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Unlocking Innovation Value to Fuel Competitive Advantage: The Innovation Pivot Canvas

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ABSTRACT

Business model innovation is widely recognized as critical for enhancing competitive advantage. Within managerial practice, Lean methodologies and the Business model canvas are widely adopted for model design; however, the success of a new venture often hinges on the ability to integrate short-term viability with long-term sustainability and scalability. To address this gap, we present the Innovation Pivot Canvas, an agile strategic analysis tool and step-by-step methodology designed to assist the process of building a strategy to unlock the innovation's market value. Having been extensively validated across numerous entrepreneurial settings, the tool's efficacy is further demonstrated in this paper through a detailed case study involving the strategic redesign of a technology-intensive startup.

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1. Introduction

The competitive pressures that challenge many companies – such as customer demands, technological advances, the presence of global competitors, and disruptive phenomena – demand a high capacity for internal and external adaptation [1]. In response, the ability to continuously innovate business models is increasingly recognized as a crucial competitive resource [2]-[6].

Despite the recognized importance of Business Model Innovation (BMI) for company competitiveness and the increasing number of studies, especially

in the last decade [7], there remains a significant gap in practical tools designed to assist entrepreneurs and startups in embedding strategic capabilities into their innovative business models [8].

In this paper we address that gap, presenting the Innovation Pivot Canvas (IPC), a tool to assist entrepreneurs in crafting the strategic vision for the design of an innovative business model. The tool is particularly useful for highly innovative and technology-intensive companies, whether they be startups or incumbents.

In this article, following a literature review and research methodology, we present the tool, together with a methodology to facilitate the process. We

present a real case of application to a technology startup that illustrates the utilization of the tool. We then discuss the results and end with the conclusions and future work.

2. Literature review

To situate our tool within the current body of knowledge, we begin by introducing the concept of BMI and some of the most established BMI tools. We then examine the theoretical foundations related the IPC's primary objective: providing the strategic grounding for innovation-driven competitive advantage. We conclude by detailing a systematic search that characterizes the current state of tools offering similar functionalities to the IPC.

2.1 Business model innovation

BMI has attracted substantial attention in academic literature [9]-[14]. Andreini et al. [7] offered a comprehensive recent review of BMI. As Teece [15] defines it, a business model articulates the logic by which a business creates and delivers value to its customers, while ensuring the corresponding value capture. Accordingly, Foss and Saebi [10] defined BMI as a significant alteration to either some key elements of the business model or the relationships among these elements. The complexity of BMI manifests differently across organization types. Entrepreneurs often contend with expertise deficits and, in technology-intensive sectors, an overwhelming number of technological applications [16]-[19]. Conversely, incumbents must reconcile the tension between administrative efficiency and entrepreneurial exploration. Success requires moving beyond uncertainty avoidance to embrace an intrapreneurial culture and recognize uncertainty as inherent to innovation [20]-[23].

From a process perspective, several approaches have been proposed to describe the stages of BMI [24]. Among the most widely accepted is the framework proposed by Gassmann and Frankenberger [7], [25], [26], who distinguish four phases: (1) the initiation phase, where the company, its ecosystem, and the drivers of innovation are analyzed, (2) the ideation phase, which focuses on generating ideas to construct a vision of the new business model, (3) the integration phase, where the new business model is defined in detail, and (4) the implementation phase, where the plans are operationalized.

Among the practical tools facilitating the BMI process, the Business Model Canvas (BMC) stands out as the standard for materializing foundational business elements [27]. A primary virtue of the BMC is its ease of use, which makes it particularly valuable within Lean methodologies. As defined by Ries [28], Lean Startup focuses on validated iterative learning to mitigate the uncertainty of a new venture through 'build-measure-learn' cycles. Similarly, Blank and Dorf [29] proposed a structured testing of hypotheses across markets, customers, channels, and pricing. While Lean approaches effectively prioritize customer-centricity and market testing – mitigating the risk of developing products in isolation – the BMC lacks explicit strategic dimensions [27]. To bridge this gap, variants like Maurya's Lean Canvas [30] incorporated competitive strategy through elements such as 'unfair advantage', while Aulet's 'Disciplined Entrepreneurship' [31] offered a structured and complete roadmap for design. Simultaneously, Fankenberger et al. [32] proposed a BMI framework built upon an analysis of actual business model innovations.

To address the strategic analysis required for designing a new business model without sacrificing the Lean focus, we have designed the IPC as a complementary tool to the BMC. Within our approach, the aforementioned four BMI stages progress iteratively: the IPC is utilized during the initiation and ideation phases, while the BMC facilitates the detailed definition and experimentation with concrete business models. In the next section, we outline the conceptual framework that underpins the IPC as an instrument for strategic design.

2.2 BMI and competitive advantage

Historically, competitive advantage was viewed as a complex phenomenon primarily dependent on the leadership qualities of top management. This perspective shifted in the 1980s when Porter's Five Forces theory moved the strategic focus toward the firm's external environment [33], [34]. In the 1990s, building upon other authors' research, Barney [35] refocused the discussion with his resource-based approach, which argued that competitive advantage stems from internal resources. To sustain such an advantage, these resources must be VRIN – valuable, rare, inimitable, and non-substitutable – a framework later evolved into the VRIO concept by incorporating 'Organization' as a critical requirement [36]. Although often viewed as opposing, Barney acknowledges that internal and external visions are complementary: environmental models help identify

which resources can best capitalize on market opportunities or neutralize external threats [35]. While Porter [37] agreed on the importance of seizing these opportunities, he maintains that activities, rather than resources, are the fundamental unit of advantage. In this view, success depends on implementing a coherent activity system that precisely aligns a firm's offerings with customer needs.

At the dawn of the new millennium, against a backdrop of rapid technological advancement—where, for instance, the diffusion of information technologies drastically reduced transaction costs—Teece et al. [33] proposed the theory of dynamic capabilities. This theory claims that sustainable competitive advantage stems from a firm's responsiveness and innovation, and management should focus on adaptation to the evolving environment, facilitating the reconfiguration of skills and resources. Teece [38] further developed the theory clustering the dynamic capabilities into: sensing market opportunities, seizing those opportunities by mobilizing resources, and transforming the organization to maintain competitiveness. Aligned with the principles of dynamic adaptation, McGrath et al. [39] introduced the Discovery-Driven Planning for high-uncertainty environments. In those contexts, most of the relevant information is unavailable *ex-ante*, thus the primary goal is to maximize learning at the lowest possible cost through a deliberate process of experimentation. This approach ensures that assumptions are explicitly tested at key checkpoints, in order to redirect the process as needed. A few years later, Kim and Mauborgne's Blue Oceans theory explains how innovation-based companies can outperform existing solutions, in cost and service level, by developing radically new value propositions [40].

Whereas the term *business model* emerged decades ago, it is only since the 2000's decade that it consolidated as a concept clearly linked to the firm's strategy [41]. Massa et al. [42] examined the debate about the relationship between business models and classical strategy theory, identifying fundamental differences in their underlying assumptions. While classical strategy theory situates competitive advantage on the supply side – through activity systems or resource-based capabilities – the business model perspective relaxes many of its underlying assumptions. In particular, it advocates that competitive advantage can also be generated on the demand side or by other stakeholders, such as in platform ecosystems [43]. Business model theory also embraces the premise that knowledge is cognitively limited and biased, aligning more naturally with dynamic capabilities and discovery-driven perspectives. Furthermore, within

the entrepreneurship domain, these theories seamlessly connect with Lean approaches [44], [45].

Regardless of the perspective or articulation (e.g. doing things differently, possessing rare resources), the critical importance of innovation for achieving and sustaining a competitive advantage is pervasive. However, leveraging innovation for economic benefit is an inherently complex process. As Pisano underscored [46], the challenge lies not only in creating, but also in capturing value from innovation. In this sense, a sound innovation strategy should clearly address questions like: *How will innovation create value for potential customers? How will the company retain a part of that value? Which types of innovation should be prioritized?* where innovation types are distinguished depending on whether they focus on technology, the business model, or both [47]. Even when a competitive advantage is based on technological innovation, an appropriate business model is needed to create and capture value [15], [48].

2.3 Tools for strategic design in BMI

To explore the current landscape of BMI tools addressing the same research gap as the IPC, we queried the Web of Science database. The search targeted articles featuring 'business model innovation' as an author keyword, combined with the proximity of 'tool' to 'business model innovation' and strategy-related terminology within the title or abstract: `AK="business model innovation" AND TS=(tool* NEAR/10 "business model*") AND TS=(strategy or strategic or "competitive advantage")`. This search yielded nine BMI tools that include strategy-related terms in the paper abstract or title. Notably, all of these research works are of relatively recent development, having been published within the last six years. Furthermore, six of those nine tools were specifically designed for sustainable business model innovation [49]–[54], confirming sustainability research is an active research area. The remaining three are generic BMI tools. Cosenz and Bivona [8] presented a System Dynamics based model to simulate strategic scenarios and assess their impact on long-term performance. Bachmann and Jodlbauer [55] developed a conceptual process model, not yet tested, based on a literature review, comprising six phases, 23 activities and 38 tools. Finally, Panetti and Simoni [56] proposed a framework, aimed at overcoming cognitive barriers in BMI, composed by five core business model elements: Meaning, Experiential Performance, Resources, Roles, and Value Equation, for experimenting with BMI scenarios.

Despite these contributions, there remains a distinct opportunity for a framework like the IPC to facilitate the strategic analysis required to bridge the gap between an innovative idea and a promising business model.

3. Methodology

The IPC is a result of an ongoing research line originated in the context of a university entrepreneurship program. Access to this real-world experimental setting enabled the application of Action Design Research (ADR), a methodology that simultaneously investigates and solves a problem. ADR is situated within the Design Science Research (DSR) paradigm, which emerged within the Information Technology research [57] and later spread to Management research [58]. These methodologies are particularly well-suited for designing new artifacts of general validity to solve real-life problems [59]-[61]. Specifically, ADR aims to enhance artifact relevance, integrating design and evaluation within their actual context of use [62]. Our approach follows iterative loops – encompassing problem formulation, construction-intervention-evaluation, reflection and learning – drawing on both experimentation and theory to gradually refine the designed artifacts.

The first tool we developed aimed to address a real-world challenge: providing effective guidance for students, participating in an entrepreneurship program, who needed to transform innovative ideas into sources of competitive advantage. These students were often engineering students who had developed innovative and technically complex solutions, typically within university research projects, and needed to define entrepreneurial projects that could eventually scale into startups. First deployed in 2015, the tool remains in successful use within the program today. In parallel, we explored its functionality in more complex professional contexts, such as established

startups, engaging in a sequence of ADR loops that led to the framework presented in this paper. This new iteration features a modified version of the initial canvas and a systematic methodology to guide the process of strategy definition. Table 1 summarizes the key activities supporting these iterative refinement and validation processes.

As Table 1 shows, we experimented in three distinct environments: the above-mentioned university entrepreneurship program, two established companies, and three startups.

- Experimentation in a university entrepreneurship program. This environment facilitated the evolution of tool's first version through iterative improvements and large-scale testing. Between 2016 and 2025, we integrated the tool into the development process of 133 entrepreneurship projects. The experimental work comprised introductory workshops, independent work, and collaborative discussion sessions. Evaluation was primarily based on an objective comparative analysis of project definitions before and after tool utilization.
- Experimentation in established companies. We conducted this experimental work within the business innovation units of two global telecommunications firms: in 2019 within an IoT company, and in 2021 within a firm focused on high-tech integration. The analysis spanned for eight two-hour sessions, involving alpha testing through sequential working sessions, structured discussions, and systematic observations. The evaluation methodology centered on comparing the actual business models against those generated via the proposed tool.
- Experimentation with startups. Collaboration with startups between 2020 and 2024 allowed for a more in-depth testing of the tool. In the three interventions performed, we worked with technology-based startups—from the Agri-tech,

Table 1. Summary of Experimental Activities and Environments.

Experimentation Environments	Project Promoters Characterization	# Projects	# Working Sessions	Experimentation Methods
University Entrepreneurship Programme	Young entrepreneurs	133	40	Intervention Objective Evaluation
Stablished Companies	New Business Head	2	8	Alfa Testing Observation & Discussion
Startups	Main Entrepreneur & CEO	3	15	Intervention Objective & Subjective Evaluation

Electronics, and 3D-Printing industries— that had several years of experience, customer-validated business models, and were undergoing a phase of strategic redefinition. All three interventions followed the same methodology, which is detailed in Section 4.3, where the case study of the Electronics sector startup is presented.

4. Results

4.1 The Innovation Pivot Canvas

To be successful, a new business model must be rooted in sound sources of competitive advantage, with a clear strategy defined to translate those capacities in actual returns for the firm [15], [63]. Moreover, defining a strategy involves taking risks and facing the unknown [64]. Thus, rather than seeking certainties and detailed plans, the firm should focus on creating a clear, synthetic plan that captures the logic and main hypotheses [65]. The IPC is designed to promote a structured analysis to create credible sources of competitive advantage based on a unique and coherent set of innovations. The analysis provides the core elements for developing the new business model in a subsequent phase. Figure 1 delineates the five general areas of analysis of the IPC on the left —Goal, Innovation, Impact, Uncertainty, and Competitive Advantage— while the right side details each area further, subdividing them into two subareas of analysis.

The different areas of the IPC are explained below, following the standard sequence for an entrepreneurial team designing or redesigning a business model, based on one or more innovative concepts. The analysis begins in the Goal area at the center of the canvas, which is divided into two stages. First, the team formulates a vision, which is subsequently broken down into concrete and quantified objectives to guide the strategy definition throughout the remaining stages. Secondly, the focus shifts to the upper corner, the Innovation area. The innovative ideas, that can be of any type, product/service, process, organizational, or marketing [66], are detailed here. Then, their potential applications to address customer needs are outlined. The analysis in this area concludes with an overview of the competitive landscape, where the new solutions to customer needs are compared to those already offered by potential competitors. Next, the Impact area is addressed. The expression of innovation in terms of customer needs facilitates the identification of potential customers. These are key stakeholders, as well as any other stakeholders who would be significantly impacted by the innovation. They may be internal or external to the company and the innovation may have a positive (e.g. a patient finding a cure to an illness) or a negative (e.g. an employee facing an increased workload) impact on them. This mapping of stakeholders, along with the assessment of their respective impacts, provides the foundation for designing an effective value network. The value network represents value exchanges among participants in the value creation process [67], [68]. The analysis then moves on to the canvas's left side to evaluate the Uncertainty area. This area pin-

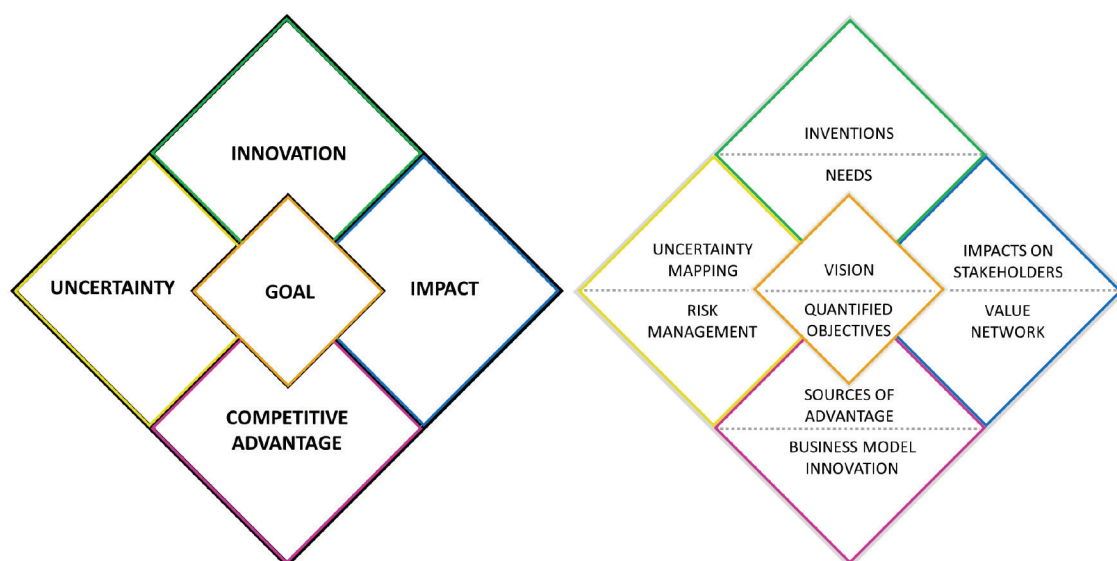


Figure 1. The Innovation Pivot Canvas. Source: Authors own work.

points the most significant sources of uncertainty associated with implementing the new business model, e.g. market, technical, or legal uncertainties. Given the positive correlation between uncertainty and innovation, particularly in radical innovation, many important sources of uncertainty may arise. Mapping the competitors in this uncertainty landscape may also be useful to better understand the market. The main goal in this area is to identify major risks and design plans to manage them. Finally, the Competitive Advantage area details the main sources of competitive advantage that emerge from the analysis in the previous areas. The analysis concludes by identifying the business model blocks more directly linked to the envisioned innovations. Figure 3, Table 1 and Table 2 show examples of IPC use, corresponding to the real case of application presented in section 4.3. Following the strategic design phase with the IPC, a detailed business model is subsequently defined using the BMC or a similar tool. While there is no one-to-one correspondence between the elements of both canvases, the design of the BMC is informed by the preceding IPC analysis. For instance, in the case of a product innovation, the output from the Innovation area, specifically regarding the customer needs analysis, forms the basis for the Value Proposition formulation. Similarly, the analysis within the Impact area serves to identify both Customer Segments and Key Partners within the BMC. Furthermore, the value network analysis provides the core information for configuring Revenue Streams, Key Activities and Key Resources.

The IPC represents a significant improvement on the original tool [69]. The intensive experimentation conducted in various contexts, detailed in Section 3,

was essential to identifying some critical missing aspects of the strategic analysis that led to the inclusion of the Goal area, as well as the definition of the Value Network within the Impact area. Furthermore, we recognized the need for a structured methodology to guide the IPC analysis process, which is outlined in the following section.

4.2 Business model innovation with the IPC. Methodology of analysis

To maximize the benefits of the analysis, it is advisable to establish a collaborative team comprising top management members of the company and analysts with expertise in the IPC tool. As shown in Figure 2, the analysis starts, in Stage 1, by defining the boundaries of the BMI.

In many cases, the new business design will not apply to the entire company, but rather to only one or a subset of business units. In Stage 2, analysts use a list of open-ended questions (detailed in Appendix A) to interview the entrepreneurial team and gather the necessary information to complete an initial IPC. Next, in Stage 3, analysts examine this initial IPC to identify any weaknesses, ambiguities, or inconsistencies among the elements, while simultaneously generating new directions for the strategy's development to overcome the detected weaknesses. The new scenarios are proposed as potential alternatives, with each one revolving around a key element of questioning. The emphasis at this stage is on the reasons for questioning, justifying the exploration of new alternatives. The process is operationalized by creating new canvases, each representing a different scenario to be explored. Within each scenario, the less solid

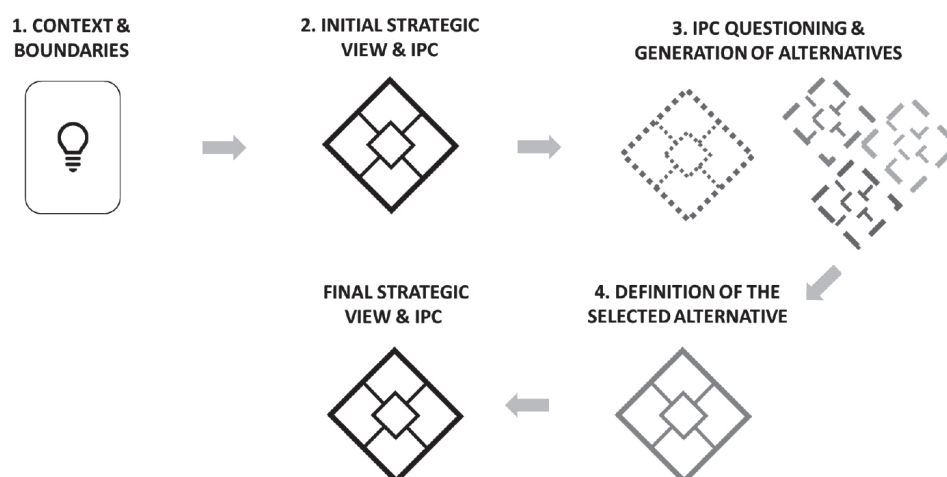


Figure 2. Stages of the IPC application methodology. Source: Authors own work.

information items are highlighted, accompanied by a commentary explaining the reasons for questioning and suggesting improvement opportunities. Finally, Stage 4, aims at defining a clear strategic vision for the new business model by fully developing the most promising of the previously discussed alternative scenarios. This entails an iterative process of completing and refining the internal and external consistency of the canvas areas until a sound strategy emerges, one supported by solid arguments for a sustainable competitive advantage.

4.3 Business model innovation with the IPC. Application to a technology startup

While the IPC was refined across multiple environments, we have chosen a specific case to illustrate the tool's functionalities in a complex, real-world scenario. This case study corresponds to a strategic redesign for a technology-based startup in the industrial electronics sector. It illustrates the functionality of the IPC and the methodology presented in the previous section, covering the four stages in Figure 2. The analysis for Elecdesign (a pseudonym used to preserve anonymity) and the final evaluation of the tool involved five working meetings between the managers and the analysts, specifically, two members of the startup's top management team and two analysts (the authors of this paper). Each meeting lasted between two and three hours.

4.3.1 Context & Boundaries

Elecdesign is a startup with a solid track record of several years, operating within a variety of business lines, and they needed to analyze one particular line where they sell a self-developed software product. Within this business line, they had embarked on an innovative project to design and develop a new software product, a software suite intended to meet a broader range of user needs. While the new product was the initial focus, the company's strategic environment presented significant new challenges as well. Therefore, a comprehensive review of the business model was necessary.

4.3.2 Initial Strategic Vision & IPC

Elecdesign's strategic vision, prior to commencing the strategic redesign, can be outlined as follows:

- The startup has demonstrated capability and experience developing software for designing

electronic equipment, along with a notable distribution capability and market knowledge.

- Their market is profitable and growing, and they expect their new software suite to attract new users, as it offers advanced design functionalities —as compared to their former software product. They planned to address the domestic market first, followed by the international market.
- Elecdesign team expects the new project to help manage certain risks associated to their current software. To date the startup has been distributing its software product as an add-on to a business partner's simulation software. However, Elecdesign needs to reconsider its sales processes because the ownership of the simulation software has recently changed. The company is concerned about the market appeal of its software if it is offered as a stand-alone product.

Next, we mapped this strategy onto the IPC framework, using a set of open-ended questions detailed in Appendix A. This information was subsequently transferred to a document for validation by the Elecdesign team. Figure 3 presents the IPC in its original format, as the figure's legibility is limited, Table 2 a summary of the essential information.

4.3.3 IPC Questioning & Generation of Alternatives

The critical examination of the initial IPC revealed various weak points in the strategy revolving around market and technical uncertainties. We proposed three change scenarios for discussion with the entrepreneurial team:

- Scenario 1: Customer orientation. The initial IPC reveals a contradiction: despite the team's perceived market expertise in the Competitive Advantage area and a low market uncertainty, the analysis in the Impact area reveals that the sales model and price remain undefined. Furthermore, a lack of data on current client software usage suggests low engagement with customer preferences. To address these gaps, targeted actions are proposed within the Impact and Uncertainty areas.
- Scenario 2: Technical innovation of the software suite. While software development is perceived as a source of competitive advantage, significant uncertainties remain regarding technical execution, namely, the high cost of recruit-

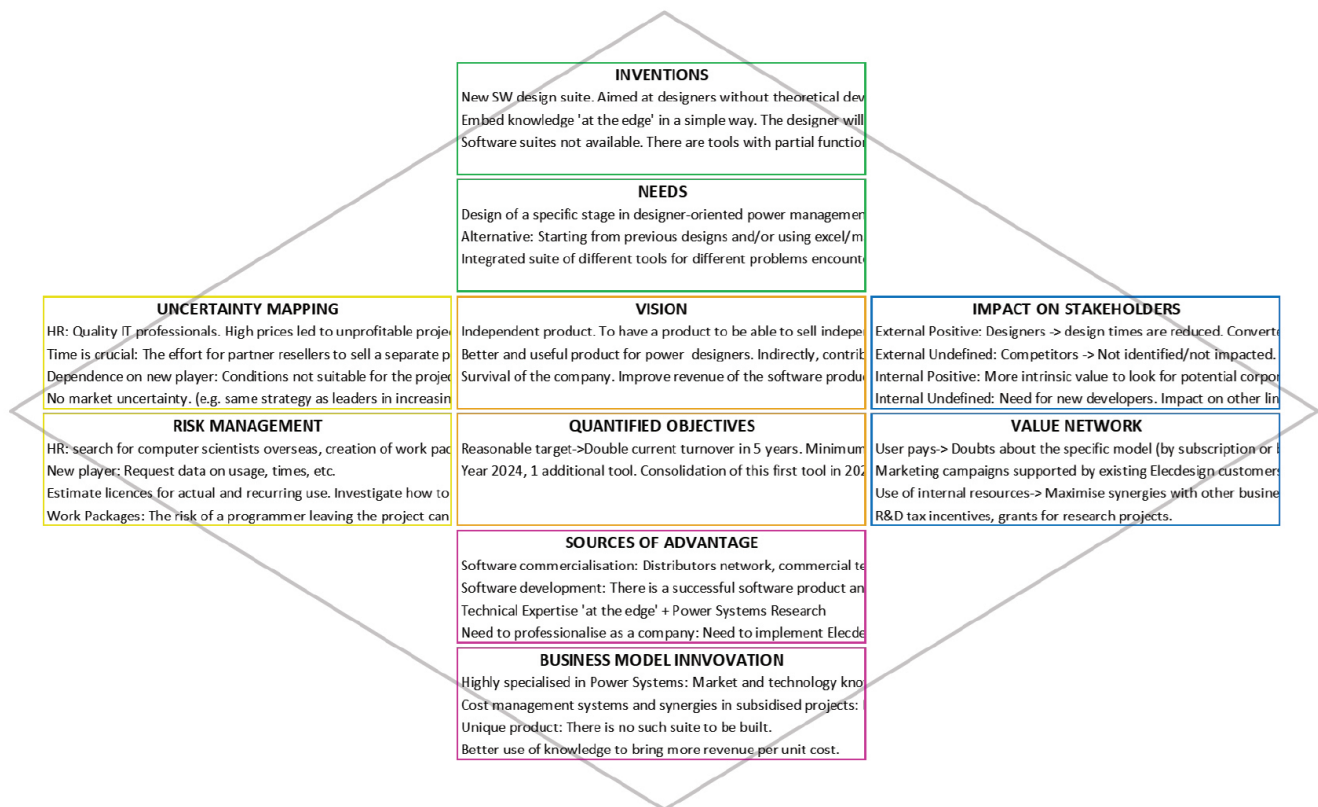


Figure 3. Initial IPC for Elecdesign. Source: Authors own work.

Table 2. Summary of the initial IPC for Elecdesign. Source: Authors own work.

GOAL Vision. To improve revenues through the development of a software suite superior to the current software product, with sales independent of other products. Quantified objectives. To double the current annual turnover within five years.	
INNOVATION Inventions. New software suite with multiple functions necessary for the design of electronic equipment. The degree of innovation is considered high due to the absence of similar tools on the market. Needs. The functionalities above described, tailored to users with limited theoretical knowledge. The closest alternatives are generalist software solutions, which demand more time and deeper theoretical knowledge.	IMPACT Impact on stakeholders. Identified impacts on both internal and external stakeholders, indicating the nature of the impact (positive, negative, or undefined). E.g.: an increased intrinsic value of the company (internal-positive); a diversion of resources from other activities (internal-negative). Value network. Not yet defined. Unclear definition of the product value for the potential clients and their willingness to pay. Difficulties to find the right programmers to develop the software suite.
UNCERTAINTY Uncertainty Mapping. -Technical risk: Access to qualified programmers at an affordable cost. -Market risk: Uncertainty related to the necessary change in the distribution strategy. However, there is no perceived uncertainty regarding the new software suite's attractiveness. Risk Management. -Technical: Explore options such as seeking computer scientists in other countries and subcontracting work packages to mitigate the risk. -Market: Request usage data from current software customers, estimate the number of licenses to be sold, and explore the feasibility of transitioning to a subscription model instead of a perpetual license.	COMPETITIVE ADVANTAGE Sources of advantage. Market knowledge and distributor network. Successful software development experience. Technical expertise in electronic equipment design. Weakness: The company relies too heavily on individuals, indicating a need for organizational improvements. Business Model Innovation. Product innovation (introducing a product that does not currently exist in the market). Highly specialized technical expertise. Unleveraged financing system, where commercialized products subsidize innovative research projects.

ing specialized programmers and the current focus on local installation, which runs counter to the industry-wide shift toward cloud computing. In this case, actions would concentrate on the Innovation, Impact, and Uncertainty areas.

- **Scenario 3: Ecosystem Stakeholders.** This scenario explores the uncertainty surrounding the financial viability of the project and the feasibility of meeting deadlines with existing resources. Given that development costs are perceived as high and revenue estimates remain speculative, the proposed strategic path would rely on engaging ecosystem stakeholders to bridge resource gaps. Thus, this alternative would concentrate actions within the Impact and Uncertainty areas.

4.3.4 Definition of the Selected Alternative. New Strategic Vision & IPC

Following a discussion of the three alternative scenarios, the Elecdesign team selected a hybrid approach, merging Scenario 2 with elements from Scenarios 1 and 3 to develop an enhanced strategic vision. Figure 4 depicts the working document used in this stage.

The new scenario was developed by evolving the initial IPC and assuming three foundational new premises: the adoption of cloud technology for software development, leveraging the startup's existing access to potential users of the new product, and the procurement of seed funding. The grey boxes in Figure 4 explicitly represent working hypotheses linked

to different areas of the canvas, facilitating a rational refinement of the strategy until a new coherent scenario emerges. Table 3 presents a summary of the new IPC. This scenario materialized on a roadmap of tasks that address the weaknesses identified in view to a better definition of the sources of competitive advantage for the new business model:

- Precisely define the needs and challenges to be addressed by the software suite, encompassing innovative applications and features not previously considered to attract potential investors.
- Conduct market research with the current user base to gauge the perceived value of the current software and inform the design of the software suite. Test monetization strategies with current users.
- Develop an Investor Deck to enable a faster minimum viable version of the product by attracting external investors.
- Explore the local ecosystem of stakeholders to identify partnerships that contribute to the development of necessary technological capabilities (e.g., research groups, software experts) and potential investors (e.g., electronic equipment manufacturers or business angels).

4.4 Elecdesign's case assessment

Following the strategic redesign, we interviewed the Elecdesign team to evaluate the IPC's usefulness and usability. We used three complementary approaches: a comparison of the changes made in

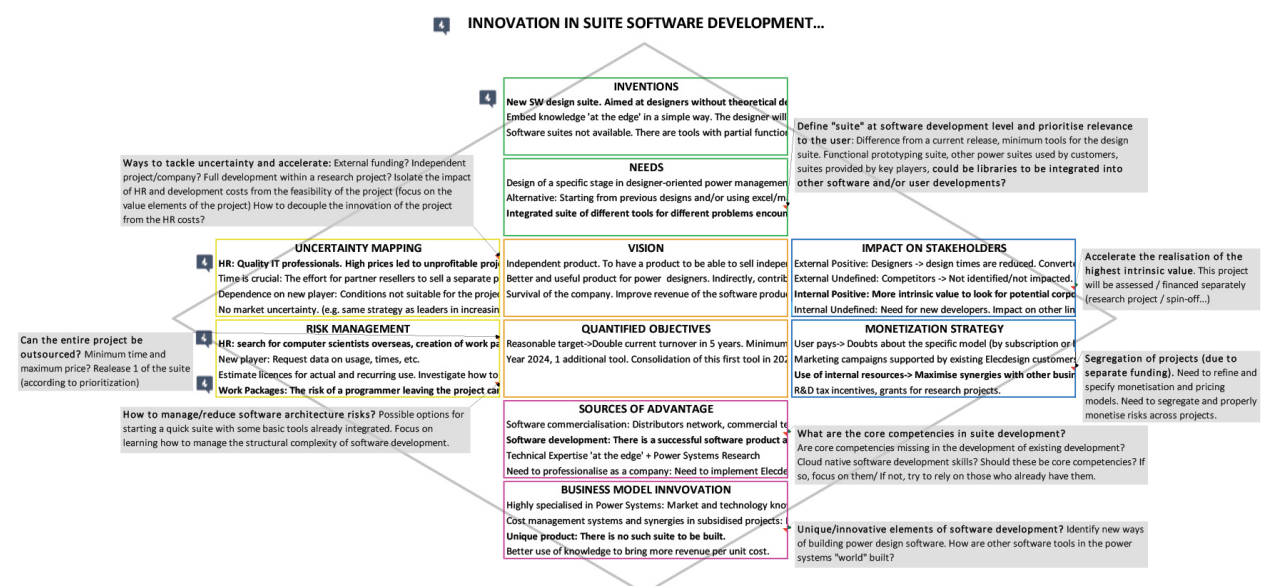


Figure 4. Scenario 2 worksheet for Elecdesign. Source: Authors own work.

Table 3. New IPC for Elecdesign. *Source: Authors own work.*

GOAL	
Vision. Software suite developed with cloud technology, using seed funding. Sales should not depend on other products.	
Quantified objectives. Attract sufficient seed funding to finance a minimum viable product (MVP) of the software suite, aiming for market entry within one year.	
INNOVATION	IMPACT
Inventions. Develop a new suite for electronic equipment design, tailored to users with limited theoretical knowledge, utilizing cloud technology.	Impact on stakeholders. In addition to previously identified stakeholders, green economy users are included. The nearby ecosystem will be explored to find potential investors and identify alliances to improve software development capabilities.
Needs. Precisely define the concrete needs and challenges that the suite would address, considering the needs of innovative users (e.g., green economy) that could attract investors. Provide these innovative users with new methods to utilize the suite (e.g., cloud APIs).	Value network. Not yet defined. To be informed by market research results (in Risk Management in the Uncertainty section). Effective suite usage and number of user maximization will be prioritized.
UNCERTAINTY	COMPETITIVE ADVANTAGE
Uncertainty Mapping. Technical risk: Acquiring the ability to use Cloud technologies for software development. Market risk: Lack of knowledge about the software suite's value for potential customers, with implications for attracting financing.	Sources of advantage. Strengthen and complement initial core competencies with technical expertise in cloud technology (at the forefront in software development) and deep knowledge of user needs.
Risk Management. Technical: Develop a minimum value product (MVP) of the software suite. Market: Conduct market research for the software suite. Prepare an investor deck, and present it to several key stakeholders such as distributors, customers and electronics manufacturers.	Business Model Innovation. Drive product innovation in functionality and technology alongside highly technical specialization. Implement innovative monetization strategies based on real usage data. Transition the company's financing model from strictly self-financing to a diversified approach.

the strategic vision for the business model redesign, a Likert-scale survey, and open-ended interview questions.

Table 4 compares the initial strategic vision (retrieved in Stage 1) with the post-intervention one, and reveals a profound shift. The entrepreneurial team not only adopted the majority of the IPC-derived recommendations, but the open-ended questions also suggested a broader systemic impact: the team acknowledged a previous over-emphasis on technical

development over customer orientation and decided to undertake a comprehensive strategic reorientation of the entire startup.

The closed-response survey and the open-ended questions coincide in two additional conclusions:

- The analysis was very useful, with a very high return—considering benefits derived from the analysis vs. time invested. Important biases were detected and a more appropriate approach to the management of the startup emerged.

Table 4. Initial and Final Strategic visions of the business model redesign. *Source: Authors own work.*

Initial Strategic Vision	Final Strategic Vision
-Demonstrated capability and experience in software development, along with distribution capacity and market knowledge.	-Regarding development technology (traditional Software development or Cloud), the decision is to "get out of the comfort zone" and evaluate different options, anticipating the consequences of each course of action.
-The market is deemed profitable and growing, with the suite incorporating new design features, expected to attract new users.	-Acknowledgment of the lack of knowledge about customers, emphasizing the need to prioritize customer-centric approaches and allocate resources to better understand and serve them.
Risks:	-Decision to leverage direct contact with customers to gain insight into their needs and priorities, integrating this knowledge into the software suite design.
-Distribution of current software and suite are uncertain due to forced changes in the distribution channel.	-Commitment to expedite entry into the market.
	-Recognition of weakness in the sales area and the associated risks of not addressing this aspect of the company. Awareness of the excessive bias towards the technical aspects.

- The entrepreneurial team did not see the feasibility of using the IPC in an autonomous way. They had no awareness of the process that led them to change their strategic approach. They considered analysts' assistance imperative, and highlighted the utility of the analysts to help identify analysis biases.

5. Discussion

The IPC is a practical and effective tool for developing the strategic foundations of the new business model. It consolidates the fundamental elements for this analysis within a single canvas, where the sources of competitive advantage are investigated through an iterative process across the five areas of the canvas. The following discussion situates the IPC's underlying logic within the extant literature on business model innovation and competitive advantage.

While technology and innovation may foster competitive advantage, firms lacking a well-developed business model often struggle to create and capture value from their innovations [70], the business model articulates the logic through which an organization creates and delivers value to its customers while ensuring the corresponding value capture [15]. Consistently with this definition, the IPC facilitates value exploration through the upper and right areas of the canvas (see Figure 1). Following the goal statement, in the central area of the canvas, the value creation analysis begins with the innovation, be it ideas, products, or processes, that drives the development of the new business model. Thus, the upper part of the canvas, the Innovation area, focuses on defining the customer needs that can be addressed through the envisioned set of inventions. In this regard, opportunities for long-term business viability and scalability increase if the innovation under consideration has many possible applications and potential users, consider for instance artificial intelligence technologies. The competitive environment is already introduced at this early stage by characterizing existing market solutions for those needs. At this point the value analysis moves into the Impact area on the right side of the canvas, where value flows among stakeholders are developed building upon the previously defined customer needs. As Zott and Amit [71] pointed out, the business model concept transcends firm boundaries by defining how the organization relates to and exchanges value with customers and other stakeholders. Accordingly, we identify potential customers as well as other stakeholders, who could benefit from the innovation's implementa-

tion, as candidates to participate in the value network. The designed value network must guarantee positive net value flows for all participants, while meeting the firm goals. The value network makes value flows explicit, thus becoming a powerful tool for exploring fundamental elements of competitive advantage, such as the necessary customer fit [37], the mechanisms of value creation, delivery and capture [15] and the core VRIO resources involved in those processes [34]. Furthermore, our framework generalizes the concept of value through the term 'impact', acknowledging that the implementation of a new business model may yield not only positive outcomes but also potential negative ones. Within this logic, value is defined as a positive impact, whereas negative impacts will typically be related to stakeholders whose interests represent strategic risks. Examples of this type of stakeholders are: a group of employees that can expect an increased work load, direct competitors or a lobbying group that fears the innovations consequences and promotes a legal reform. Those elements of risk are analyzed in the Uncertainty area, on the Canvas's left side. As McGrath emphasizes, in high-uncertainty environments, it is essential to move beyond the assumption that all necessary information for the strategic planning is available *ex-ante* [64]. In this regard, our framework assumes that innovation and uncertainty are intertwined, two sides of the same coin. Rather than ignoring its presence, the IPC places uncertainty as a focal point, leveraging its management as a source of competitive advantage. Regardless of their nature, the explicit consideration of risks enhances the likelihood of reinforcing the strategic uniqueness and alignment with both internal and environmental conditions. The Competitive Advantage area summarizes the conclusions of the analysis within the previous areas in terms of sources for competitive advantage, and the most innovative aspects of the business model.

Having established the theoretical foundations of the canvas, it is also important to note that the IPC should be understood as an integrative and flexible framework that may accommodate a wide range of strategic analysis tools, depending on the specific needs of the case. For instance, within the Uncertainty area, a classic PESTEL analysis can be employed as a guide to identify the primary sources of environmental uncertainty.

Regarding the methodology of analysis with the IPC, we propose two main complementary processes: an open exploration of the wide spectrum of possibilities, followed by the definition of a coherent strategic scenario. In the initial brainstorming process, internal consistency is temporarily deprioritized to favor broad

exploration. Mapping each scenario on a separate canvas enables the investigation of distinct strategic pathways, while accompanying annotations facilitate rational discussion. For the second process (the articulation of a solid strategic vision) multiple iterations are typically required to develop both internal and external coherence across the five areas of the canvas. Concerning the practical details of the methodology, the open-ended questions provided in Appendix 1 significantly facilitate the systematic completion of the initial canvas. Not surprisingly, the involvement of external analysts mitigates biases while enhancing creativity and the breadth of strategic options.

As for the case study, two primary findings may be highlighted. First, the IPC's inherent flexibility across varying levels of analytical intensity. In this instance, the intervention was intentionally brief, spanning only a few weeks with minimal time investment; consequently, rather than yielding a finalized strategic vision, the process produced a roadmap of activities that should be addressed to validate or modify the preliminary strategic vision. Within the framework of business model innovation, conceptualized by Demil and Lecocq as a continuous transformation aimed at achieving 'dynamic consistency' [72], the IPC emerges as an agile instrument that fosters strategic iteration. It ensures that the initiation and ideation stages provide a sound strategic orientation for the subsequent phases of iteration and progressive refinement of the new business model. Second, the analysis had significant implications beyond the specific business unit under review. Despite the brevity of the intervention, the process triggered a profound cognitive shift within the management team, who recognized the urgent need for a strategic reorientation of the startup from a techno-centric approach to a more customer-oriented one. This case illustrates the relevance of viewing the business model as a cognitive structure, as advocated by Tripsas and Gavetti [73] and Martins et al. [74], which fundamentally shapes managerial schemas and, consequently, the firm's competitive capacity.

6. Conclusions

Developing a strategy to support a new business model entails navigating uncertainty and evaluating a multitude of options. This challenge is particularly acute for highly innovative ventures, where the design process often gives rise to unconscious biases that lead to suboptimal outcomes. The IPC presented in this paper complements the BMC, offering a practical tool for the strategic design of new business models

by reconciling two dominant perspectives: it enables a deliberate analytical process for redesigning business models to commercially exploit new technologies, consistent with Casadesus-Masanell and Ricart [63] and Teece [15]; and simultaneously, it incorporates the dynamic adaptation view, advocated by authors such as McGrath [64], Chesbrough [75] or Sosna et al. [76], which emphasizes experimentation and trial-and-error. Thus, the IPC promotes an agile and effective process that places innovation at the core, guiding the user through a structured sequence for strategic analysis. It synthesizes within a single canvas the underlying architecture for value creation, delivery, and capture, integrating relevant internal and external elements, thereby facilitating group discussion, decision-making, and the documentation of the rationale behind each strategic choice.

The accompanying methodology facilitates the utilization of the IPC, providing structured guidance throughout the process. Practical application in real-world contexts has already demonstrated its potential as a robust strategic analysis tool for the early stages of BMI; notably, the case study highlights the IPC's transformative capacity even under minimal time investment. Regarding future research, we aim to develop further materials to streamline the tool's application. Furthermore, the IPC offers a compelling approach to Sustainable Business Model Innovation, as it seamlessly integrates core strategic concepts essential to the field.

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References

- [1] M. Bogers, H. Chesbrough, S. Heaton, and D. J. Teece, "Strategic Management of Open Innovation: A Dynamic Capabilities Perspective," *Calif. Manag. Rev.*, vol. 62, no. 1, pp. 77–94, 2019, doi: 10.1177/0008125619885150.
- [2] N. Schaffer, S. Hermes, J. Weking, A. Hein, and H. Krcmar, "Continuous Business Model Innovation and Dynamic Capabilities: The Case of Cewe," *Int. J. Innov. Manag.*, vol. 26, no. 6, 2022, doi: 10.1142/S1363919622500384.

- [3] A. L. Schmidt and L. Scaringella, "Uncovering disruptors' business model innovation activities: evidencing the relationships between dynamic capabilities and value proposition innovation," *J. Eng. Technol. Manag.*, vol. 57, 2020, doi: 10.1016/j.jengtecman.2020.101589.
- [4] A. Asemokha, J. Musona, L. Torkkeli, and S. Saarenketo, "Business model innovation and entrepreneurial orientation relationships in SMEs: Implications for international performance," *J. Int. Entrep.*, vol. 17, no. 3, pp. 425–453, 2019, doi: 10.1007/s10843-019-00254-3.
- [5] L. Bengtsson and S. Tassavoli, "The Role of Business Model Innovation for Product Innovation Performance Papers in Innovation Studies," *Int. J. Innov. Manag.*, vol. 22, no. 7, 2018, doi: <https://doi.org/10.1142/S1363919618500615>.
- [6] D. J. Teece, "Business models and dynamic capabilities," *Long Range Plann.*, vol. 51, no. 1, pp. 40–49, 2018, doi: 10.1016/j.lrp.2017.06.007.
- [7] D. Andreini, C. Bettinelli, N. J. Foss, and M. Mismetti, "Business model innovation: a review of the process-based literature," *J. Manag. Gov.*, vol. 26, no. 4, pp. 1089–1121, 2022, doi: 10.1007/s10997-021-09590-w.
- [8] F. Cosenza and E. Bivona, "Fostering growth patterns of SMEs through business model innovation. A tailored dynamic business modelling approach," *J. Bus. Res.*, vol. 130, pp. 658–669, 2021, doi: 10.1016/j.jbusres.2020.03.003.
- [9] C. M. Christensen, T. Bartman, and D. Van Bever, "The Hard Truth About Business Model Innovation," *MIT Sloan Manag. Rev.*, vol. 58, no. 1, 2016.
- [10] N. J. Foss and T. Saebi, "Fifteen Years of Research on Business Model Innovation: How Far Have We Come, and Where Should We Go?," *J. Manage.*, vol. 43, no. 1, pp. 200–227, 2017, doi: 10.1177/0149206316675927.
- [11] M. Filser, S. Kraus, M. Breier, I. Nenova, and K. Puumalainen, "Business model innovation: Identifying foundations and trajectories," *Bus. Strategy Environ.*, vol. 30, no. 2, pp. 891–907, 2021, doi: 10.1002/bse.2660.
- [12] S. Vaska, M. Massaro, E. M. Bagarotto, and F. Dal Mas, "The Digital Transformation of Business Model Innovation: A Structured Literature Review," *Front. Psychol.*, vol. 11, p. 539363, 2021, doi: 10.3389/fpsyg.2020.539363.
- [13] H. Munir, L. Bengtsson, and E. Åkesson, "Management tools for business model innovation—A review," in *Innovation*, Taylor & Francis, 2022, pp. 141–158, doi: 10.4324/9780429346033-11.
- [14] A. Salamzadeh, S. Mortazavi, M. Hadizadeh, and V. Braga, "Examining the effect of business model innovation on crisis management: the mediating role of entrepreneurial capability, resilience and business performance," *Innov. Manag. Rev.*, vol. 20, no. 2, pp. 132–146, 2023, doi: 10.1108/INMR-11-2021-0213.
- [15] D. J. Teece, "Business models, business strategy and innovation," *Long Range Plann.*, vol. 43, no. 2–3, pp. 172–194, 2010, doi: 10.1016/j.lrp.2009.07.003.
- [16] S. Cavalcante, P. Kesting, and J. Uhløi, "Business model dynamics and innovation: (re)establishing the missing linkages," *Manag. Decis.*, vol. 49, no. 8, pp. 1327–1342, 2011.
- [17] L. Massa and C. L. Tucci, "Business model innovation," in *The Oxford Handbook of Innovation Management*, M. Dodgson, D. Gann, and N. Phillips, Eds., Oxford University Press, 2014.
- [18] B. Dattee, O. Alexy, and E. Autio, "Maneuvering in poor visibility: How firms play the ecosystem game when uncertainty is high," *Acad. Manag. J.*, vol. 61, no. 2, pp. 466–498, 2018, doi: 10.5465/amj.2015.0869.
- [19] D. S. Silva, A. Ghezzi, R. B. de Aguiar, M. N. Cortiniglia, and C. S. ten Caten, "Lean Startup, Agile Methodologies and Customer Development for business model innovation: A systematic review and research agenda," *Int. J. Entrep. Behav. Res.*, vol. 26, no. 4, pp. 595–628, 2020, doi: 10.1108/IJEBR-07-2019-0425.
- [20] R. Kanter, "Supporting Innovation and Venture Development in Established Companies," *J. Bus. Ventur.*, pp. 47–60, 1985.
- [21] F. Boehle, "Management of Uncertainty - A Blind Spot in the Promotion of Innovations," in *Enabling Innovation*, Springer., Sabina Jeschke, Ingrid Isenhardt, Frank Hees, and Sven Trantow, Eds., 2011. doi: DOI10.1007/978-3-642-24503-9_2.
- [22] S. Khanagha, H. Volberda, and I. Oshri, "Business model renewal and ambidexterity: Structural alteration and strategy formation process during transition to a Cloud business model," *RD Manag.*, vol. 44, no. 3, pp. 322–340, 2014, doi: 10.1111/radm.12070.
- [23] B. Grebić, D. Č. Lalić, S. M. Veljković, N. Zivlak, and M. Savković, "Elevating Corporate Transformation: The Power of Agile Intrapreneurship," *Int. J. Ind. Eng. Manag.*, vol. 16, no. 1, pp. 64–75, 2025, doi: 10.24867/IJIE-371.
- [24] B. W. Wirtz and P. Daiser, "Business Model Innovation Processes: A Systematic Literature Review," *J. Bus. Models*, vol. 6, no. 1, p. 2329, 2018, doi: 10.5278/ojs.jbm.v6i1.2397.
- [25] O. Gassmann and K. Frankenberger, *The Business Model Navigator: The strategies behind the most successful companies.*, 3rd ed. FT Publishing International, 2025.
- [26] A. Sabatini, M. Cucculelli, and G. L. Gregori, "Business model innovation and digital technology: The perspective of incumbent Italian small and medium-sized firms," *Entrepreneurial Business and Economics Review*, vol. 10, no. 3, pp. 23–35, 2022, doi: 10.15678/EBER.2022.100302.
- [27] A. Osterwalder and Y. Pigneur, *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Hoboken, NJ: John Wiley & Sons, 2010.
- [28] E. Ries, *The lean startup. How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. New York: Crown Business, 2011.
- [29] S. Blank and B. Dorf, *The startup owner's manual: The Step-by-Step Guide for Building a Great Company*. Pescadero, CA: K&S; Ranch, Inc., 2012.
- [30] A. Maurya, *Running Lean: Iterate from Plan A to a Plan That Works*. Sebastopol, CA: O'Reilly Media, Inc., 2012.
- [31] B. Aulet, *Disciplined Entrepreneurship: 24 Steps to a Successful Startup*. Hoboken, NJ: John Wiley & Sons, 2013.
- [32] K. Frankenberger, T. Weiblen, M. Csik, and O. Gassmann, "The 4I-framework of business model innovation: a structured view on process phases and challenges," *Int. J. Prod. Dev.*, vol. 18, no. 3/4, pp. 249–273, 2013, doi: 10.1504/IJPD.2013.055012.
- [33] D. J. Teece, G. Pisano, and A. Shuen, "Dynamic Capabilities and Strategic Management," *Strategic Manag. J.*, vol. 18, no. 7, pp. 509–533, 1997.
- [34] I. M. Cockburn, R. M. Henderson, and S. Stern, "Untangling the origins of competitive advantage," *Strategic Manag. J.*, vol. 21, no. 10, pp. 1123–1145, 2000.
- [35] J. Barney, "Firm Resources and Sustained Competitive Advantage," *J. Manage.*, vol. 17, no. 1, pp. 99–120, 1991.
- [36] J. B. Barney, "Looking inside for Competitive Advantage," *Acad. Manag. Exec.*, vol. 9, no. 4, pp. 49–61, 1995.
- [37] M. E. Porter, "What Is Strategy?," *Harv. Bus. Rev.*, vol. 6, no. 74, pp. 61–78, 1996.
- [38] D. J. Teece, "Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance," *Strategic Manag. J.*, vol. 28, no. 13, pp. 1319–1350, 2007, doi: 10.1002/smj.64.

- [39] R. McGrath and I. C. MacMillan, "Discovery-Driven Planning," *Harv. Bus. Rev.*, vol. 73, no. 4, pp. 44–54, 1995.
- [40] W. Kim and R. Mauborgne, "Blue Ocean Strategy," *Harv. Bus. Rev.*, vol. 82, no. 10, pp. 76–84, 2004.
- [41] B. W. Wirtz, A. Pistoia, S. Ullrich, and V. Göttel, "Business Models: Origin, Development and Future Research Perspectives," *Long Range Plann.*, vol. 49, no. 1, pp. 36–54, 2016.
- [42] L. Massa, C. L. Tucci, and A. Afuah, "A critical assessment of business model research," *Acad. Manag. Ann.*, vol. 11, no. 1, 2017, doi: 10.5465/annals.2014.0072.
- [43] M. G. Jacobides, C. Cennamo, and A. Gawer, "Towards a theory of ecosystems," *Strategic Manag. J.*, vol. 39, no. 8, pp. 2255–2276, 2018, doi: 10.1002/smj.2904.
- [44] R. G. McGrath, "Who Learns Fastest, Wins: Lean Startup and Discovery Driven Growth," *J. Manage.*, vol. 50, no. 8, pp. 3162–3182, 2024, doi: 10.1177/01492063231204870.
- [45] C. L. Tucci, Y. Snihur, E. Novelli, and T. Felin, "A debate: does Lean Startup represent a giant leap?," *Ind. Innov.*, vol. 32, no. 4, pp. 500–511, 2025, doi: 10.1080/13662716.2025.2476431.
- [46] G. P. Pisano and D. J. Teece, "How to Capture Value from Innovation: Shaping Intellectual Property and Industry Architecture," *Calif. Manage. Rev.*, vol. 50, no. 1, pp. 278–296, 2007.
- [47] G. P. Pisano, "You need an innovation strategy," *Harv. Bus. Rev.*, pp. 44–54, 2015.
- [48] N. Rosa, F. Villena, and E. González, "Process and product innovation in the Spanish construction industry: the mediating role of organizational innovation," *Int. J. Ind. Eng. Manag.*, vol. 14, no. 1, pp. 1–12, 2023, doi: 10.24867/IJIEEM-2023-1-320.
- [49] B. Baldassarre et al., "Addressing the design-implementation gap of sustainable business models by prototyping: A tool for planning and executing small-scale pilots," *J. Clean. Prod.*, vol. 255, p. 120295, 2020, doi: 10.1016/j.jclepro.2020.120295.
- [50] G. Goffetti, D. Böckin, H. Baumann, A. M. Tillman, and T. Zobel, "Towards sustainable business models with a novel life cycle assessment method," *Bus. Strategy Environ.*, vol. 31, no. 5, pp. 2019–2035, 2022, doi: 10.1002/bse.3005.
- [51] M. Coffay and N. Bocken, "Sustainable by design: An organizational design tool for sustainable business model innovation," *J. Clean. Prod.*, vol. 427, 2023, doi: 10.1016/j.jclepro.2023.139294.
- [52] M. T. Islam and U. Iyer-Raniga, "Circular Business Model Value Dimension Canvas: Tool Redesign for Innovation and Validation through an Australian Case Study," *Sustainability (Switzerland)*, vol. 15, no. 15, 2023, doi: 10.3390/su15151553.
- [53] K. M. Hoang and A. Böckel, "Cradle-to-cradle business model tool: Innovating circular business models for startups," *J. Clean. Prod.*, vol. 467, p. 142949, 2024, doi: 10.1016/j.jclepro.2024.142949.
- [54] P. Rittershaus, V. Aryan, D. Sánchez, M. Renner, and J. Poepplbus, "Integrating Life Cycle Assessment, Monetised Externalities and Value Alignment for Strategic Reconfiguration of Circular Business Models: The Case of Smartphones," *Bus. Strategy Environ.*, vol. 35, no. 2, pp. 1880–1901, 2026, doi: 10.1002/bse.70271.
- [55] N. Bachmann and H. Jodlbauer, "Iterative business model innovation: A conceptual process model and tools for incumbents," *J. Bus. Res.*, vol. 168, p. 114177, 2023, doi: 10.1016/j.jbusres.2023.114177.
- [56] E. Panetti and M. Simoni, "Designing a Visual Inquiry Tool for Business Model Innovation," *IEEE Trans. Eng. Manag.*, vol. 72, pp. 134–145, 2025, doi: 10.1109/TEM.2024.3512780.
- [57] S. T. March and G. F. Smith, "Design and natural science research on information technology," *Decis. Support Syst.*, vol. 15, no. 4, pp. 251–266, 1995, doi: 10.1016/0167-9236(94)00041-2.
- [58] A. Dresch, D. P. Lacerda, and J. A. V. Antunes, "General Aspects Related to Research in Management," in *Design Science Research*, Cham: Springer International Publishing, 2015, pp. 1–10. doi: 10.1007/978-3-319-07374-3_1.
- [59] A. Pascal, C. Thomas, and A. G. L. Romme, "Developing a Human-centred and Science-based Approach to Design: The Knowledge Management Platform Project," *Br. J. Manag.*, vol. 24, no. 2, pp. 264–280, 2013, doi: 10.1111/j.1467-8551.2011.00802.x.
- [60] M. Savković, D. Čirić Lalić, B. Lalić, U. Marjanović, T. Vučković, and M. Petrović, "A glance into holistic project success with organisational agility and project resilience," *Teh. Vjesn.*, vol. 31, no. 4, pp. 1030–1039, 2024, doi: 10.17559/TV-20230411000523.
- [61] J. E. Van Aken, "Management research as a design science: Articulating the research products of mode 2 knowledge production in management," *Br. J. Manag.*, vol. 16, no. 1, pp. 19–36, 2005, doi: 10.1111/j.1467-8551.2005.00437.x.
- [62] M. K. Sein, O. Henfridsson, S. Purao, M. Rossi, and R. Lindgren, "Action Design Research," *MIS Q.*, vol. 35, no. 1, pp. 37–56, 2011.
- [63] R. Casadesus-Masanell and J. E. Ricart, "From strategy to business models and onto tactics," *Long Range Plann.*, vol. 43, no. 2–3, pp. 195–215, 2010, doi: 10.1016/j.lrp.2010.01.004.
- [64] R. G. McGrath, "Business models: A discovery driven approach," *Long Range Plann.*, vol. 43, no. 2–3, pp. 247–261, 2010, doi: 10.1016/j.lrp.2009.07.005.
- [65] R. L. Martin, "The Big Lie of Strategic Planning," *Harv. Bus. Rev.*, vol. 92, no. 1/2, pp. 78–84, 2014.
- [66] OECD Eurostat, *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data*, Third edit. 2005.
- [67] E. Den Ouden, *Innovation design: Creating value for people, organizations and society*. Springer-Verlag London Ltd, 2012. doi: 10.1007/978-1-4471-2268-5.
- [68] V. Allee, "Value-creating networks: Organizational issues and challenges," *Learning Organization*, vol. 16, no. 6, pp. 427–442, 2009, doi: 10.1108/09696470910993918.
- [69] I. García-Gutiérrez and F. J. Martínez-Borreguero, "The innovation pivot framework: Fostering business model innovation in startups," *Research Technology Management*, vol. 59, no. 5, pp. 48–56, 2016, doi: 10.1080/08956308.2016.1208043.
- [70] H. Chesbrough and R. S. Rosenbloom, "The role of the business model in capturing value from innovation: Evidence from Xerox Corporation's technology spin-off companies," *Ind. Corp. Change*, vol. 11, no. 3, pp. 529–555, 2002, doi: 10.1093/icc/11.3.529.
- [71] C. Zott and R. Amit, "Business Model Design and the Performance of Entrepreneurial Firms," *Organ. Sci.*, vol. 18, no. 2, pp. 181–199, 2007, doi: 10.1287/orsc.1060.0232.
- [72] B. Demil and X. Lecocq, "Business model evolution: In search of dynamic consistency," *Long Range Plann.*, vol. 43, no. 2–3, pp. 227–246, 2010, doi: 10.1016/j.lrp.2010.02.004.
- [73] M. Tripsas and G. Gavetti, "Capabilities, Cognition, and Inertia: Evidence from Digital Imaging," *Strategic Manag. J.*, no. 21, pp. 1147–1161, 2000.
- [74] L. L. Martins, V. P. Rindova, and B. E. Greenbaum, "Unlocking the hidden value of concepts: A cognitive approach to business model innovation," *Strategic Entrep. J.*, vol. 9, no. 1, pp. 99–117, 2015, doi: 10.1002/sej.1191.
- [75] H. Chesbrough, "Business model innovation: Opportunities and barriers," *Long Range Plann.*, vol. 43, no. 2–3, pp. 354–363, 2010.

- [76] M. Sosna, R. N. Treviño-Rodríguez, and S. R. Velamuri, "Business model innovation through trial-and-error learning: The naturhouse case," *Long Range Plann.*, vol. 43, no. 2-3, pp. 383-407, 2010, doi: 10.1016/j.lrp.2010.02.003.

Appendix A. IPC list of open-ended questions

Area	Subarea	Questions
GOAL	Vision	i. What are your objectives for the innovation project? The project stakeholders explain their objectives openly and without preconditions. ii. What are the priorities among your objectives, if there are several? iii. Do you have social and/or ecological objectives in addition to economic ones?
	Quantified objectives	i. Do you have quantified objectives (how would these objectives materialize)? Specify domains of development (geographic or otherwise). ii. Is there a minimum in the quantification of the objectives (such that if it is not feasible to reach, the project should not start)? iii. What is the time horizon of the project? iv. Do you have—or can you imagine—a visualized annual display showing what the project would look like in Year 1, Year 5, and Year 10?
INNOVATION	Inventions	i. What elements of innovation are there in the project? ii. If there are elements of innovation, what are their novel features? iii. At what level do they represent innovation? (Internal, nearby competitors, sector-wide, cross-sector, or global.)
	Needs	i. What needs do these inventions meet, or what problems do they solve? ii. How are the same problems being solved today? Provide commercial examples. iii. Why and how is the proposed new approach different?
IMPACT	Impacts on Stakeholders	i. Have you thought about who would be the stakeholders affected (positively or negatively) by the innovation? ii. Who would be the main stakeholders, and can you briefly explain how the invention affects each group? iii. Is it feasible to quantify this impact? iv. If there are social and/or ecological objectives, have you identified or considered their impacts?
	Value Network	i. Have you considered how to engage all or a subset of the above stakeholders in developing a monetization strategy for the project? ii. If you have considered it, do you have any idea or have you thought about quantifying the above? iii. If there are social or ecological objectives, please specify these as well (including other possible outcomes, etc.)
UNCERTAINTY	Uncertainty Mapping	i. What are the main internal and external uncertainty factors you believe may affect your project (technical, legal, market, etc.)? ii. Can you rank or order them in terms of the risk they pose to the project? iii. Have you visualized and/or considered alternative scenarios, taking these sources of uncertainty into account?
	Risk Management	i. Have you thought of, or can you now think of, measures or tools to manage these uncertainties and risks? ii. Have you considered competition or learning from competitors in this context of uncertainty (e.g., being surpassed, being imitated)?
COMPETITIVE ADVANTAGE	Sources of advantage	i. Do you believe you have the core competencies for this project? If so, what are they? ii. What additional elements are necessary to strengthen core competencies?
	Business Model Innovation	i. Have you thought about what your competitive advantage would be? ii. How is it materialized in your business model? iii. How is the project's growth supported by its competitive advantage? iv. How is this growth sustained over time?