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An analysis of kitchen manufacturers in the Curaçao Market by applying Kolyada's Business Modeling and Strategic Planning Methodology



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Abstract

Business modeling and strategic planning are crucial for navigating competitive market environments. This study explores how Villa Exclusivo B.V, a pre-assembled and custom-made kitchen factory located in Curaçao (Netherlands Antilles), upgraded its business strategy by applying Kolyada's business modeling and strategic planning theory and methodology, referred to as, "Kolyada's methodology." Specifically, Kolyada's methodology enables firm leaders to evaluate target cluster selection and market segmentation, and perform business model optimization based on projected industry trends. By combining these tools, this study illustrates the methodology's potential to effectively assess a competitive environment, create a market model, and forecast its volume, as well as evaluate and forecast the performance of companies operating within a market niche. Additionally, it provides scenario-based approaches to evaluate potential business outcomes under different economic conditions. While applications of Kolyada's methodology were previously limited to Russian-language scholarship (Russia and CIS), this study's findings provide practical insights into strategic decision-making for English-speaking professionals, demonstrating how structured business modeling can improve a company's market positioning.

Keywords: Business modeling, market forecasting, strategic management, strategic planning, competitive positioning, target market segmentation, clustering, clusterization.

1. Introduction

In today's dynamic and uncertain business world, business models must evolve and innovate, leveraging technological advancements to capitalize on new opportunities (Morris et al. 2005; Nielsen and Aagaard 2021). Forecasting tools are crucial for this process because they enable organizations to simulate scenarios, evaluate potential outcomes, and align their strategies with future goals. Ultimately, forecasting

enables firms to adapt their business models and create customer value in an increasingly globalized market (Baden-Fuller and Haefliger 2013).

Although Magretta (2002) defined business models fairly simply as stories that show *how organizations operate*, the management literature has struggled to reach a consensus on their operational definition. For example, in a review of 103 publications on business models, Zott et al. (2010) found that 37% did not provide a definition of the concept, 19% referenced definitions from other authors, and 44% proposed distinct business models based on one or more specific elements. Following Gambardella and McGahan (2010), this study defines a business model as a company's method to produce revenue at a logical cost that integrates assumptions regarding how to generate and obtain value. More concretely, a business model also demonstrates how an organization plans to surpass competitors and succeed

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in saturated “red ocean” markets through strategic planning and management.

Business models often operate in collaboration with business strategy, to the extent that Massa et al. (2017) viewed a business model as a continuation of the firm’s strategy, rather than a new element. Along similar lines, Slávik and Zagoršek (2016) highlighted that a business model outlines how a firm operates and generates revenue, whereas a business strategy defines and explicates in what way, where, and for what reason a business model is applied. George and Bock (2011) argued, however, that business models can be non-reflexive, stationary, and centered on opportunities, whereas strategy is dynamic, reflexive, and focused on competitors/environments. According to Teece (2018), a business model must be effective if it is aligned with a strategy. Overall, while strategy plays a significant role in combination with business model, the business model itself can predetermine strategic choices (Kolyada 2023).

Despite the expanding recognition of business models as strategic tools, a gap remains in empirical research on how structured methodologies can be applied in niche manufacturing industries. Existing frameworks, such as the Business Model Canvas (Osterwalder and Pigneur 2010) and the Balanced Scorecard (Kaplan and Norton 1996), offer strategic planning insights but remain primarily descriptive and do not incorporate structured market forecasting or competitive positioning approaches tailored to smaller, industry-specific businesses. By comparison, “Kolyada’s methodology”—a business modeling and strategic planning theory and methodology developed by Andrey Kolyada (Kolyada 2014, 2023, 2025)—enables firm leaders to evaluate target cluster selection and market segmentation and perform business model optimization based on projected industry trends. However, empirical applications of Kolyada’s methodology have appeared almost exclusively in Russian-language outlets (Russia and CIS), limiting both its visibility and validation in the international English-speaking literature.

This study addresses these gaps by applying Kolyada’s methodology, which emphasizes market forecasting as a means to anticipate future market trends more precisely, within the context of a kitchen manufacturing firm in Curaçao. Accordingly, the crucial research question is: How can Kolyada’s meth-

odology be applied to forecast market trends and optimize business strategies in kitchen manufacturing firms? Villa Exclusivo B.V served as an illustrative case for this analysis.

Situating the case study within the broader field of strategic management highlights a key principle: forecasting is not only a methodological tool but also a critical enabler of organizational performance. Effective business performance relies heavily on the ability to forecast with precision, use data to establish goals, allocate resources, and minimize potential risks (Chambers et al. 1971; Theodorou et al. 2025). These forecasts can be effectively employed in managerial decision-making by creating knowledge, leading policy decisions, and tracking system performance (Lindberg and Zackrisson 1991).

Maximizing the return on invested resources is another vital advantage of integrating business modeling and market forecasting. By incorporating projections of market fluctuations and competitors’ strategic actions into business modeling, rather than merely reacting to market shifts and competitors’ achievements, organizations can take proactive steps to stay ahead of their competitors in the market. Companies gain a competitive edge by identifying high-return opportunities in environments with limited resources. These projections inform key decisions, help align a company’s goals better, and bridge the gap between forecasting and effective planning. In particular, specialized manufacturing firms must strategically choose the appropriate niche. Without that clarity, a business risks spreading too thin across many opportunities, wasting valuable time and resources. Dalgic and Leeuw (1994) noted that, as competition intensifies, only the most adaptable businesses tend to survive. Adapting within the right niche is equally crucial; resilient companies stand out in their ability and capacity to adapt in response to the ever-evolving marketplace. Mintzberg (1994) emphasizes that, at times, strategies for decision-making should remain a broad and flexible vision rather than being precisely defined, allowing for adaptation to a changing environment.

Strategic management encompasses the methods and tools necessary to execute these steps effectively, including the selection of an effective business model for a company’s market niche (Casadesus-Masanell and Ricart 2010). Many existing studies on this pro-

cess focus on large firms, thereby creating a gap in the literature on small- to medium-sized niche manufacturers. Accordingly, this study applies the algorithm present in Kolyada's methodology to present a case study of business model development for a small and medium-sized enterprise (SME) in the custom kitchen industry. It investigates whether Kolyada's methodology can bridge the gap between models and strategy by offering a structured method for business modeling, strategic planning, and forecasting in a niche manufacturing environment. According to Kolyada (2014, 2023), a strategic algorithm involves a continuous cycle of three key steps: (1) establish the target market and find a market niche, (2) design and implement a business model and strategy to achieve the desired position (share) in the market, and, (3) change strategic goals from growth to retention, eliminating growth-oriented costs to maximize profit in the target market.

Villa Exclusivo B.V, a kitchen manufacturing company operating within a small niche market in Curaçao (Netherlands Antilles), is the setting for the case study. In 2023, this company had a market share of 32.38% in monetary terms, employed 150 people, and had over 17 years of experience in the industry. By focusing on a niche manufacturing company, this study offers insights into the applicability of structured business modeling in dynamic competitive environments.

2. Literature review

2.1 Business models and forecasting

In recent decades, business models have become a critical element of strategic management. For example, Van de Ven et al. (2023) pointed to the Business Model Canvas (BMC) as a broadly used framework for representing business models in research and practice, and for evaluating their performance. However, many studies have criticized the concept for its ambiguity and lack of clarity, given the absence of consensus regarding its definition and components (Fielt 2013). Several studies have attempted to resolve this issue. Notably, Shafer et al. (2005) categorized business model components into four domains: strategic selection, value network, value generation, and value retention. They emphasized the need for clarity in distinguishing business models from

strategy and proposed a synthesized definition that bridges theoretical and practical perspectives. This structured approach clarifies how business models operate and how they can be effectively utilized in corporate management.

Building on this work, Samavi et al. (2009) established a strategic modeling framework designed to clarify and analyze the goals, intentions, roles, and underlying rationale of strategic actions within a business context. Casadesus-Masanell and Ricart (2010) introduced a framework that facilitates the integration of strategies, business models, and tactics. In their formulation, a business model is directly derived from a business strategy; however, the two are distinct concepts and should not be equated. This recognition also enabled their framework to differentiate between tactics and strategies. Wirtz et al. (2010) emphasized that developing and adapting a business model is crucial for a firm's executives to respond effectively to technological advancements, competitive shifts, and regulatory changes. To tackle this managerial challenge, they proposed a comprehensive framework of Web 2.0 features and success elements, enabling managers to identify crucial tendencies relevant to their Internet business models. They asserted that a firm's environment fundamentally influences the business models capable of creating value within a specific market context.

Teece (2010) contended that a business model refers to the way a company produces, delivers, and retains value. He argued that a well-designed business model consolidates the assumptions of management regarding customer needs, and it is the most effective way to provide value while generating profits. Furthermore, he examined the connection between business models, strategy, and sustainable competitive advantage, emphasizing that while a business model is more general than a business strategy, integrating the two is essential to protect the competitive advantage created through the design of new business models.

Braun et al. (2019) reinforced this idea, stressing that achieving a delicate equilibrium between strategy and business model is crucial for securing an organization's sustained competitive advantage and rentability, while McGrath (2010) noted that business models provide strategists with a novel approach to navigating unpredictable and rapidly

changing environments. Finally, Zott and Amit (2013, 2015) extended this theoretical foundation by defining business models as systems of interdependent activities. Their work provides a robust conceptual base for understanding the interconnection between actors and resources in delivering value, making it highly relevant to contemporary research in strategic design.

Forecasting plays a pivotal role in enhancing the agility of business models, especially in dynamic market environments. Predictions made using modeling tools are crucial for companies to adapt flexibly to changing conditions. Sakas et al. (2014) pioneered the use of dynamic simulation models (DSMs), which are indispensable tools for IT companies to simulate operational scenarios before committing actual resources. These models help to establish strategies, ultimately leading to precise decision-making processes. The primary concepts underlying DSMs can be universally applied, enhancing strategy practices across various sectors and navigating rapid technological progress.

Groesser and Jovy (2015) applied this insight by advocating a systems-based simulation methodology that allows strategic experimentation under volatile conditions. They emphasized the importance of examining and understanding the structure of a business model, as well as the changes driven by strategic initiatives. Specifically, they argued that existing qualitative models lack robust guidelines, particularly in uncertain and volatile situations characterized by rapid technological change and agile competition. They recommended adopting a quantitative approach using a systemic simulation methodology, allowing decision-makers to gain valuable insights through experimental designs within a company's business model.

Pröllochs and Feuerriegel (2020) integrated forecasting with business analytics and topic modeling to effectively assess corporate scenarios. Their automated text-mining tool employs techniques such as SWOT analysis, examining company profiles to identify potential risks and opportunities, and positioning forecasting as a critical component of strategic modeling. This enables businesses to predict market fluctuations, safeguard themselves against risks, and assess their competitive positioning in relation to their competitors. Globocnik et al. (2020) further

explored the correlation between strategic planning and business model management. They introduced a structured management framework that aligns activities across various levels of an organization, including strategy, business models, and tactics, to streamline operations as a unified and effective unit. This systematic approach guarantees coherence and enables quick adaptation, allowing companies to tailor their models to market changes.

2.2 Kolyada's methodology

This section summarizes Kolyada's business modeling and strategic planning theory and methodology, which emphasizes the multi-level nature of business models and strategic planning, was initially developed in Russia at the Eurasian Management and Administration School (EMAS Business School). Several earlier publications detail its key provisions, particularly the idea that business models and strategy operate on at least three levels: product-market, corporate, and holding (Kolyada 2014, 2023). Business modeling and strategic planning are implemented at each of these levels. The business model is considered the foundation of strategy. The economic efficiency of the chosen business model compared to competitors' business models should determine the limits (maximum values) of the company's strategic goals. A company cannot achieve market results exceeding those predetermined by the effectiveness of its business model. Strategy represents the answer to the question "How" to implement the chosen business model and achieve strategic goals based on it. The same business model and the set of strategic goals based on it can have different strategies for their achievement (Kolyada 2014, 2023, 2024, 2025).

Kolyada's methodology, particularly its predictive economic-mathematical model component, comprises a set of interconnected tools and has undergone continuous validation since its creation. Following initial tests from 2010 to 2014, this sequence of business modeling and strategic planning was intensively tested between 2021 and 2024, when graduate students and faculty at EMAS implemented it in nearly 300 projects for Russian, CIS, and global firms (Kolyada, 2025). These applications confirmed the forecasting accuracy and reliability of the methodology, as the models were tested against real-world results and adjusted where necessary. Several

publications in Russian scientific journals demonstrate the reliability of the methodology (Abramchuk, Lyashenko, and Kolyada 2024a, 2024b; Abramchuk and Kolyada 2024).

The methodology ensured the initial validation and continuous fine-tuning of the predictive model in two stages: (1) initial tuning by reconciliation of reverse forecasts performed by the model with the actual results/data in historically completed periods, and (2) continuous comparison of the forecasts for the years in the planning horizon with the actual results/data obtained in these years. After the period of systematic validation and iterative refinement, the methodology provides that the forecasts aligned closely with actual outcomes.

Each analysis is to be implemented within a planning horizon that is divided into a set of corresponding years, and relies on a market scenario-based approach and "As-Is" and "To-Be" formats. The scenario approach distinguishes between three possible futures: (1) a main scenario representing the most probable trajectory of market and competitive changes, (2) an optimistic scenario assuming favorable external factors such as rapid growth or reduced risks, and (3) a pessimistic scenario incorporating adverse conditions such as decreasing demand or unfavorable external factors or heavy risks. These scenarios differ not only in their assumptions but also in their strategic implications. The main scenario provides a baseline for planning, the optimistic scenario highlights extra opportunities that could accelerate growth, and the pessimistic scenario identifies extra negative factors that may threaten performance. The idea behind Kolyada's methodology of testing business models under these alternative assumptions is not only to enhance forecasting accuracy but also to help organizations evaluate the robustness of their business models across different possible scenarios while anticipating volatile markets. This aligns with the scenario-planning tradition established in strategic management (notably Schoemaker 1995; Ringland 2006; Van der Heijden 2005), which emphasizes the disciplined anticipation of contrasting futures to reduce cognitive biases, strengthen decision-making, and better manage uncertainty. Kolyada's contribution, as discussed above, extends this tradition by embedding quantitative, competitor-focused forecasting into scenario analysis, providing

a structured mechanism for evaluating business model resilience in turbulent markets. Kolyada's book on the methodology (2023) was recognized as the best business book by a Russian author in 2024 (TEDO 2024), highlighting its growing impact in the field. Currently, active scientific research continues in Russia to further develop the theory and methodology.

Kolyada's methodology has undergone extensive application in Russia and the CIS, including validation across hundreds of business projects and the publication of award-winning work (TEDO 2024). However, any emerging framework carries strengths and boundaries of applicability. Therefore, a balanced appraisal requires acknowledging its potential limitations alongside its contributions.

First, the methodology's adoption has thus far been geographically concentrated, with most validations occurring in Russia and the CIS. Despite multiple testing outside Russia and CIS, its transferability to other institutional and cultural contexts remains underexplored, raising questions regarding its generalizability. Second, implementing this methodology is resource-intensive, requiring access to reliable datasets and advanced analytical expertise, conditions that many small and medium-sized enterprises may struggle to meet. As a final point, while its structured, quantitative nature is a strength, Kolyada's methodology is not a one-size-fits-all solution; its effectiveness depends on an organization's readiness to deal with complex analytical tasks.

At the same time, situating Kolyada's methodology within the broader international literature highlights its relevance beyond Russian and CIS contexts. In addition to its alignment with scenario planning approaches (Schoemaker 1995; Ringland 2006; Van der Heijden 2005), parallels can be drawn with scenario planning approaches developed by Schoemaker (1995). It emphasizes that strategic scenarios are relevant in any context in which decision-makers need to anticipate possible future developments under conditions of uncertainty.

Kolyada's methodology extends this observation by adding a quantitative, competitor-focused dimension to the scenario-based comparative forecasting present in his methodology (Kolyada 2014, 2023). This move also aligns with the dynamic capabilities framework by Teece et al. (1997) and Teece (2007),

which highlights a firm's capability to incorporate, develop, and reconfigure internal and external competencies in response to environmental changes.

In the context of the "Concept of Dynamic Capabilities," according to Kolyada's theory, business modeling is one of a company's high-level routines. This routine ensures the firm's dynamic capability to create innovative and cost-effective business models (Kolyada and Plekhova, 2025). Overall, by quantifying market niches and forecasting competitive moves, Kolyada's methodology offers a structured mechanism for operationalizing dynamic capabilities, particularly in turbulent markets.

The framework connects to the growing literature on predictive analytics in strategic management (Cote 2021; Adwani 2025), where predictive analytics are applied to anticipate market trends and forecast scenarios that help guide strategic decisions. Rooted in economic and mathematical modeling, yet forward-looking in its data-driven strategy design, Kolyada's approach can thus be positioned within the broader international movement toward anticipatory, analytics-based management.

For a detailed description of the step-by-step procedures, "As-Is/To-Be" formats, base year definitions, and validation processes underlying Kolyada's methodology, see Appendix A.

2.3 Comparative analysis of strategic and business modeling frameworks

To evaluate Kolyada's methodology in context, comparing it with other commonly used business modeling frameworks is helpful. Although Kolyada's methodology, like other frameworks, naturally has many limitations, its distinguishing features lie in scenario-based quantitative forecasting of the effectiveness of different business models and strategy variants for a company, compared to those of its competitors. This enables the company to evaluate the economic efficiency of potential business models and strategy options, and select the optimal solution based on the forecasted outcomes. A comparative analysis is provided in Table 1 to enhance understanding.

3. Methodology

The following section describes the application of a specific part of Kolyada's methodology to Villa

Exclusivo B.V, a kitchen manufacturer in Curaçao (Netherlands Antilles). The case study seeks to demonstrate the predictive and strategic utility of this methodology. However, the study only applies a reduced version of the market volume and complexity analysis (MVC-1) tool to market modeling (forecasting volume and market structure) and clustering. The approach targets cluster segmentation and develops positioning within the target cluster and segment. The full version of MVC-1, including the mathematical algorithm for forecasting market and market cluster dynamics, remained outside the scope of this study.

Accordingly, the study does not consider the method's broader set of forecasting tools, such the business modeling economic-mathematical predictive mechanism that ensures the selection of the most economically efficient business model for the company's operations in the chosen market niche, in particular Decision-Making Matrix Analysis (DMM), Z-equation, Market Risk Analysis (MARIS), Customer Satisfaction Index (CSI) calculations, and other predictive tools. Nevertheless, these tools were utilized in the project to obtain the results described in this article.

Strategic goal setting and target-based management, brand management, corporate culture management, budgeting, and other parts of the methodology also remained outside of the scope of the article.

The research employs a single-case study design (Yin, 2003), which is appropriate for addressing "how" questions and is also particularly valuable in research areas where existing theory is insufficient or underdeveloped (Eisenhardt 1989). Villa Exclusivo B.V was used as an illustrative case study to assess the applicability of Kolyada's methodology. As Yin (2003) and Baxter and Jack (2008) emphasize, case study research is especially suitable for investigating complex phenomena within real-world contexts. In this study, the context is a niche manufacturing firm in Curaçao (Netherlands Antilles), making the design particularly appropriate for addressing the central research question.

The case study was also selected to address a potential weakness in Kolyada's methodology: though it has been extensively validated in Russia and CIS, its applicability to international contexts remains underexplored. Villa Exclusivo B.V represents a theoretically

Table 1. Kolyada's theory and methodology vs. other common strategies and business modeling frameworks.

Framework (author, year)	Emphasis and advantages	Limitations
Balanced Scorecard (Robert Kaplan and David Norton, 1996)	<ul style="list-style-type: none"> • Emphasis: Strategic goal setting and planning. • Advantage: Clear logic of goal setting. 	Theoretical ambiguity in distinguishing between business model and strategy concepts; lack of in-depth analysis of current business model and strategy effectiveness; absence of thorough market modeling, analysis, and forecasting; no tools for forecasting quantitative effectiveness of developed business model elements and strategic initiatives; no comparative forecasting with competitors.
Business Model Canvas (Alexander Osterwalder and Yves Pigneur, 2010)	<ul style="list-style-type: none"> • Emphasis: Business model design with a focus on graphical representation. • Advantage: Visual clarity for the business modeling process. 	Similar to the Balanced Scorecard limitations, plus insufficient attention to strategic goal-setting, target-based management, and strategic planning frameworks.
SWOT Analysis and associated strategy development methods (Albert Humphrey, 1960s/2005; popularized in the 1980s)	<ul style="list-style-type: none"> • Emphasis: Planning. • Advantages: User-friendly and simple-to-implement system. 	Similar to the Business Model Canvas limitations. Takes a reactive approach to strategizing, focusing on responding to emerging opportunities and threats.
Kolyada's theory and methodology (2014, 2023, 2025)	<ul style="list-style-type: none"> • Emphasis: Economic-mathematical modeling with scenario-based forecasting. • Advantage: Enables quantitative competitor-focused forecasting and integrates business modeling, strategic goal-setting, target-based management, and strategic planning. 	Validation outside Russia and CIS remains limited. The methodology requires initial predictive model tuning using reliable historical data, as well as ongoing multi-year calibration. It is labor-intensive and requires professional skills for effective implementation.

significant example: a niche manufacturer operating in a dynamic, highly competitive local market, facing several key challenges that the methodology aims to address, namely establishing a market position and predicting future market trends. Likewise, the context of the kitchen manufacturing sector in Curaçao allows for a detailed exploration of how Kolyada's methodology can guide strategic forecasting and market positioning under environmental uncertainty within a specific industrial domain, utilizing a scenario-based approach.

This empirical study draws on a combination of primary and secondary data sources. As Saunders et al. (2009) emphasize, most studies rely on such data to adequately answer their research questions and ensure reliability through triangulation (Yin 2003; Creswell and Miller 2000).

Primary data were gathered to complement and validate Villa Exclusivo B.V.'s internal company records for 2023, thereby enhancing reliability through data triangulation (Creswell and Miller 2000). These records provided detailed quantitative information on revenue by product category, number of clients per cluster, sales volumes, pricing structures, and direct costs. In addition, semi-structured interviews were

conducted with Villa Exclusivo B.V.'s General Manager and Sales Director in 2022 and 2023, focusing on segments based on psychographic motives as well as operational capacities and constraints.

Secondary data sources were also collected from diverse sources, which were examined, summarized, and categorized to construct a robust picture of the kitchen manufacturing sector in Curaçao and Villa Exclusivo B.V.'s competitive positioning. These included: (1) industry reports from the Central Bureau of Statistics of Curaçao (Central Bureau of Statistics of Curaçao 2023,2024) (e.g., sector KPIs, market size estimates), (2) historical benchmarking of sales, market shares, and business positioning, and (3) competitor pricing and cost data covering 2023–2024. Secondary sources provide essential insights into the industry's structure and external dynamics that cannot be captured through primary data alone.

As in other case study research (e.g., Saunders et al. 2009), reliance on secondary data has both advantages and disadvantages. On the one hand, it may have fewer resource requirements, be less obtrusive, and offer better data performance. On the other hand, limitations include the possibility that it was collected for a purpose that does not align with

the study's needs, access may be difficult or costly, and there may be limited control over data quality. Ambrosini et al. (2010) argued that data reliability increases when researchers draw on replicable teaching sources and integrate them with additional evidence to achieve triangulation. To address these issues and safeguard the quality of the secondary data used, we triangulated secondary sources with internal company information and managerial interviews, thereby enhancing validity and reducing bias.

Clustering was performed to identify the natural structure of the market, using three characteristics: price range, product type, and purchasing method. The rationale for selecting these variables, and their significance for competition in Curaçao's kitchen market, is elaborated in Section 4 (Case Study). A similar approach is described in the case of applying the Theory and Methodology to the furniture market in Russia (Kolyada 2023).

To perform scenario-based forecasting, an approach similar to that of Schoemaker and Van der Heijden (1992) was employed, utilizing scenarios as tools for enhancing decision-making under conditions of uncertainty. For this study, we developed three scenarios: a main scenario, an optimistic scenario, and a pessimistic scenario. This choice reflects the standard practice in strategic planning: working with a limited number of scenarios that capture plausible developments of key risks (Fotr et al. 2014). These scenarios were constructed through a combination of expert interviews (to identify potential shocks, such as competitor entry), economic projections (to establish baseline assumptions for inflation and pricing), and historical trend analysis (to capture demand patterns and market behavior). The key variables considered across the scenarios included customer demand volume, average purchase per customer, operating costs, shifts in customer preferences, and the entry or exit of competitors.

The main scenario represents the most probable trajectory of market and competitive changes, assuming stable economic conditions, modest demand growth, and continued competition without significant disruptions. The optimistic scenario assumes favorable external factors such as accelerated demand growth and reduced risks, resulting in higher customer volumes and stronger profitability. Conversely, the pessimistic scenario anticipates ad-

verse conditions, including demand contraction, rising operating costs, and intensified competition, with customers delaying or reducing their purchases. Together, these scenarios provide a structured range of possible futures rather than a single deterministic forecast.

Significantly, these scenarios also shape strategic choices regarding cluster selection and positioning. Under an optimistic scenario, management could pursue more aggressive expansion into the high-price custom-made segment, leveraging increased demand and margins. Under the pessimistic scenario, however, the emphasis would likely shift to the medium-price segment, focusing on operational efficiency and resilience against cost pressures. The main scenario supports a balanced choice; sustaining presence in the core niche while preparing contingent actions should shift conditions. Thus, scenario-based forecasting provides a structured basis for evaluating which target cluster is most viable under different competitive and economic assumptions. This ensures that scenario-based forecasting not only provides alternative futures but also directly informs strategic cluster selection, which is central to evaluating the applicability of Kolyada's methodology in niche manufacturing.

While this article presents results based on the main scenario, the whole project incorporated all three to stress-test strategic options against varying market conditions. The forecasting component of Kolyada's methodology is grounded in a predictive economic-mathematical model that applies a sensitivity analysis and scenario simulation. Inputs include base-year data on sales, prices, direct costs, and customer purchases by cluster, combined with projections of future demand, competitor behavior, and external risks.

This combined dataset enhanced the credibility and reliability of the case study, providing a robust foundation for applying Kolyada's methodology with a one-year planning horizon. The timeframe was selected based on Curaçao's dynamic market conditions, availability of validated input data, and the need to produce actionable insights within a limited timeframe.

Before applying the model prospectively, initial tuning and validation were conducted by forecasting Villa Exclusivo B.V.'s 2024 sales volume and those of

Table 2. Methodological framework applied in the study.

Step/tool from Kolyada's methodology	Purpose/function	Data sources	Notes/limitations
Market modeling and clustering, scenario-based forecasting (MVC-1 tool)	<ul style="list-style-type: none"> To model the market and identify relevant clusters based on product type, pricing, and purchasing method. To assess volumes, profitability, and gross profit in individual clusters and the market as a whole in the base year. To perform scenario forecasting of the dynamics of volumes, sales profitability, and gross profit in individual clusters and in the market as a whole over the planning horizon (Main, Optimistic, Pessimistic scenarios). To choose target cluster(s) for the company. 	<p>Villa Exclusivo BV sales, pricing, and client data.</p> <p>CBS Curaçao reports industry data.</p> <p>Expert interviews, historical trends, macroeconomic projections, and 2023–2024 operational data.</p>	<p>Quantitative analysis and forecasting.</p> <p>The economic-mathematical forecasting model has undergone only two stages of validation: reconciliation of reverse forecasts with the actual results of the previous period (2022/2023) and reconciliation of the forecast for 2024 with the actual data obtained this year. According to the methodology, further validation is required to improve the accuracy of forecasts in future periods.</p> <p>Short-term reliability is high.</p>
Cluster segmentation	<ul style="list-style-type: none"> To divide the target cluster into segments based on consumer motives. To choose target segment(s) for the company. 	<p>Interviews with Villa Exclusivo BV management.</p> <p>Observed purchasing behavior.</p>	<p>Qualitative analysis.</p> <p>Not statistically tested, relies on expert judgment, and offers strategic insight for positioning.</p>
Positioning development	<ul style="list-style-type: none"> To develop the company's positioning in the target cluster and segment. To align the company's value proposition and unique selling proposition with the dominant consumer motive and positioning in the target cluster and segment. 	<p>Derived from previous segmentation and internal strategy discussions.</p>	<p>Strategic and qualitative analysis.</p> <p>Relies on accurate segmentation. Implementation depends on internal alignment and the capability of resources.</p>

its competitors using 2023 data as the base year. The projections were then compared to the actual outcomes, confirming the reliability of the model and highlighting the need for ongoing recalibration to maintain accuracy in longer planning horizons.

In practice, the methodology is effective in short-term forecasting but achieves higher accuracy when recalibrated continuously over multiple years as new market and competitor data become available. This helps ensure that forecasts remain both credible and adaptable, supporting the study's aim of evaluating its applicability to strategic planning in niche manufacturing (see Appendix B for technical details of the MVC-1 tool).

To clarify the methodological framework, Table 2 summarizes the tools applied at each step of the study, their respective purposes, data sources, type of analysis, and associated notes or limitations.

4. Case study: Villa Exclusivo B.V

The following subsections illustrate how Kolyada's methodology was applied to Villa Exclusivo B.V, a niche-oriented kitchen manufacturer in Curaçao. Each stage of the methodology is described in terms

of its analytical purpose, data inputs employed, and contribution to answering the central research question.

This research was conducted as part of the ongoing development of the scientific school in business modeling, strategic planning, and strategic management at the Eurasian Management and Administration School (EMAS Business School).

4.1 Market modeling and clustering, scenario-based forecasting (MVC-1 tool)

The first stage of the methodology involved market modeling and clustering using a simplified version of the MVC-1 tool. Clustering was conducted using three criteria: price range, product type, and purchasing method. These characteristics capture the primary drivers of competitive dynamics in Curaçao's kitchen market. Price was categorized into low (\$1,000–3,000), medium (\$3,000.01–5,000), and high (\$5,000.01–25,000) ranges.¹ These ranges were selected to reflect the purchasing power and market stratification typical of Curaçao's population, as also observed in the company's 2023 transactions. The low-price

¹ Note: all financial figures are presented in USD.

range corresponds to mass-market affordability, the medium range captures middle-income households seeking both value and quality, and the high-price range reflects the premium custom-made market.

Product type distinguishes between pre-assembled and custom-made products, reflecting differences in lead times, customization depth, and gross margin. This criterion is critical for Villa Exclusivo B.V, since the company's core competence lies in custom design, which demands greater craftsmanship but also offers higher margins. In contrast, the pre-assembled part represents standardized products that compete primarily on cost efficiency, presenting different strategic risks and opportunities.

Finally, purchasing methods were divided into direct sales and tender-based transactions, a distinction that separates retail/household demand from institutional and project-based procurement. This factor is particularly important in Curaçao's market, where B2B and B2C dynamics coexist and most B2B transactions are conducted through tenders. Tenders, such as contracts for hotels, government buildings, or large housing projects, can significantly influence demand volumes and revenue stability. By contrast, direct sales rely on household-level decisions and are more sensitive to shifts in consumer sentiment. These categories were chosen because they represent the most salient dimensions of competition in Curaçao's kitchen manufacturing market, thereby providing decision-useful forecasts by cluster that inform positioning and resource allocation.

Typically, the methodology requires considering B2C and B2B as separate markets, i.e., developing a distinct MVC-1 for each of them. However, in this particular case, an exception was made to combine both markets within a single MVC-1, i.e., treating them as different parts (clusters) of one market. The reason for this decision is the very small size of these markets in Curaçao, which makes it impractical to increase labor and financial costs for separate modeling and forecasting of B2C and B2B markets in this territory.

Applying the MVC-1 tool, twelve (12) possible clusters emerged from these combinations, of which six were viable (see Appendix C) and six were excluded as artificial because they did not exist in the actual market. In line with Schiffman and Wisenblit's (2019) criteria that effective segments must be identifiable,

profitable, accessible, and reachable, only these six clusters qualified as realistic strategic options. The viable clusters displayed distinct sales volumes, customer bases, profitability levels, and growth potential. The analysis established the market structure for 2023 (the base year) and projected cluster dynamics for 2024.

This study focused on identifying the key economic parameters of the clusters in the base year, such as volume in physical and monetary terms, sales profitability, gross profit, and customer numbers. It also conducted scenario forecasting for changes in these parameters in 2024 and identified the most profitable clusters, taking into account competitive density and resource availability for Villa Exclusivo B.V. This facilitates the analysis and projection of the target market and cluster data, cluster characteristics, pricing structures, and client bases. This stage not only revealed the structure of the market but also established an economic baseline for scenario-based forecasting, thereby linking market clustering and the resulting segmentation to the study's broader aim of testing how Kolyada's methodology can guide strategic positioning under uncertainty.

4.2 Selection of target cluster

After market modeling and clustering, the second stage of Kolyada's methodology involves the selection of a target cluster. A target cluster is defined as the cluster offering the most advantageous balance of profitability, competitive density, and growth potential. It must also remain attainable, given the firm's intellectual, financial, and technical resources. In this case, Villa Exclusivo B.V's assessment focused on identifying the cluster that combined high projected margin income with manageable competition intensity and reasonable growth opportunities. This logic reflects Kotler and Keller's (2016) view that target market selection must consider both external attractiveness and internal fit with company resources.

This stage is critical for addressing the research question, as it demonstrates how scenario-based forecasting and comparative analysis within Kolyada's methodology inform practical decisions regarding where to compete. For organizations such as Villa Exclusivo B.V, this guidance is particularly important in dynamic markets, where selecting the wrong cluster could result in wasted resources and strategic mis-

alignment. Following the identification of the target cluster, the analysis proceeded with psychographic segmentation of its clients to refine the company's strategic focus.

4.3 Segmentation of the target cluster

The third stage of applying Kolyada's methodology is the segmentation of the selected target cluster to refine Villa Exclusivo B.V's strategic focus. While segmentation may include socio-demographic characteristics (for B2C), physical, operational, situational, and other factors (for B2B), and psychographic characteristics (for both B2C and B2B), Kolyada (2023) argues that the first two criteria are the most common, but also the least effective way to segment a cluster. Instead, psychographic analysis, based on natural and consumer motives (what clients want) and psychological type (how clients decide), is used in this case study.

This choice is supported by Wedel and Kamakura (2000), who emphasize that motives- and values-based segmentation provide deeper insight into consumer behavior than demographics, since customers with similar profiles may differ significantly in their purchase motivations (Kotler and Keller 2016; Wedel and Kamakura 2000).

This distinction is particularly relevant in the Curaçao kitchen market, where customers with the same demographic profile may differ significantly in whether they value tangible incentives, such as extended warranties, or intangible ones, such as the prestige of owning a custom-designed kitchen (Kotler and Keller 2016). Therefore, segmenting based on motives provides a more accurate and actionable understanding of demand than demographic profiling alone.

Practically, this approach allowed Villa Exclusivo B.V to evaluate how different subgroups within the chosen cluster would respond under alternative market scenarios. For example, in an optimistic scenario, segments driven by consumer motives such as prestige might expand, encouraging greater investment in high-end custom kitchens. In the pessimistic scenario, the cost-saving motive dominates, where customers prioritize the opportunity to purchase a product at a lower price (while remaining within the price range that defines the cluster) or to obtain more for the same amount of money.

The integration of motives with scenario-based forecasting also shaped the selection of the target cluster: optimistic conditions made high-price custom-made clusters more attractive, whereas pessimistic conditions favored the medium-price cluster. The main scenario reinforced Villa Exclusivo B.V's current niche, while highlighting adjacent opportunities.

By connecting segmentation to motives and scenarios, this stage demonstrates how Kolyada's methodology translates forecasting into concrete strategic marketing and product design choices. This directly addresses the central research question by demonstrating how structured business modeling enables Villa Exclusivo B.V to select and adapt its niche effectively under conditions of environmental uncertainty.

4.4 Position development

The fourth stage of Kolyada's methodology involves translating segmentation insights into a clear market position. Positioning, as Kolyada (2023) emphasizes, goes beyond a simple slogan; it is a strategic assertion that this company or product is the best choice for customers in the target segment, based on their natural and dominant consumer motives (Kolyada 2023). Building on Schiffman and Wisenblit's (2019) idea that positioning is fundamentally about shaping a distinct image and identity in the minds of consumers, and Ries and Trout's (2001) insight that positioning is ultimately determined by perception rather than product features, the analysis focused on how Villa Exclusivo B.V could translate segmentation insights into market advantage.

Together, these perspectives underscore that effective positioning requires alignment with the target segment's intrinsic motivations while also differentiating the company from its competitors.

For Villa Exclusivo B.V, effective positioning requires aligning its value proposition with the dominant consumer motive identified in the target segment. By tailoring its message to emphasize both functional benefits (e.g., quality and durability) and symbolic value (e.g., prestige from custom design), the firm reinforced its credibility as the best-equipped provider to meet client needs and aspirations.

This stage addresses the research question because it demonstrates how Kolyada's methodology moves from forecasting and segmentation to an

actionable strategy. Positioning based on psychographic insights ensures that Villa Exclusivo B.V not only selects the right niche, but also creates and communicates its competitive advantage in a way that resonates with customer motives, thereby translating strategic forecasting into tangible market leadership.

5. Results

This section presents the results derived from the application of Kolyada's methodology to Villa Exclusivo B.V. The findings reflect the application of the main scenario defined during the forecasting phase, focusing on the high-end custom-made kitchen market in Curaçao. Each phase, market modeling and clustering, target cluster selection, segmentation, and positioning, generated quantitative outputs as well as strategic insights that directly informed Villa Exclusivo B.V's decision-making. By illustrating how forecasts inform strategic choices, the results also demonstrate the value of the methodology as a tool for guiding business modeling and strategies under uncertainty.

5.1 Market modeling and clustering

Clustering using the MVC-1 tool identified six viable clusters in Curaçao's kitchen market, defined by the price range, product type, and purchasing method. It illustrates data from Villa Exclusivo B.V and two competitors (as well as from a "minor player" group of smaller companies) operating within the selected product category of built-in kitchens. These clusters revealed the natural structure of competition, including price level, production type, sales channel, cluster volume, and projected growth. They highlighted the cluster with the highest concentration of profitability and growth potential. Table 3 presents the distribution of clusters based on the sales volume, customer base, and profitability. It also includes both the base year (2023) and the forecast year (2024) data.

The analysis indicates that the high-price, custom-made clusters represented a smaller share of the market, but generated high profitability. In contrast, the medium-price clusters were larger, but characterized by stronger competitive pressure. The low-price clusters were less attractive, with narrower margins and greater sensitivity to economic fluctuations.

This stage provides a baseline for subsequent forecasting. It clarifies how Villa Exclusivo B.V can evaluate opportunities across clusters, shows how

the methodology organizes competitive landscapes into decision-useful clusters for strategic forecasting, and translates raw data into actionable strategic insights, rather than static market categories.

5.2 Selection of target cluster

Applying Kolyada's methodology, the next step is to identify the target cluster that offers the best balance of profitability, competition intensity, and resource feasibility. Villa Exclusivo B.V identified Clusters 3, 4, and 5 as strategic targets. Although Clusters 3 and 4 demonstrated an acceptable profitability, the company already held a significant market share of both 52.6% and 66.7%, respectively. Therefore, the company chose to continue developing these markets incrementally, while prioritizing entry to Cluster 5, where it had no presence.

Cluster 5, distinguished by high prices, custom-made products, and direct purchases, emerges as a particularly attractive opportunity. It combines strong profit potential (expected profit of \$101,789 and projected profitability of 31.60%), forecasted market growth (from \$300,000 to \$322,088), and low competition density, with only one major competitor. These conditions signaled a strategic opening in a profitable niche where Villa Exclusivo B.V's capabilities could provide immediate differentiation. Table 4 summarizes the comparative indicators across clusters.

The results indicate that Cluster 5 was the most attractive for Villa Exclusivo B.V. It combines strong gross margins with manageable competition and high entry barriers, protecting against rapid imitation. Whereas the medium-price clusters showed a greater volume, they also presented fiercer competition and lower profitability. This choice was also supported by organizational fit: Villa Exclusivo B.V possessed the technical capabilities, infrastructure, and customization expertise required to compete effectively in this cluster.

Thus, the selection of this target cluster demonstrates how Kolyada's methodology operationalizes comparative forecasting into a rational and evidence-based choice of strategic niche, directly addressing the central research question.

5.3 Segmentation of the target cluster

Once the target cluster was identified, segmentation analysis was performed to refine Villa Exclusivo B.V's understanding of the customer groups. Psychographic

Target market: Product group: Built-in kitchens
Geographical region: Curaçao

Table 3. MVC-1: Market model, clusters, and their characteristics - Main scenario.

Company name	Total sales	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Company's market share, %
		Low price, pre-assembled, direct purchase	Low price, pre-assembled, tenders	Medium price, custom-made, direct purchase	Medium price, custom-made, tenders	High price, custom-made, direct purchase	High price, custom-made, tenders	
Competitor 1	\$525,000		\$250,000	\$225,000			\$50,000	20.00%
Competitor 2	\$325,000		\$100,000		\$175,000		\$50,000	12.38%
Group: Minor players	\$925,000	\$200,000	\$200,000			\$300,000	\$225,000	35.24%
Villa Exclusivo BV	\$850,000	\$75,000	\$75,000	\$250,000	\$350,000		\$100,000	32.38%
Cluster volume/market volume, \$		\$275,000	\$625,000	\$475,000	\$525,000	\$300,000	\$425,000	\$2,625,000
Sales profitability (rate of return), %		17.09%	14.58%	21.53%	22.14%	32.45%	31.72%	22.43%
Total profit volume, \$		\$47,007	\$91,116	\$102,284	\$116,238	\$97,345	\$134,795	\$588,785
Cluster share, %		10.5%	23.8%	18.1%	20.0%	11.4%	16.2%	
Change in cluster volume/market volume (in money), next year, %		109.87%	111.13%	160.27%	109.83%	107.36%	58.26%	
Expected cluster volume/market volume, next year, \$		\$302,148	\$694,588	\$761,276	\$576,601	\$322,088	\$247,609	\$2,904,310
Expected sales profitability (rate of return), %		16.48%	13.92%	20.51%	21.18%	31.60%	30.88%	20.76%
Expected total profit volume in the cluster/market next year, \$		\$49,797	\$96,683	\$156,137	\$122,143	\$101,789	\$76,465	\$603,014
Expected cluster share in the market volume, %		10.4%	23.9%	26.2%	19.9%	11.1%	8.5%	100.0%
Colors - the company's share in the cluster		0-5%	5%-10%	10%-15%	15%-20%	20%-25%	25%-40%	>40%

Table 4. Selected target cluster.

		Cluster 5	
Company name	Total sales	High prices, custom-made, direct purchase	Company's market share, %
Competitor 1	\$500,000		18.87%
Competitor 2	\$325,000		12.26%
Group: Minor players	\$1025,000	\$300,000	38.68%
Villa Exclusivo BV	\$800,000		30.19%
Cluster volume/market volume, \$		\$300,000	\$2,650,000
Sales profitability (rate of return), %		32.45%	22.84%
Total profit volume, \$		\$97,345	\$605,228
Cluster's share, %		11.4%	100.0%
Dynamics of the cluster volume/market volume (in money), next year, %		107.36%	
Expected cluster volume/market volume, next year, \$		\$322,088	\$2,902,936
Expected sales profitability (rate of return), %		31.60%	21.18%
Expected total profit volume in the cluster/market next year, \$		\$101,789	\$614,898
Expected cluster share in the market volume, %		11.1%	100.0%

motives, natural motives (functional, value-for-money concerns), and consumer motives (shortest delivery time, prestige, and personalization preferences) were used to distinguish segments.

Table 5 presents the segmentation of Cluster 5 under the main scenario. The cluster was divided into three segments based on dominant customer motives, as previously explained. All segments comprise small, medium, and large-sized enterprises, reflecting differing strategic needs and profit potential.

Segment 1. Dominant consumer motive – “Shortest delivery time (maximum speed)”:

Clients in this segment desire to receive the product as quickly as possible and value efficiency and prompt service.

Segment 2. Dominant consumer motive – “Prestigious status”:

Clients in this segment are driven by the aspiration to own products that signify their association with an exclusive or high-status group. They value items that fulfill practical needs while simultaneously acting as symbols of belonging to a prestigious community.

Segment 3. Dominant consumer motive – “Maximum customer focus (personalization)”:

Clients in this segment value personalization and attentiveness, expecting suppliers to thoroughly understand and prioritize their unique needs and preferences.

To demonstrate how the methodology accounts for competitive dynamics, an expert-based estimate assessed the degree of customer association with competitor brands in each segment. As shown in

Table 5, Segments 2 and 3 exhibited low competitor brand association levels of 15% and 10%, respectively. This indicates that these segments remain largely unoccupied by strong competitor perceptions, offering Villa Exclusivo B.V a strategic advantage by establishing a stable brand association as consumers’ preferred choice.

Based on these findings, Villa Exclusivo B.V selected segments 2 and 3 within cluster 5, as they align most closely with its operational capabilities. The company’s value proposition was modified in accordance with the dominant consumer motives of the selected segments. These results suggest that integrating psychographic segmentation with scenario forecasting provides a stronger foundation for strategic decision-making than demographic segmentation alone. They also illustrate how Kolyada’s methodology translates customer motives into actionable strategies, ensuring that cluster and segment choices are anchored in both forecasting accuracy and consumer psychology.

5.4 Development of positioning

The final stage translated the segmentation insights into a clear market position for Villa Exclusivo B.V. The positioning strategy was designed to align with the dominant consumer motives in segments 2 and 3, prestige and personalized services, ensuring that the company’s value proposition addressed the psychological and functional expectations of high-end clients seeking exclusivity, quality, and attentive interaction.

The following position statement guided this strategy: “Villa Exclusivo B.V delivers high-priced custom-

Table 5. Segmentation of the target cluster (main scenario) and selection of the target segment. Segmenting Cluster 5 (high prices, custom-made, direct purchase).

Segment #	Dominant consumer motive	Customer profile	Expected profit volume \$/next year	Company that formed a strong association with its brand in the base year, % of respondents in the segment
1	Shortest delivery time (maximum speed)	Small, medium, and large-sized enterprises	\$ 47,332	Competitor 1+2: 73%
2	Prestigious status	Small, medium, and large-sized enterprises	\$ 18,831	Competitor 1+2: 15%
3	Maximum customer focus (personalization)	Small, medium, and large-sized enterprises	\$ 35,626	Competitor 1+2: 10%
Cluster total			\$ 101,789	

Target segments

made kitchens, combining the highest quality and prestige with exceptional personalized customer service.”

The results show that aligning positioning with dominant consumer motives strengthens Villa Exclusivo B.V.'s credibility as the leading provider of high-end custom-made kitchens in Curaçao. This stage demonstrates how the methodology ensures that strategic positioning is systematic, grounded in forecasting, segmentation, and validation, rather than arbitrary.

5.5 Validation of forecast accuracy using 2024 data

The reliability of the model was validated by comparing its 2024 forecasts with actual performance data for Cluster 5. As shown in Table 6, the deviation between the projected and real figures is minimal; for instance, the sales volume deviates by only +0.65%. These results confirmed that the model was tuned correctly during the initial calibration phase and was capable of producing accurate short-term forecasts. This reinforces its value in strategic planning within dynamic market environments such as the kitchen manufacturing sector in Curaçao. Additionally, sensitivity analysis was embedded into the scenario modeling process, enabling the model to assess how changes in variables, such as customer demand, costs, and competitor behavior, impact key outputs. This enhances the robustness and adaptability of the model in forecasting future conditions.

The results of this validation confirm the effectiveness of the forecasting model in identifying viable strategic opportunities. Cluster 5, characterized by high pricing, custom-made solutions, and direct purchasing, proved to be a key opportunity for Villa Exclusivo B.V. These forecasts guided the selection of target segments and the development of a positioning strategy aligned with customer motives.

Kolyada's methodology provided a structured and reliable framework for market modeling, clustering, segmentation, and positioning. Ultimately, it supports the development of a business model that is both strategically aligned and market-responsive.

6. Strategic discussion

This study applied a key component of Kolyada's methodology to identify an optimal market niche for Villa Exclusivo B.V. The findings suggest that the company is well-positioned to capture two high-value segments in Cluster 5: customers who prefer high prices, custom-made products, and direct purchases, by aligning its capabilities with consumer motives such as prestigious status and maximum customer focus (personalization). The projected growth in this cluster indicates a rising demand for bespoke, high-end products and requires that Villa Exclusivo B.V. be well-positioned to meet this demand through its commitment to quality craftsmanship and personalized offerings.

Beyond this case, however, Kolyada's methodology offers unique advantages for strategic decision-making. Unlike better-known tools such as the Business Model Canvas (Osterwalder and Pigneur 2010), SWOT analysis, and Balanced Scorecard (Kaplan and Norton 1996), which primarily provide qualitative assessments, Kolyada's methodology enables quantitative forecasting of core business metrics such as revenue, market share, cluster share, sales profitability, and gross profit. This data-driven approach supports more precise and risk-informed business modeling and strategic planning. A key differentiator of the methodology is its built-in sensitivity analysis, which allows decision-makers to simulate and assess alternative business models and strategy options under different market scenarios. Additionally, the model can simulate competitor behavior and quantify the effects of strategic rivalry, an uncommon but es-

Table 6. Comparison between base year (2023), forecast year (2024), and actual year (2024) for Cluster 5.

Metric	Base (2023)	Forecast (2024)	Actual (2024)	Deviation (%)
Sales volume (Cluster 5, ANG)	\$300,000	\$322,088	\$320,000	+0.65%
Sales profitability (rate of return), %	32.45%	31.60%	30.00%	+1.6%
Total profit volume, \$	\$97,345	\$101,789	\$103,250	-1.42%
Cluster's share, %	11.4%	11.1%	11.6%	-0.5%

essential feature for companies operating in dynamic, segmented markets. From a cost-benefit perspective, while the methodology requires moderate investment in data collection and initial model calibration, the ability to make analytically supported strategic choices offers a high return, especially for companies seeking to optimize positioning and profitability in volatile sectors.

It is essential to note that this study was based solely on a part of Kolyada's methodology, which focused on determining the market position as one element of the organization's business model. Other parts of the methodology are likewise helpful but lie outside the scope of this study. These include digital business modeling, quantitative forecasting of productivity, assessing the economic efficiency of a business model, strategic goal setting, target-based management, brand management, corporate culture management, budgeting, and other related tools and methods.

7. Conclusion

This study introduces Kolyada's business modeling and strategic planning theory and methodology and demonstrates how it can be utilized to forecast market trends and support business modeling and strategic planning in a niche manufacturing context. By applying a selected part of the methodology focused on identifying and validating a target market niche, the case study of Villa Exclusivo B.V demonstrates the methodology's predictive potency and strategic usefulness. The analysis successfully identified and validated a profitable, low-competition niche (Cluster 5) for the firm in Curaçao's kitchen manufacturing industry. By combining scenario-based forecasting with consumer-motive segmentation, this study provided actionable guidance for positioning and strategic focus. The findings indicate that even partial application of Kolyada's methodology yields quantifiable forecasts of revenue, profitability, and market share, while supporting managers in aligning operations with consumer expectations in high-value segments. Projection validations through historical tuning confirmed the predictive strength and practical relevance of the methodology.

The results of this case study highlight that Kolyada's methodology brings distinctive value by

enabling quantitative forecasting of a potential business model (e.g., revenue, market share, and share in the target cluster). This differentiates it from qualitative business modeling methods that rely on relative assessments. Moreover, by integrating sensitivity analysis, the methodology creates a digital business model (predictive economic-mathematical model) for the firm, allowing managers to test multiple strategic alternatives under different scenarios. This structured experimentation helps to identify the most effective options based on expended resources and the economic results obtained. This is very important for practical management, as company managers prefer to make decisions based on analytically sound models and tests performed with their help, rather than based on abstract and relative assessments.

Additionally, the methodology evaluates the economic efficiency of both the organization's business model and those of its competitors. It further illustrates the economic consequences of competitive rivalry arising from different business model variants. This supports more informed management decisions in business modeling and strategic planning by considering not only incurred costs and outcomes but also the dynamics of competitive rivalry. This is important, as most modern markets are characterized by a very high level of competition. From a policy perspective, the methodology can be applied by governments, development agencies, or industries, enabling them to guide the strategies of small, medium, and large businesses and identify economically viable clusters and niches for sustainable growth and innovation.

7.1 Theoretical implications

The main contribution of this research lies in expanding the concept of business modeling and strategic planning. It demonstrates how new theory and economic-mathematical methodology of business modeling and strategic planning (Kolyada 2014, 2023, 2025) can be applied in the context of niche manufacturing. The study contributes to the literature on business modeling and strategy development by demonstrating how quantitative scenario modeling and forecasting can be integrated with psychographic segmentation to identify market niches and develop effective company positioning—an aspect often overlooked in existing methodologies such

as the Business Model Canvas (Osterwalder and Pigneur 2010).

Specifically, three theoretical insights have emerged. First, by applying Kolyada's methodology outside the Russian and CIS markets, this study provides evidence of its transferability. It discusses how forecasting-based business modeling and strategic planning tools can be used in other markets. Second, it addresses a longstanding concern in the forecasting literature. As Makridakis et al. (2009) emphasize, precise forecasting in economics and business is rarely achievable because most activities are exposed to unpredictable events that generate significant uncertainty. Thus, scenario-based approaches are particularly valuable. Kolyada's methodology complements traditional forecasting by simulating multiple plausible outcomes rather than relying on a single-point estimate.

Third, the findings illustrate how the theory and methodology support the Concept of Dynamic Capabilities (Teece et al. 1997; Teece 2007) by considering business modeling as a high-level routine and a structured mechanism for tracking changes, leveraging opportunities, and making strategic decisions regarding company development in the market under unstable conditions.

7.2 Managerial implications

This study has several interesting implications for business practitioners. First, forecasting-based business modeling and strategic planning tools require time, calibration, and historical data to generate value. However, firms that adopt them early are better positioned to adapt to disruptive change. Second, market niche search should be approached as a two-step process: first, model and forecast the market to select a target cluster, and then segment that cluster to identify the most viable target segment. Third, developing the company's positioning, value proposition, and unique selling proposition (USP) in accordance with the natural and consumer motives of the target segment ensures optimal alignment. This alignment connects the company, its product, and its service with the expectations of target customers. This ensures that firms choose the most economically advantageous market position, one that is aligned with available resources and responsive to client motives, thereby winning in the competitive struggle.

Ultimately, forecasting models provide not only quantitative predictions but also a disciplined framework for strategic dialogue, reducing reliance on intuition and improving decision quality under uncertainty.

7.3 Limitations and further research directions

As noted throughout this paper, this study has several limitations. First, the results described in the article are based on a single case study in Curaçao. Second, due to the limited scope of the article, only a reduced version of the MVC-1 tool and the approach to segmentation based on consumer motives were applied. These represent just a portion of Kolyada's entire set of tools and approaches—specifically, the toolkit dedicated to determining the market position within a company's business model.

The full version of MVC-1, including the mathematical algorithm for forecasting market and market cluster dynamics, as well as other business modeling and strategic planning tools that are integral parts of the methodology, remained outside the scope of this article. Also, the economic-mathematical predictive model that ensures the selection of the most economically efficient business model variant for the company's operations in the chosen market niche. However, these tools were utilized in the project to obtain the results described in this article.

Third, the economic-mathematical forecasting model underwent only two stages of validation: reverse forecasting for 2022/2023 and forward forecasting for 2024. Although these exercises confirmed short-term reliability, further longitudinal testing is necessary to strengthen predictive accuracy across longer horizons and different environments. The methodology requires initial model tuning using reliable historical data and ongoing multi-year calibration, which may limit the immediate applicability for small firms that lack robust datasets or analytical resources.

Therefore, future research should explore simplified or hybrid approaches that adapt Kolyada's methodology for resource-constrained SMEs. Fourth, Kolyada's methodology is labor-intensive and requires professional skills for its effective implementation. Fifth, empirical validation outside Russia and CIS remains limited. A broader application in an international context would help establish the gen-

eralizability of Kolyada's methodology and reveal potential cultural or institutional constraints.

By acknowledging these limitations, this study adheres to best practices in case study research, where transparency about scope and constraints is crucial for credibility (Ross and Zaidi 2019). At the same time, each limitation points to opportunities for future scholarship to refine, test, and extend Kolyada's methodology across diverse organizational and cultural settings, including comparative, multi-sector case studies and longitudinal analyses.

8. References

- Abramchuk, A. N., Lyashenko, I.Yu, Kolyada, A. A. (2024a). Market modeling for the development of an effective business model of a company (based on the example of the market for limestone tiles in St. Petersburg). *Economic Sciences* 233, pp. 22–31. DOI: 10.14451/1.233.22. – EDN IXMZZI.
- Abramchuk, A. N., Lyashenko, I.Yu, Kolyada, A. A. (2024b). Market niche as an element of a superior business model within the framework of strategic management (using the example of the limestone tile market). *Economic Sciences* 234, pp. 583–592. DOI 10.14451/1.234.583. – EDN YDUVXI.
- Abramchuk, A. N., Kolyada, A. A. (2024). Setting up a corporate culture according to the business model, goals and strategy of the organization on the example of the stonemasonry industry. *Journal of Economics, Entrepreneurship and Law* 14(5), pp. 2365–2382. <https://doi.org/10.18334/epp.14.5.120777>
- Adwani, A. (2025). Predictive analytics for business strategy: Leveraging machine learning for competitive advantage. *International Journal of Social Impact* 10(3), 295–307. DOI: 10.25215/2455/1003033
- Ambrosini, V., Bowman, C., Collier, N. (2010). Using teaching case studies for management research. *Strategic Organization* 8(3), 206–229. <https://doi.org/10.1177/1476127010374254>
- Baden-Fuller, C., Haefliger, S. (2013). Business models and technological innovation. *Long range planning* 46(6), 419–426. <https://doi.org/10.1016/j.lrp.2013.08.023>
- Baxter, P., Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report* 13(4), 544–559. <https://doi.org/10.46743/2160-3715/2008.1573>
- Braun, M., Latham, S., Cannatelli, B. (2019). Strategy and business models: why winning companies need both. *Journal of Business Strategy* 40(5), 39–45. <https://doi.org/10.1108/jbs-01-2019-0005>
- Casadesus-Masanell, R., Ricart, J. E. (2010). From strategy to business models and onto tactics. *Long Range Planning* 43(2–3), 195–215. <https://doi.org/10.1016/j.lrp.2010.01.004>
- Central Bureau of Statistics Curaçao. (2023, 2024). General Indicators of Curaçao. Retrieved from <https://www.cbs.cw/>
- Chambers, J. C., Mullick, S. K., Smith, D. D. (1971). How to choose the right forecasting technique. *Harvard Business Review*. <https://hbr.org/1971/07/how-to-choose-the-right-forecasting-technique>
- Cote, C. (2021). What is Predictive Analytics? 5 Examples. Harvard Business School. <https://online.hbs.edu/blog/post/predictive-analytics>
- Creswell, J. W., Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory Into Practice* 39(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2
- Dalgic, T., Leeuw, M. (1994). Niche marketing revisited: Concept, applications and some European cases. *European Journal of Marketing* 28(4), 39–55. <https://doi.org/10.1108/03090569410061178>
- Eisenhardt, K. (1989). Building theories from case study research. *Academy of Management Review* 14, 532–550.
- Fielt, E (2013). Conceptualising Business Models: Definitions, Frameworks, and Classifications. *Journal of Business Model* 1 (1) pp. 85–105. <https://doi.org/10.5278/ojs.jbm.v1i1.706>
- Fotr, J., Špaček, M., Souček, I., Vacík, E. (2014). Scenarios and their application in strategic planning. *E+M Ekonomie a Management* 17(3), 118–135. <https://doi.org/10.15240/tul/001/2014-3-010>
- Gambardella, A., McGahan, A. M. (2010). Business-Model Innovation: General-purpose technologies and their implications for industry structure. *Long Range Planning* 43(2–3), 262–271. <https://doi.org/10.1016/j.lrp.2009.07.009>
- George, G., Bock, A. J. (2011). The Business model in practice and its implications for entrepreneurship research. *Entrepreneurship Theory and Practice* 35(1), 83–111. <https://doi.org/10.1111/j.1540-6520.2010.00424.x>
- Globocnik, D., Faillant, R., Parastuty, Z. (2020). Bridging strategic planning and business model management—A formal control framework to manage business model portfolios and dynamics. *European Management Journal* 38(2), 231–243. <https://doi.org/10.1016/j.emj.2019.08.005>
- Groesser, S. N., Jovy, N. (2015). Business model analysis using computational modeling: a strategy tool for exploration and decision-making. *Journal of Management Control* 27(1), 61–88. <https://doi.org/10.1007/s00187-015-0222-1>
- Humphrey, A.S. (2005), “History corner – SWOT analysis for management consulting.” In the *SRI Alumni Newsletter*. SRI International, CA, 7–8, available at: <https://alumni.sri.com/newsletters/2005/AlumNews-Dec-2005.pdf>
- Kaplan, R.S. and Norton, D.P. (1996). Strategic Learning: The Balanced Scorecard. *Strategy & Leadership* 24, 18–24. <https://doi.org/10.1108/eb054566>
- Kolyada, A.A. (2014) Jеffektivnye instrumenty strategicheskogo analiza. Kak prinjat' vernoe reshenie o strategii razvitiya predpriyatija [Effective tools for strategic analysis. How to make the right decision on the enterprise development strategy]. Nizhniy Novgorod, Izdatel'stvo Biznes-shkoly EMAS. 174 p. (In Russian).
- Kolyada, A.A. (2023) Sledujushij uroven': Strategicheskij menedzhment novoj jepohi [Next level: strategic management of a New Era]. Moscow, Alpina PRO. 616 p. (In Russian).

- Kolyada, A.A. (2024). Theory of the multi-level nature (multi-levelness) of a business model, business modeling, and Business Model Innovation in strategic management. *The Eurasian Scientific Journal* 16(4). <https://doi.org/10.15862/60ecvn424>. Available at: <https://esj.today/PDF/60ECVN424.pdf> (In Russian, abstract in English).
- Kolyada, A.A. (2025). Some theses of the theory of multi-level nature (multi-levelness) of business model. Part 1. Herald of Omsk University. Series "Economics," 2025, Vol. 23, No. 3, pp. 54-68. (In Russian, abstract in English). [https://doi.org/10.24147/1812-3988.2025.23\(3\).54-68](https://doi.org/10.24147/1812-3988.2025.23(3).54-68)
- Kolyada A.A., Plekhova, Yu.O. (2025). Verkhneurovnevye rutiny v strategicheskome menedzhmente: integratsiya kontseptsii dinamicheskikh sposobnostei i biznes-modelirovaniya [High-Level Routines in Strategic Management: Integration of Dynamic Capabilities and Business Modeling]. *Ekonomicheskoe razvitie Rossii = Economic Development of Russia*, 2025, vol. 32, No. 4, pp. 50-57. EDN MKWFWF. (In Russian).
- Kotler, P., Keller, K. L. (2016). *Marketing Management*. 15 editions. Pearson Education.
- Lindberg, E., Zackrisson, U. (1991). Deciding about the uncertain: The use of forecasts as an aid to decision-making. *Scandinavian Journal of Management* 7(4), 271-283. [https://doi.org/10.1016/0956-5221\(91\)90003-j](https://doi.org/10.1016/0956-5221(91)90003-j)
- Magretta, J. (2002). Why business models matter. *Harvard Business Review* 80(5), 86-92. <https://hbr.org/2002/05/why-business-models-matter>
- Makridakis, S., Hogarth, R. M., Gaba, A. (2009). Forecasting and uncertainty in the economic and Business World. *International Journal of Forecasting* 25(4), 794-812. <https://doi.org/10.1016/j.ijforecast.2009.05.012>
- Massa, L., Tucci, C.L., Afuah, A. (2017). A critical assessment of business model research. *Academy of Management Annals* 1(1), 73-104. <https://doi.org/10.5465/annals.2014.0072>
- McGrath, R. G. (2010). Business models: A discovery driven approach. *Long Range Planning* 43(2-3), 247-261. <https://doi.org/10.1016/j.lrp.2009.07.005>
- Mintzberg, H. (1994). The rise and fall of strategic planning. Harvard Business Review Press. <https://hbr.org/1994/01/the-fall-and-rise-of-strategic-planning>
- Morris, M., Schindehutte, M., Allen, J. (2005). The entrepreneur's business model: toward a unified perspective. *Journal of Business Research* 58(6), 726-735. <https://doi.org/10.1016/j.jbusres.2003.11.001>
- Nielsen, C., Aagaard, A. (2021). The fifth stage of Business model research: The role of Business Models in Times of Uncertainty. *Journal of Business Models* 9(1), 77-90. <https://doi.org/10.5278/jbm.v9i1.4246>
- Osterwalder, A., Pigneur, Y. (2010). *Business Model Generation: A Handbook of Visionaries, Game Changers, and Challengers*. John Wiley & Sons.
- Pröllochs, N., Feuerriegel, S. (2020). Business analytics for strategic management: Identifying and assessing corporate challenges via topic modeling. *Information and Management* 57(1), 103070. <https://doi.org/10.1016/j.im.2018.05.003>
- Ries, A., and Trout, J. (2001). *Positioning: The Battle for Your Mind – The 20th Anniversary Edition*, McGraw-Hill, New York, NY.
- Ringland, G. (2006). *Scenario Planning: Managing for the Future*. Wiley.
- Ross, P. T., Zaidi, N. L. (2019). Limited by our limitations. *Perspectives on Medical Education* 8(4), 261-264. <https://doi.org/10.1007/s40037-019-00530-x>
- Sakas, D., Vlachos, D., Nasiopoulos, D. (2014). Modeling strategic management for the development of competitive advantage based on technology. *Journal of Systems and Information Technology* 16(3), 187-209. <https://doi.org/10.1108/jsit-01-2014-0005>
- Samavi, R., Yu, E., Topaloglu, T. (2009). Strategic reasoning about business models: a conceptual modeling approach. *Information Systems and e-Business Management*, 171-198. <https://doi.org/10.1007/s10257-008-0079-z>
- Saunders, M., Lewis, P., Thornhill, A. (2009). *Research Methods for Business Students*. Pearson Education.
- Schiffman, L. G., Wisenblit, J. (2019). *Consumer Behavior*. Pearson.
- Schoemaker, P. J. H. (1995). Scenario planning: A tool for strategic thinking. *Sloan Management Review* 36(2), 25-40.
- Schoemaker, P. J. H., Van der Heijden, C. A. J. M. (1992). Integrating scenarios into strategic planning at Royal Dutch/Shell. *Long Range Planning* 26(1), 155. [https://doi.org/10.1016/0024-6301\(93\)90324-9](https://doi.org/10.1016/0024-6301(93)90324-9)
- Shafer, S. M., Smith, H. J., Linder, J. C. (2005). The power of business models. *Business Horizons* 48(3), 199-207. <https://doi.org/10.1016/j.bushor.2004.10.014>
- Slávik, Š., Zagoršek, B. (2016). Relationship between business strategy and business model studied in a sample of service companies. *Journal of Competitiveness* 8(4), 72-84. <https://doi.org/10.7441/joc.2016.04.05>
- TEDO. (2024). DKG Award 2024 winners [Лауреаты премии DKG 2024] [Webpage in Russian]. <https://tedo.ru/dkg-award-2024>
- Teece D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal* 28(13), 1319-1350. <https://doi.org/10.1002/smj.640>
- Teece, D. J. (2010). Business models, business strategy, and innovation. *Long Range Planning* 43(2-3), pp.172-194. <https://doi.org/10.1016/j.lrp.2009.07.003>
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning* 51(1), 40-49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- Teece, D. J., Pisano, G., Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal* 18(7), 509-533. [http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](http://dx.doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)
- Theodorou, E., Spiliotis, E., Assimakopoulos, V. (2025). Forecast accuracy and inventory performance: Insights on their relationship from the M5 competition data. *European Journal of Operational Research* 322(2), 414-426. <https://doi.org/10.1016/j.ejor.2024.12.033>
- Van de Ven, M., Lara Machado, P., Athanasopoulou, A., Aysolmaz, B., Turetken, O. (2023). Key performance indicators for business models: A systematic review and catalog. *Information Systems and E-Business Management* 21(3), 753-794. <https://doi.org/10.1007/s10257-023-00650-2>
- Van der Heijden, K. (2005). *Scenarios: The Art of Strategic Conversation* (2nd ed.). Wiley.

- Wedel, M., Kamakura, W. A. (2000). *Market segmentation: Conceptual and methodological foundations*. 2nd edition. Springer.
- Wirtz, B., Schilke, O., Ulrich, S. (2010). Strategic development of business models: Implications of the Web 2.0 for creating value on the Internet. *Long Range Planning* 43(2–3), 272–290. <https://doi.org/10.1016/j.lrp.2010.01.005>
- Yin, R. (2003). *Case Study Research: Design and Methods (3rd ed.)* Thousand Oaks, CA: Sage.
- Zott, C., Amit, R. (2013). The business model: A theoretically anchored robust construct for strategic analysis. *Strategic Organization* 11(4), 403–411. <https://doi.org/10.1177/1476127013510466>
- Zott, C., Amit, R. (2015). *Business Models. International Encyclopedia of the Social & Behavioral Sciences*, 2nd edition, pp 33–36. <https://doi.org/10.1016/B978-0-08-097086-8.73040-6>
- Zott, C., Amit, R., Massa, L. (2010). The business model: Theoretical roots, recent developments, and future research. *IESE Research Papers D/862*, IESE Business School. <https://www.iese.edu/media/research/pdfs/DI-0862-E.pdf>

Appendixes

Appendix A: Procedural Details of Kolyada's Methodology

To preserve analytical clarity in the main text, a brief description of the procedural elements of Kolyada's methodology is presented here.

Step-by-Step Sequence in the methodology

1. Scenario-based market modeling and forecasting, including market cluster (niche) selection.
2. Scenario-based comparative quantitative forecasting of the proposed business model/strategy's economic efficiency, as well as competitors' business models and strategies. This step uses the "As-Is" forecasting format to track projected sales volume in physical terms, revenue, profit, profitability, market shares, and other economic indicators.
3. Scenario-based comparative quantitative forecasting of a firm's potential business model/strategy variants' economic efficiency (and competitors' efficiency). This step uses the "To-Be" forecasting format to select the optimal business model and strategy, based on the projected indicators and required resources.
4. Strategic goal-setting and target-based management are both derived from the selected business model.
5. Brand management.
6. Planning and management of corporate culture in the context of the selected business model and strategic goals.

7. Strategy development (strategic actions to build a target business model and achieve strategic goals based on it).
8. Budgeting.

Economic-mathematical predictive model in the methodology

The set of projects included an economic-mathematical predictive model of the company's business model and strategic plan, with an emphasis on the following:

- MVC-1 tool: Development of a market model, including clustering of the target market, determination of key economic characteristics of clusters and the market as a whole (structure, volumes, sales profitability, and other indicators) in the base year, and forecasting the dynamics of these indicators within the planning horizon.
- MVC-1 and MARIS tools: Forecasting external factors (macro and micro-environments) and risks (internal and external sources) within the planning horizon.
- Business Process Matrices: Forecasting of internal business process efficiency.
- DMM tool and Z-equation: Creation of a digital business model of the organization and projection of key economic indicators: sales volume in physical terms, revenue, market shares, target cluster share, sales profitability, etc.

As-Is and To-Be Formats

- "As-Is": The "As-Is" format assumes that during the forecast period, the business model and strategic

decisions (characteristics) of the organization and competitors would be identical to those in the base year.

- **“To-Be”:** Assumes that during the forecast period, the organization selects the optimal business model and strategic decisions to outperform its competitors, taking into account their anticipated actions (selection of business model and strategy).

Base Year and Planning Horizon

- The base year is defined as the last completed calendar year when the project is initiated.
- The planning horizon is the current unfinished year and the following three years or more. Predictive models are developed annually, incorporating a scenario-based analysis. The “As-Is” and “To-Be” formats consider the main, optimistic, and pessimistic scenarios.

Follow-Up Projects and Validation

Follow-up projects are implemented annually, on average, starting from one year after the original projects. Each follow-up project extends a project in an earlier period, conducted for the same organization and competitors, within the same market and target cluster. They focus on validating the forecasts made for the first year in the planning (forecasting) horizon based on the model and fine-tuning the model by comparing the projected indicators with the actual results obtained that year. Alongside the primary tasks of the initial projects, these projects also include necessary corrections in the strategic goal-setting, brand management, defining a target corporate culture profile, developing strategic initiatives, and establishing budgeting processes.

This approach ensures both the initial validation and continuous fine-tuning of the economic and mathematical predictive model. Developers either confirm the alignment of forecasts for the previous year of the planning horizon with the actual results (under the realized market scenario) or make adjustments if the forecast did not materialize. Adjustments include:

- Changing input factor values when actual values differed from projections.
- Revising cause-and-effect relationships between inputs and forecasts.

- Implementing a combination of both methods.

Appendix B. Technical Details of Predictive Economic-Mathematical Model for the Curaçao Kitchen Manufacturing Market

The forecasting component of Kolyada's methodology applies sensitivity analysis and scenario simulation through an economic-mathematical predictive model that links input variables to projected business outcomes.

In the Villa Exclusivo B.V's project, the base year was taken as the last completed calendar year at the time the project was carried out. In contrast, the planning horizon was the current unfinished calendar year in which the project was being executed. Initially, the predictive model was configured through “forecasting” past periods for which the developers had the necessary data.

Main Inputs and Initial calculations (Base Year, 2023):

- Market modeling and clustering characteristics.
- Monetary sales volume for Villa Exclusivo B.V and competitors.
- Pricing and direct costs (Villa Exclusivo B.V and competitors).
- Average customer purchase size by cluster.
- Unit sales volume for Villa Exclusivo B.V and competitors (calculated).
- Customer numbers by cluster and companies in cluster (calculated).
- Sales profitability by cluster (calculated);
- Companies market and cluster shares (calculated);
- Other market and cluster characteristics (calculated).

Projected Inputs, scenario mode (2024 Horizon, Main, Optimistic, and Pessimistic scenarios):

- Pricing and direct costs.
- Average customer purchase size by cluster.
- Customer numbers by cluster.
- Other market and cluster characteristics.
- External market factors and risks.
- Comparative efficiency in business processes.

Appendix Table 1. Clustering results for the Curaçao kitchen manufacturing market

Cluster	Price range (USD)	Product type	Purchasing method	Market characteristics	Strategic relevance
1	1,000–3,000	Pre-assembled	Direct sales	Mass-market, cost-driven, sensitive to consumer sentiment	Low margins, high volume
2	1,000–3,000	Pre-assembled	Tender-based	Bulk contracts for low-cost units (e.g., social housing)	Stable demand, price competition
3	3,000.01–5,000	Pre-assembled	Direct sales	Middle-income households seeking quality & value	Balanced growth potential
4	3,000.01–5,000	Custom-made	Direct sales	Middle/upper-middle customers wanting affordable customization	Attractive margins, moderate demand
5	5,000.01–25,000	Custom-made	Direct sales	High-income clients valuing exclusivity & craftsmanship	Premium niche, high margins
6	5,000.01–25,000	Custom-made	Tender-based	Luxury projects (hotels, offices, upscale housing)	High-value, B2B-driven demand

Outputs, scenario mode (2024 Horizon, Main, Optimistic, and Pessimistic scenarios):

- Forecasted sales volumes (monetary and physical terms) for Villa Exclusivo B.V and competitors.
- Expected customer numbers for Villa Exclusivo B.V and competitors.
- Companies market and cluster shares for Villa Exclusivo B.V and competitors.
- Sales profitability by cluster for Villa Exclusivo B.V and competitors.
- Gross Profit for Villa Exclusivo B.V and competitors.

Validation Process:

The predictive model was first tuned using 2023 data points as the base year. Forecasts were generated for 2024 and compared with the actual outcomes. Discrepancies prompted adjustments to input val-

ues and, where necessary, revisions to the causal relationships within the model.

This iterative process of validation and recalibration is integral to maintaining forecasting accuracy. Each cycle of back-testing not only strengthens predictive reliability but also improves managerial decision-making by refining assumptions about demand, competitor behavior, and risk exposure.

Appendix C. Clustering Results for the Curaçao Kitchen Manufacturing Market

Twelve clusters were initially modeled by combining three price ranges (low, medium, and high), two product types (pre-assembled and custom-made kitchen furniture), and two purchasing methods (direct sales and tender-based). Of these, six clusters were considered viable (Appendix Table 1). The remaining six represented fictitious combinations that were not observed in the Curaçao market and were excluded.