.; Salter, A. *The Management of Technological Innovation: Strategy and Practice*, New ed.; rev. Updated; Oxford University Press: Oxford, UK; New York, NY, USA, 2008.
21. Hamel, G. The Why, What, and How of Management Innovation. *Harv. Bus. Rev.* **2006**, *84*, 72.
22. Lendel, V.; Varmus, M. Creation and implementation of the innovation strategy in the enterprise. *Econ. Manag.* **2011**, *16*, 819–826.
23. Pisano, G.P. You need and Innovation Strategy. *Harv. Bus. Rev.* **2015**. Available online: <https://hbr.org/2015/06/you-need-an-innovation-strategy> (accessed on 14 February 2023).

24. Singh, S.; Aggarwal, Y. In search of a consensus definition of innovation: A qualitative synthesis of 208 definitions using grounded theory approach. *Innov. Eur. J. Soc. Sci. Res.* **2021**, *35*, 177–195. [\[CrossRef\]](#)
25. Formánek, I.; Krajčík, V. Identification of creative and innovative companies. *Creat. Stud.* **2017**, *10*, 111–121. [\[CrossRef\]](#)
26. Stenberg, A. What does Innovation Mean—A Term without a Clear Definition. 2017, p. 14. Available online: <http://hh.diva-portal.org/smash/record.jsf?pid=diva2%3A1064843&dswid=1469> (accessed on 21 December 2022).
27. Hakkarainen, K.; Talonen, T. The Innovation Funnel Fallacy. *Int. J. Innov. Sci.* **2014**, *6*, 63–72. [\[CrossRef\]](#)
28. Christensen, C.M.; Raynor, M.; McDonald, R. What Is Disruptive Innovation? *Harv. Bus. Rev.* **2015**, *11*. Available online: <https://hbr.org/2015/12/what-is-disruptive-innovation> (accessed on 28 January 2023).
29. Damanpour, F.; Wischnevsky, J.D. Research on innovation in organizations: Distinguishing innovation-generating from innovation-adopting organizations. *J. Eng. Technol. Manag.* **2006**, *23*, 269–291. [\[CrossRef\]](#)
30. Lechevalier, S. (Ed.) *Innovation Beyond Technology: Science for Society and Interdisciplinary Approaches*; Springer: Singapore, 2019. [\[CrossRef\]](#)
31. Gulbrandsen, M. The Role of Basic Research in Innovation. NIFU Nordisk Institutt for Studier av Innovasjon, Forskning og Utdanning. 2009. Available online: https://www.researchgate.net/profile/Magnus-Gulbrandsen/publication/242194796_The_Role_of_Basic_Research_in_Innovation/links/0deec52a1e31721fc9000000/The-Role-of-Basic-Research-in-Innovation.pdf (accessed on 21 December 2022).
32. Siota, J. *Linked Innovation*; Springer International Publishing: Cham, Switzerland, 2018. [\[CrossRef\]](#)
33. OECD and Eurostat. *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation*, 4th ed.; OECD Publishing: Paris, France; Eurostat: Luxembourg, 2018. [\[CrossRef\]](#)
34. Baskaran, A.; Muchie, M. Towards a Unified Conception of Innovation Systems. *Inst. Econ. Res. Innov.* **2010**. Available online: https://eprints.mdx.ac.uk/4470/1/Baskaran_-_Mammo_Working_Paper_on_Towards_Unified_Conception_of_Innovation_Systems.pdf (accessed on 17 February 2023).
35. Hagelaar, G. Influencing factors in innovation on Individual and Group level. *Wagening. Univ. Res.* **2018**, *23*. Available online: <https://edepot.wur.nl/458406> (accessed on 2 March 2023).
36. Swedish Ministry of Enterprise, Energy and Communications. *Swedish Innovation Strategy*; N2012.33; Swedish Ministry of Enterprise, Energy and Communications: Regeringskansliet, Sweden, 2020.
37. Ryu, H.-S.; Lee, J.-N.; Choi, B. Alignment Between Service Innovation Strategy and Business Strategy and Its Effect on Firm Performance: An Empirical Investigation. *IEEE Trans. Eng. Manage.* **2015**, *62*, 100–113. [\[CrossRef\]](#)
38. Shqipe, G.; Gadaf, R.; Veland, R. *Innovation Strategies and Competitive Advantages*; University of Southeast Europe: Tetovo, Republic of Macedonia, 2013; p. 17.
39. Queensland Government. Becoming an innovative business. *Bus. Qld.* **2021**. Available online: <https://www.business.qld.gov.au/running-business/growing-business/becoming-innovative/basics> (accessed on 20 February 2023).
40. Geroski, P.; Machin, S.; Reenen, J.V. The Profitability of Innovating Firms. *RAND J. Econ.* **1993**, *24*, 198. [\[CrossRef\]](#)
41. İpli, F.N.; Topsakal, Y.; Dogan, O. Strategic Innovation: An Empirical Study on Hotel Firms Operating in Antalya Region. 2014. Available online: <https://dergipark.org.tr/en/download/article-file/372554> (accessed on 28 February 2023).
42. Popa, I.L.; Preda, G.; Boldea, M. A theoretical approach of the concept of innovation. *Manag. Chall. Contemp. Soc.* **2010**, 151–156. Available online: <https://docplayer.net/docview/66/56222925/#file=/storage/66/56222925/56222925.pdf> (accessed on 17 January 2023).
43. Sarna, S. Role of Innovation in the Organization—IspatGuru. 2020. Available online: <https://www.ispatguru.com/role-of-innovation-in-the-organization/> (accessed on 5 February 2023).
44. Keum, D.D.; See, K.E. The Influence of Hierarchy on Idea Generation and Selection in the Innovation Process. In *In Search of Research Excellence*; Edward Elgar Publishing: Cheltenham, UK, 2017; p. 14204. [\[CrossRef\]](#)
45. Sahay, Y.P.; Gupta, M. Role of Organization Structure in Innovation in the Bulk-Drug Industry. 2011, p. 16. Available online: <https://www.jstor.org/stable/41149462> (accessed on 12 December 2022).
46. Anthony, S.D.; Trotter, A.; Bell, R.; Schwartz, E.I. The Transformation 20. Strategic Change Rankings for 2019. 2019. Available online: <https://www.innosight.com/wp-content/uploads/2019/09/Innosight-Transformation-20-Final.pdf> (accessed on 23 December 2022).
47. Alvares, A.C.T.; Barbieri, J.C.; de Moraes, D.O.C. Horizontal innovation and ambidextrous organization: A new innovation model applied in a mature industrial company. *Int. J. Innov.* **2021**, *9*, 588–621. [\[CrossRef\]](#)
48. Ikeda, K.; Marshall, A. How successful organizations drive innovation. *Strategy Leadersh.* **2016**, *44*, 9–19. [\[CrossRef\]](#)
49. Hekkert, M.P.; Suurs, R.A.A.; Negro, S.O.; Kuhlmann, S.; Smits, R.E.H.M. Functions of innovation systems: A new approach for analysing technological change. *Technol. Forecast. Soc. Chang.* **2007**, *74*, 413–432. [\[CrossRef\]](#)
50. Deloitte. *Product Innovation: Who Is Really in Charge? Managing through Internal Power Struggles*; Deloitte: London, UK, 2015. Available online: <https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/strategy/sea-strategy-product-innovation-who-is-really-in-charge-050715.pdf> (accessed on 28 December 2022).
51. McKelvey, M.; Holmén, M. (Eds.) *Flexibility and Stability in the Innovating Economy*; Oxford University Press: Oxford, UK, 2006. [\[CrossRef\]](#)
52. Bonazzi, F.L.Z.; Zilber, M.A. Inovação e Modelo de Negócio: Um estudo de caso sobre a integração do Funil de Inovação e o Modelo Canvas. *Rev. Bras. Gestão Negócios* **2014**, *16*, 616–637. [\[CrossRef\]](#)

53. Cooper, R.G.; Edgett, S.J. *Generating Breakthrough New Product Ideas: Feeding the Innovation Funnel*; Product Development Institute: Ancaster, ON, Canada, 2009; ISBN 978-0973282726.
54. Kaufman, M. *Innovation Metrics. The Innovation Process and How to Measure It*; InnovationLabs LLC: Walnut Creek, CA, USA, 2008; p. 21. Available online: https://innovationmanagement.se/wp-content/uploads/2012/12/Measuring_Innovation.pdf (accessed on 2 February 2023).
55. Jost, A.; Lorenz, T.; Mischke, G. Modeling the Innovation-Pipeline. 2005, p. 27. Available online: <https://proceedings.systemdynamics.org/2005/proceed/papers/JOST157.pdf> (accessed on 16 February 2023).
56. Preez, N.D.; Louw, L.; Essmann, H. An Innovation Process Model for Improving Innovation Capability. 2009. Available online: <https://www.semanticscholar.org/paper/An-Innovation-Process-Model-for-Improving-Preez-Louw/d85a97a149efad7d65ea1c7bdc4d7a6e2b8fdc19> (accessed on 26 January 2023).
57. Wang, N.; Xiao, M.; Savin, I. Complementarity effect in the innovation strategy: Internal R&D and acquisition of capital with embodied technology. *J. Technol. Transf.* **2021**, *46*, 459–482. [CrossRef]
58. Bogers, M.; Chesbrough, H.; Heaton, S.; Teece, D.J. Strategic Management of Open Innovation: A Dynamic Capabilities Perspective. *Calif. Manag. Rev.* **2019**, *62*, 77–94. [CrossRef]
59. Teece, D.J. Business Models, Business Strategy and Innovation. *Long Range Plan.* **2010**, *43*, 172–194. [CrossRef]
60. Sniukas, M. *Reshaping Strategy: Exploring the Content, Process and Context of Strategic Innovation*; VDM Verlag Dr. Müller: Saarbrücken, Germany, 2010. Available online: https://openlibrary.org/books/OL24548856M/Reshaping_Strategy_Exploring_the_Content_Process_and_Context_of_Strategic_Innovation (accessed on 19 January 2023).
61. Govindarajan, V.; Trimble, C. Organizational DNA for Strategic Innovation. *Calif. Manag. Rev.* **2005**, *47*, 47–76. [CrossRef]
62. Morris, L. Three Dimensions of Innovation. *Int. Manag. Rev.* **2013**, *9*, 12.
63. Zheng, L.; Dong, Y.; Chen, J.; Li, Y.; Li, W.; Su, M. Impact of Crisis on Sustainable Business Model Innovation—The Role of Technology Innovation. *Sustainability* **2022**, *14*, 11596. [CrossRef]
64. Am, J.B.; Furstenthal, L.; Jorge, F.; Roth, E. Innovation in a Crisis: Why It Is More Critical Than Ever. 2020. Available online: <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/innovation-in-a-crisis-why-it-is-more-critical-than-ever> (accessed on 3 March 2023).
65. Björkdahl, J.; Holmén, M. Editorial: Business Model Innovation—The Challenges Ahead. 2013, p. 13. Available online: https://www.researchgate.net/publication/243458937_Business_model_innovation_-_the_challenges_ahead (accessed on 5 January 2023).
66. Gann, D.; Parmar, R.; Cohn, D.; Mackenzie, I. The New Patterns of Innovation. *Harv. Bus. Rev.* **2014**, *92*, 2.
67. Nagji, B.; Tuff, G. Managing Your Innovation Portfolio. 2012, p. 12. Available online: <https://hbr.org/2012/05/managing-your-innovation-portfolio> (accessed on 18 December 2022).
68. Szabolcs, N.; Pererva, P.G. Sources of Financing Innovation. 2020. Available online: <https://repository.kpi.kharkov.ua/server/api/core/bitstreams/4ce450bb-347d-46a4-81df-de92e175ac99/content> (accessed on 2 December 2022).
69. Huang, Q.; Jiang, M.S.; Miao, J. Effect of government subsidization on chinese industrial firms' technological innovation efficiency: A stochastic frontier analysis. *J. Bus. Econ. Manag.* **2016**, *17*, 187–200. [CrossRef]
70. EC. Research and Innovation. European Commission, 2022. Available online: https://research-and-innovation.ec.europa.eu/index_en (accessed on 13 December 2022).
71. Schaeffer, C. How much should you invest in innovation? *Customer Think* **2021**. Available online: <https://customerthink.com/how-much-should-you-invest-in-innovation/> (accessed on 29 December 2022).
72. Hahn, D.; Minola, T.; Vismara, S.; De Stasio, V. Financing Innovation: Challenges, Opportunities, and Trends. *FNT Entrep.* **2019**, *15*, 328–367. [CrossRef]
73. DCA. Rebel build Challenge. Digital Catalonia Alliance. 2022. Available online: <https://reptes.dca.cat/assemblies/rebelbuild2022?locale=en> (accessed on 4 March 2023).
74. CIMTI. CIMTI Challenge Call. Centre per a la Integració de la Medicina i les Tecnologies Innovadores, 2022. Available online: <https://cimti.cat/en/apply/cimti-challenge-call/> (accessed on 16 December 2022).
75. Iberdrola. Iberdrola Startup Challenge. *Iberdrola Innovation*. 2022. Available online: <https://www.iberdrola.com/innovation/international-startup-program-perseo/iberdrola-startup-challenge> (accessed on 14 February 2023).
76. The Cellnex Foundation. Cellnex Foundation acceleration program. *Cellnex Bridge*. 2022. Available online: <https://thecellnexfoundation.org/la-fundacion-cellnex-ha-ayudado-a-3-startups-de-impacto-social-a-impulsar-con-exito-sus-proyectos-de-negocio/> (accessed on 19 February 2023).
77. Parlem. Parlem Ventures. 2022. Available online: <https://parlemventures.cat/en> (accessed on 19 February 2023).
78. Telefónica Innovation. Wayra. *Wayra Telefónica Innovation*. 2022. Available online: <https://www.wayra.es> (accessed on 19 February 2023).
79. MANGO and IESE. Mango Startup Studio. 2022. Available online: <https://startupstudio.mango.com/en> (accessed on 19 February 2023).
80. ESADE. ESADE Creapolis. 2022. Available online: <https://esadecreapolis.com/en/innovation/start-up-acceleration-program/> (accessed on 19 February 2023).
81. ZARA. Lanzadera, Aceleradora e Incubadora de Empresas. 2022. Available online: <https://lanzadera.es> (accessed on 19 February 2023).

82. Ungureanu, M.; Pop, N.; Ungureanu, N. Innovation and Technology Transfer for Business Development. *Procedia Eng.* **2016**, *149*, 495–500. [CrossRef]
83. Dubickis, M.; Gaile-Sarkane, E. Perspectives on Innovation and Technology Transfer. *Procedia Soc. Behav. Sci.* **2015**, *213*, 965–970. [CrossRef]
84. Lauff, C.A.; Kotys-Schwartz, D.; Rentschler, M.E. What Is a Prototype? What Are the Roles of Prototypes in Companies? *J. Mech. Des.* **2018**, *140*, 061102. [CrossRef]
85. Kendig, C.E. What Is Proof of Concept Research and How Does It Generate Epistemic and Ethical Categories for Future Scientific Practice? *Sci. Eng. Ethics* **2016**, *22*, 735–753. [CrossRef] [PubMed]
86. Preskorn, S.H. The Role of Proof of Concept (POC) Studies in Drug Development Using the EVP-6124 POC Study as an Example. *J. Psychiatr. Pract.* **2014**, *20*, 59–60. [CrossRef]
87. Ries, E. *Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*; Crown Business: New York, NY, USA, 2011.
88. Lenarduzzi, V.; Taibi, D. MVP Explained: A Systematic Mapping Study on the Definitions of Minimal Viable Product. In Proceedings of the 2016 42th Euromicro Conference on Software Engineering and Advanced Applications (SEAA), Limassol, Cyprus, 31 August–2 September 2016; pp. 112–119. [CrossRef]
89. Sharp, H.; Hall, T. (Eds.) Agile Processes, in Software Engineering, and Extreme Programming. In Proceedings of the 17th International Conference, XP 2016, Edinburgh, UK, 24–27 May 2016; Springer International Publishing: Cham, Switzerland, 2016; Volume 251. [CrossRef]
90. Moogk, D.R. Minimum Viable Product and the Importance of Experimentation in Technology Startups. *Technol. Innov. Manag. Rev.* **2012**, *4*. Available online: https://timreview.ca/sites/default/files/article_PDF/RancicMoogk_TIMReview_March2012.pdf (accessed on 23 January 2023). [CrossRef]
91. Almaazmi, J.; Alshurideh, M.; Al Kurdi, B.; Salloum, S.A. The Effect of Digital Transformation on Product Innovation: A Critical Review. In Proceedings of the International Conference on Advanced Intelligent Systems and Informatics, Cairo, Egypt, 19–21 October 2020; Hassanien, A.E., Slowik, A., Snášel, V., El-Deeb, H., Tolba, F.M., Eds.; Springer International Publishing: Cham, Switzerland, 2021; Volume 1261, pp. 731–741. [CrossRef]
92. Hinings, B.; Gegenhuber, T.; Greenwood, R. Digital innovation and transformation: An institutional perspective. *Inf. Organ.* **2018**, *28*, 52–61. [CrossRef]
93. van Tonder, C.; Schachtebeck, C.; Nieuwenhuizen, C.; Bossink, B. A framework for digital transformation and business model innovation. *Management* **2020**, *25*, 111–132. [CrossRef]
94. Mauborgne, R. Blue Ocean Leadership. 2014, p. 6. Available online: <https://hbr.org/2014/05/blue-ocean-leadership> (accessed on 9 February 2023).
95. Agolla, J.E.; Lill, J.B.V. Public Sector Innovation Drivers: A Process Model. *J. Soc. Sci.* **2013**, *34*, 165–176. [CrossRef]
96. Accenture. Accenture and Girls Who Code. Cracking the Gender Code: Get 3x More Women in Computing. 2018. Available online: https://www.accenture.com/_acnmedia/PDF-150/Accenture-Cracking-The-Gender-Code-Report.pdf (accessed on 22 February 2023).
97. Englund, R.L.; Graham, R.J. *From Experience: Linking Projects to Strategy*; Elsevier: Amsterdam, The Netherlands, 1999.
98. Krinsky, R. When the Uneasy Fusion of Strategy and Innovation Collide. 1997, p. 5. Available online: <https://www.emerald.com/insight/content/doi/10.1108/eb054594/full/html> (accessed on 10 February 2023).
99. Adler, P.S.; McDonald, D.W.; McDonald, F. Strategic Management of Technical Functions. 1992. Available online: https://www.researchgate.net/publication/228133062_Strategic_Management_of_Technical_Functions (accessed on 20 October 2022).
100. Schlegelmilch, B.B.; Diamantopoulos, A.; Kreuz, P. Strategic innovation: The construct, its drivers and its strategic outcomes. *J. Strateg. Mark.* **2003**, *11*, 117–132. [CrossRef]
101. Varadarajan, R. Innovation, Innovation Strategy, and Strategic Innovation. In *Review of Marketing Research*; Varadarajan, R., Jayachandran, S., Eds.; Emerald Publishing Limited: Bentley, UK, 2018; Volume 15, pp. 143–166. [CrossRef]
102. Govindarajan, V.; Trimble, C. Strategic Innovation and the Science of Learning. *MITSloan Manag. Rev.* **2004**. Available online: <https://sloanreview.mit.edu/article/strategic-innovation-and-the-science-of-learning/> (accessed on 19 October 2022).
103. Mahmood, Z.; Amir, A.; Javied, S.; Zafar, D.F. Strategic Management of Technology and Innovation. 2013, p. 9. Available online: https://www.researchgate.net/publication/304698926_The_Strategic_Management_of_Technology_and_Innovation (accessed on 11 December 2022).
104. Lafley, A.G.; Martin, R.L. *Playing to Win. How Strategy Really Works*; Harvard Business Review Press: Boston, MA, USA, 2013. Available online: <https://hbr.org/books/playing-to-win> (accessed on 18 December 2022).
105. Rumelt, R. *Good Strategy/Bad Strategy: The Difference and Why it Matters*; Profile Books: London, UK, 2017. Available online: <https://penguinrandomhousehighereducation.com/book/?isbn=9780307886231> (accessed on 13 March 2023).
106. Martin, R. *A New Way to Think: Your Guide to Superior Management Effectiveness*; Harvard Business Review Press: Boston, MA, USA, 2022. Available online: <https://store.hbr.org/product/a-new-way-to-think-your-guide-to-superior-management-effectiveness/10565> (accessed on 13 March 2023).
107. Briones, G. Where to compete and how to win. *Harv. Deusto Bus. Rev.* **2017**. Available online: <https://www.harvard-deusto.com/donde-competir-y-como-ganar> (accessed on 6 January 2023).

108. Stadler, C.; Hauz, J.; Matzler, K.; Von den Eichen, S.F. *Open Strategy: Mastering Disruption from Outside the C-Suite (Management on the Cutting Edge)*; The MIT Press: Cambridge, MA, USA, 2021. Available online: <https://mitpress.mit.edu/9780262366816/open-strategy/> (accessed on 7 December 2022).
109. Guerras Martín, L.A.; Navas López, J.E. *La Dirección Estratégica de la Empresa. Teoría y Aplicaciones*; Thomson Reuters: Toronto, ON, Canada, 2022.
110. Sull, D.; Turconi, S.; Sull, C.; Yoder, J. Turning strategy into results. *MIT Sloan Manag. Rev.* **2017**. Available online: <https://sloanreview.mit.edu/article/turning-strategy-into-results/> (accessed on 10 December 2022).
111. Krishnan, R.T.; Jha, S.K. Innovation Strategies in Emerging Markets: What Can We Learn from Indian Market Leaders. 2011, p. 25. Available online: https://www.researchgate.net/publication/265153593_of_India_Innovation_Strategies_in_Emerging_Markets_What_Can_We_Learn_from_Indian_Market_Leaders (accessed on 11 October 2022).
112. Bowonder, B.; Dambal, A.; Kumar, S.; Shirodkar, A. Innovation Strategies for Creating Competitive Advantage. *Res.-Technol. Manag.* **2010**, *53*, 19–32. [CrossRef]
113. Mohanbir. The 12 Different Ways for Companies to Innovate. *MIT Sloan Manag. Rev.* **2006**. Available online: <https://sloanreview.mit.edu/article/the-different-ways-for-companies-to-innovate/> (accessed on 13 December 2022).
114. Müller, J.M.; Buliga, O.; Voigt, K.-I. The role of absorptive capacity and innovation strategy in the design of industry 4.0 business Models—A comparison between SMEs and large enterprises. *Eur. Manag. J.* **2021**, *39*, 333–343. [CrossRef]
115. Ali, M. Imitation or innovation: To what extent do exploitative learning and exploratory learning foster imitation strategy and innovation strategy for sustained competitive advantage?☆. *Technol. Forecast. Soc. Chang.* **2021**, *165*, 120527. [CrossRef]
116. Jia, N. Corporate innovation strategy and disclosure policy. *Rev. Quant. Finan. Acc.* **2019**, *52*, 253–288. [CrossRef]
117. Chen, Z.; Huang, S.; Liu, C.; Min, M.; Zhou, L. Fit between Organizational Culture and Innovation Strategy: Implications for Innovation Performance. *Sustainability* **2018**, *10*, 3378. [CrossRef]
118. Gao, H.; Hsu, P.-H.; Li, K. Innovation Strategy of Private Firms. 2017, p. 54. Available online: <https://www.cambridge.org/core/journals/journal-of-financial-and-quantitative-analysis/article/innovation-strategy-of-private-firms/BBB92F28C74CAD9B4B9D2BCEC2C6FB28> (accessed on 1 December 2022). [CrossRef]
119. Kaliappen, N.; Hilman, H. Competitive strategies, market orientation types and innovation strategies: Finding the strategic fit. *WJEMSD* **2017**, *13*, 257–261. [CrossRef]
120. Valmaseda-Andia, O.; Albizu-Gallastegi, E. El papel del CSIC en el grado de apertura de la estrategia de innovación de las empresas españolas. *Rev. Esp. Doc. Cient.* **2017**, *40*, 161. [CrossRef]
121. Wanasika, I.; Conner, S.L. When Is Imitation the Best Strategy? 2011, p. 15. Available online: https://www.researchgate.net/publication/260078868_When_is_imitation_the_best_strategy (accessed on 19 October 2022).
122. Naranjo-Valencia, J.C.; Jiménez-Jiménez, D.; Sanz-Valle, R. Innovation or imitation? The role of organizational culture. *Manag. Decis.* **2011**, *49*, 55–72. [CrossRef]
123. Peng, H.; Zhou, C.; Sadowski, B.M.; Sun, T. Does an Imitation Strategy Promote Long-Term Firm Growth in a Dynamic Environment? A Meta-Analysis. *Front. Psychol.* **2021**, *12*, 774071. [CrossRef]
124. Adjei, D. Innovation Leadership Management. 2013, p. 4. Available online: https://www.academia.edu/7679933/Innovation_Leadership_Management (accessed on 19 October 2022).
125. Carmeli, A.; Gelbard, R.; Gefen, D. The importance of innovation leadership in cultivating strategic fit and enhancing firm performance. *Leadersh. Q.* **2010**, *21*, 339–349. [CrossRef]
126. Freeman, C. The determinants of innovation. *Futures* **1979**, *11*, 206–215. [CrossRef]
127. Briganti, S.E.; Samson, A. Innovation talent as a predictor of business growth. *Int. J. Innov. Sci.* **2019**, *11*, 261–277. [CrossRef]
128. Elia, A.; Kamidelivand, M.; Rogan, F.; Gallachóir, B.Ó. Impacts of innovation on renewable energy technology cost reductions. *Renew. Sustain. Energy Rev.* **2021**, *138*, 110488. [CrossRef]
129. Geng, L.; Shi, X.; Zu, L.; Chai, M.; Xing, J. Importance Calculation of Customer Requirements for Incremental Product Innovation. *Front. Psychol.* **2021**, *12*, 633472. [CrossRef] [PubMed]
130. Leavengood, S.; Anderson, T.R. Best practices in quality management for innovation performance. In Proceedings of the PICMET '11: Technology Management in the Energy Smart World (PICMET), Portland, OR, USA, 31 July–4 August 2011; p. 9.
131. Carrillo, F.A.H.; Rosas, N.C.C.; Garrces, M.A.A. Importancia de la innovación y su ejecución en la estrategia empresarial. *Innova Res. J.* **2017**, *2*, 88–105. [CrossRef]
132. Bayarçelik, E.B.; Taşel, F.; Apak, S. A Research on Determining Innovation Factors for SMEs. *Procedia Soc. Behav. Sci.* **2014**, *150*, 202–211. [CrossRef]
133. Braga, A.; Braga, V. Factors influencing innovation decision making in Portuguese firms. *Int. J. Innov. Learn.* **2013**, *14*, 329. [CrossRef]
134. Malhotra, G. Strategies in Research. 2017, p. 9. Available online: <https://www.ijarnd.com/manuscript/strategies-in-research/> (accessed on 28 October 2022).
135. van de Poel, I.; Asveld, L.; Flipse, S.; Klaassen, P.; Scholten, V.; Yaghmaei, E. Company Strategies for Responsible Research and Innovation (RRI): A Conceptual Model. *Sustainability* **2017**, *9*, 2045. [CrossRef]
136. Valentin, E.K. Swot Analysis from a Resource-Based View. *J. Mark. Theory Pract.* **2001**, *9*, 54–69. [CrossRef]
137. Geschka, H. Innovation Strategy: An Approach in Three Levels. 2015, p. 12. Available online: https://www.kindai.ac.jp/files/rd/research-center/management-innovation/kindai-management-review/vol3_10.pdf (accessed on 30 December 2022).

138. Štěrbová, M.; Loučanová, E.; Paluš, H.; Ivan, L.; Šálka, J. Innovation Strategy in Slovak Forest Contractor Firms—A SWOT Analysis. *Forests* **2016**, *7*, 118. [[CrossRef](#)]
139. Al-Mubarak, H.M.; Busler, M.; College, R.S. Innovation Systems in European Countries: A SWOT Analysis. *Eur. J. Bus. Manag.* **2012**, *4*, 13.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.