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SCENARIOS FOR THE FUTURE OF THE GERMAN CONFECTIONERY MARKET BY 2030 - STRATEGIC IMPLICATIONS FOR FERRERO DEUTSCHLAND GMBH

SCENARIO 1: SWEET SYMPHONY - NARRATIVE AND STRATEGY

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Abstract

This work project explores the future of the German confectionery market employing the *'Intuitive Logics School'* of scenario planning. The report focuses on extensive expert and client involvement, particularly collaborating with Ferrero Deutschland GmbH. The primary objective is to navigate high uncertainty, understand plausible events' impacts on industry, retail, and consumers, and dynamically respond to an unknown future. The development of four plausible scenarios centered on the key uncertainties *'Stability of Supply Chain'* and *'Health Regulations'*, contributes to fostering a heightened awareness.

The reader is introduced to one of four potential futures for the German confectionery market. This particular future is distinguished by a stable supply chain and health regulations that align with present norms. Scenario-specific strategic implications and a comprehensive strategic action plan tailored for Ferrero Deutschland GmbH are provided.

Keywords: Confectionery; Scenario Planning; Strategic Foresight; Management; Strategy

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Glossary

AI: Artificial Intelligence

AR: Augmented Reality

CAGR: Compound Annual Growth Rate

CEO: Chief Executive Officer

CIA: Cross Impact Analysis

EU: European Union

HFSS: High in Fat, Salt and Sugar

M&A: Mergers and Acquisition

PMT: Probabilistic Modified Trends

TIA: Trend Impact Analysis

US: United States

VAT: Value-Added Tax

1. Introduction

"*If you want to view paradise, simply look around and view it.*", a line said by Willy Wonka while standing in his chocolate factory, demonstrating his legacy to the kids with golden tickets (Stuart 1971). No CEO of a chocolate company is likely to say that about the environment in today's world. A stagnant confectionery market, rising health trends, sustainability concerns, and new regulations paint a less-than-sugar-sweet picture with several potential threats to follow in the future. The environment is changing, but there are also potential opportunities that might help to recreate the paradise that Willy Wonka envisions.

This work project is dedicated to a comprehensive exploration of challenges that may manifest in diverse future scenarios, ultimately aiming to devise a strategy that not only navigates threats but strategically capitalizes on emerging opportunities. Through a collaborative partnership with Ferrero Deutschland GmbH, the following succinctly central challenge was articulated: "*How can Ferrero Deutschland GmbH maintain its profitability and customer loyalty in the face of increasing regulatory and social pressures on foods high in sugar, salt, or fat?*"

The '*Intuitive Logics School's'* scenario planning approach is used to navigate high uncertainty and understand the impact of plausible events on industry, retail, and consumers. The goal is to respond dynamically to an unknown future and foster a heightened awareness of these futures within Ferrero Germany GmbH's management. According to van der Heijden (1997), a '*scenario thinker'* is someone who can overcome analysis paralysis in the face of uncertainty. Rather than becoming trapped in endless attempts to predict the future, this strategic thinker knows when to pivot. They shift their focus to essential questions such as "*What do we do if...?*" and then consider "*What does this mean for what we do now?*" (van der Heijden 1997). This adaptive approach acknowledges the limitations of predicting the future and emphasizes dynamic and proactive thinking, a key aspect of scenario planning.

Through this lens, the objective is to equip Ferrero Deutschland GmbH's leadership with the foresight and agility needed to navigate the complexities of an evolving industry landscape.

1.1 Market Overview

The German confectionery market constitutes a substantial segment within the European Union (EU) and the global confectionery sphere. In 2021, the German market recorded total revenues of €10,217.3 million underlined by its share of 15.9% in the EU confectionery market and 6.2% in the global confectionery market (Fortune Business Insights 2021). Over the observed period from 2017 to 2022, the German market exhibited slow growth, registering a CAGR of 1.1%, reaching a consumption volume of 1,145.1 million kilograms in 2022 (MarketLine 2022).

Projections suggest an intensified growth trajectory, with a projected CAGR of 3.1% anticipated for the period spanning 2021 to 2026. This projection positions the market to attain a value of €11,914.0 million by the end of 2026, representing the most robust growth among EU confectionery markets (MarketLine 2022).

Within the German confectionery market, key segments comprise chocolate, sugar confectionery, and gum. As of 2021, chocolate stands as the predominant segment, commanding a share of 66.1%, showcasing a noteworthy increase from 2016. The sugar confectionery segment has maintained a steady share of 28.4% since 2016, reflecting its resilience in the market. In contrast, the gum segment constitutes 5.4% of the market share, experiencing a decline from its 2016 standing. Notably, the CAGR of the chocolate segment contributed to overall market growth (MarketLine 2022).

The structural landscape of the German confectionery market is characterized by a diverse array of players, with key market shares delineated as of 2021: Leading the industry, Ferrero S.p.A. holds a share of 12.6%, closely followed by Mars, Incorporated at 11.4%. Mondelez International, Inc. holds a position with a market share of 10.2%, and Chocoladefabriken Lindt & Sprüngli AG contributes with a share of 7.6%. The remaining 58.2% is dispersed among approximately 200 other members affiliated with the Bundesverband der Deutschen

Süßwarenindustrie e.V. (BDSI), signifying the diverse and decentralized nature of the industry (MarketLine 2022).

Sales channels play a relevant role in the market, with supermarkets constituting the predominant share at 50.7%. Convenience stores contribute significantly with a share of 26.6%, while other channels collectively represent 22.7%. Notably, the reliance on large German retailers such as EDEKA, Lidl and Kaufland (Schwarz Group), REWE Group, and Aldi South and North, underscores the market's dependence on a few major retail players (MarketLine 2022).

1.2 Introduction of Ferrero

Ferrero S.p.A., the parent company of the project partner Ferrero Deutschland GmbH, stands as an illustrious Italian multinational renowned for its commitment to producing high-quality confectionery products. Founded in 1946, in Alba, Italy, by Pietro Ferrero, the company has since become a global powerhouse in the confectionery industry. Employing over 46,000 individuals as of today, Ferrero S.p.A. operates in more than 50 countries and has successfully expanded its market presence to encompass over 170 countries (Ferrero International 2023a).

In the fiscal year ending on August 31, 2022, Ferrero S.p.A. reported a consolidated turnover of more than €14 billion with a net profit of €751 million for the same period. The company's growth trajectory is evident in its consistent upward trend, as demonstrated by a significant 10.4% increase in turnover for the fiscal year 2021-2022 compared to the previous year (Ferrero International 2023a).

Ferrero S.p.A. exhibits a comprehensive and globally diversified product portfolio, encompassing over 35 distinct brands. Within the German market, Ferrero Deutschland GmbH maintains a significant presence with prominent brands including Nutella, Kinder, Ferrero Rocher, and Tic-Tac (Ferrero 2023).

2. Literature Review

2.1 Scenario Planning: Conceptualization and Categorization

Scenario planning is a strategic planning method that uses narratives, namely scenarios, to illustrate potential futures and explore the implications for organizations. It is not about predicting the future, but about developing a deep understanding of the key drivers of change and preparing for a range of plausible futures (Wack 1985; Lindgren and Bandhold 2003).

Scenario planning was first developed in the 1960s by visionaries such as Herman Kahn and his colleagues at the RAND Corporation. It was initially used for military strategy and later adapted for other fields (Bradfield et al. 2005; Amer, Daim, and Jetter 2013). Businesses began using scenario planning in the 1970s, with Royal Dutch Shell Group being one of the pioneers in this field, utilizing it to forecast the impending oil crisis (Wack 1985).

Since then, scenario planning has been used by various organizations, including governments, non-profit organizations, and international agencies. It is helpful to explore a wide range of issues, such as climate change or technological change but also to explore different levels of uncertainty (Amer, Daim, and Jetter 2013; Bradfield et al. 2005). In the public domain, scenario methodologies are instrumental in delineating planning activities and policy alternatives, and within the corporate arena, they have firmly established themselves as indispensable tools for formulating business strategies (Amer, Daim, and Jetter 2013).

Scenario planning is a valuable tool for organizations of all sizes and in all sectors. It can help organizations to improve strategic thinking, reduce uncertainty, increase flexibility, and develop more robust strategies (Bradfield et al. 2005; Schoemaker 1995). While it can be a complex process, it is a valuable investment for any organization that wants to be prepared for the future.

2.2 Scenario Planning: Approaches

Scenario planning has evolved into a diverse landscape of methodologies, each offering a unique perspective on navigating uncertainty and envisioning the future. Yet, the absence of a universally accepted method requires planners to carefully select the approach that aligns most closely with their specific objectives and organizational context (Amer, Daim, and Jetter 2013). In this diverse landscape, three dominant approaches have emerged as focal points of exploration: '*Intuitive Logics School'*, the French approach of *'La Prospective'*, and '*Probabilistic Modified Trends*' ('*PMT*') School (Bradfield et al. 2005).

Of these, the *'Intuitive Logics School'*, sometimes referred to as the *'Shell Approach'*, is the most widely used in nd many other nations and has received substantial attention in the scenario planning literature (Bradfield et al. 2005). It involves identifying and understanding key drivers of change, creating diverse scenarios, and discerning strategic implications for each scenario. Moreover, the approach is flexible, adaptable, and relatively low-cost, making it a valuable tool for organizations of all sizes and sectors (Amer, Daim, and Jetter 2013). The *'Intuitive Logics School'* assumes that business decisions are based on a complex set of relationships among political, economic, social, technological, environmental, and legal (PESTLE) factors. Therefore, it is important to understand these factors clearly to provide insights and improve the decision-making process. The *'Intuitive Logic School's'* approach differs from other scenario planning approaches in that it does not rely on mathematical algorithms (Pillkahn 2008). Instead, it relies on the knowledge, commitment, credibility, and communication skills of the scenario team members.

The *'Intuitive Logics School'* encompasses a series of steps, commencing with *'Framing and Scoping'* to identify the focal issue, the strategic focus of the project, and the applicable time horizon. Next, in the '*Explore*' stage, the key drivers of change impacting the focal issue are explored, employing research and expert brainstorming. This analysis helps top management plan the future direction of the company. In the '*Synthesize*' stage, the drivers are then combined, taking into account their level of uncertainty and impact, resulting in a scenario matrix. This matrix guides the creation of four distinct scenarios, each named, described, and complemented by a narrative. The following step, named '*Act'*, is about identifying strategic implications for the organization within each scenario, laying the groundwork for an overall strategic action plan (Schwartz 1991; van der Heijden 2010). During the follow-up '*Monitoring'* phase, early indicators are identified, based on the strategic implications, which may indicate that certain impacts are becoming more significant.

In contrast to the qualitative approach of the *'Intuitive Logics School'*, the '*Probabilistic Modified Trends'* ('*PMT'*) school and the French school of scenario planning *('La Prospective'*) incorporate quantitative and mathematical methods to develop scenarios.

The '*PMT*' school uses two matrix-based methodologies: Trend Impact Analysis (TIA) and Cross Impact Analysis (CIA). TIA probabilistically modifies extrapolated trends, while CIA captures the interrelationship between key influencing factors. Both approaches aim to enhance scenario analysis by considering the effects of unforeseen future events and the interaction of key factors (Bradfield et al. 2005).

'La Prospective' emphasizes the development of normative scenarios, which are aspirational visions of the future that can guide policymakers and stakeholders in making decisions. The French school of scenario planning is often used in public sector planning in France, which results in scenario work that is typically narrowly focused. This approach is based on four key concepts: the base (an in-depth analysis and scanning of the present situation), the external context (a study of the general environment of the system), the progression (a historical simulation derived from the dynamic base and constraints of the external context), and the images (a snapshot of what reality might look like at a given point in time) (Godet and Durance 2011).

The *'PMT'* school and *'La Prospective'* provide organizations with valuable instruments for crafting resilient and forward-looking strategies. By exploring a variety of potential future scenarios, these methods assist organizations in recognizing and addressing risks, leveraging opportunities, and attaining their overarching objectives (Bradfield et al. 2005).

2.3 Scenario Planning: A Strategic Tool

Scenario planning serves as a crucial strategic tool for organizations, offering a multifaceted approach to enhance their adaptability and decision-making. By connecting scenarios to strategy, organizations can effectively navigate changing environments and develop resilient strategies (Schwartz 1991; Tiberius 2019). Lindgren and Bandhold (2003) outline four key purposes of scenario planning: strategy development, innovation, learning, and evaluation.

First and foremost, scenario planning acts as a catalyst for strategy development, enabling organizations to explore multiple potential futures and rehearse strategic options (Schwartz 1991). This process is essential for enhancing an organization's readiness to face uncertainties and discontinuities in its external environment. It promotes a flexible and open-minded approach to strategic thinking, allowing organizations to adapt and respond effectively to emerging challenges (Schoemaker 1995).

In the realm of innovation, scenario planning serves as a wellspring of inspiration, driving the generation of new ideas and concepts (Lindgren and Bandhold 2003). It encourages organizations to explore uncharted territory and consider unconventional solutions, fostering a creative climate that embraces complexity and paradoxes (Chermack, Lynham, and Ruona 2001).

Moreover, scenario planning plays a vital role in organizational learning, challenging existing mental models and promoting analytical capabilities (Lindgren and Bandhold 2003). Through scenario analysis, participants gain a better understanding of the causal processes and relationships that underlie environmental change. This thought-experiment-like learning enhances strategic thinking abilities, enabling organizations to make more informed decisions (Schoemaker 1995).

In addition, scenario planning offers a structured approach to evaluate an organization's current strategy. It helps identify elements that may be at risk in the future and supports necessary modifications, resulting in a more resilient and robust overall business strategy (Wilson 2000).

This emphasizes that the adoption of scenario planning as a strategic tool brings significant benefits. It expands organizational thinking, improves perception, and challenges existing assumptions and mindsets of managers (van der Heijden 2002). Additionally, scenario planning enhances understanding of causal processes and logical sequences, ultimately aiding strategy development and decision-making (Wright, Bradfield, and Cairns 2013).

Consequently, scenario planning goes beyond mere speculation about the future; it empowers organizations to proactively shape their strategies, foster innovation, promote learning, and evaluate their current approaches. Its ability to navigate uncertainty and complexity makes it an indispensable asset in the strategic toolkit of organizations.

3. Methodology

The methodology chapter outlines the scientific framework and procedures used in the formulation of this report. It elaborates on the key stages of the strategic foresight and scenario planning methodology, providing a comprehensive description of the processes and other scientific frameworks and tools employed. The chapter concludes with a summary of the client engagement in this collaborative project.

3.1 Research Design and Implemented Tools

Building upon the foundations laid in the prior section (referenced in Chapter 2.2), this work project adopts the qualitative methodology of scenario planning, aligning with the principles of the *'Intuitive Logics School'*. This approach enables a comprehensive analysis of the most influential factors shaping the industry, allowing the company to stay abreast of evolving trends and prepare for various plausible future scenarios. In addition, it is particularly advantageous for investigating sectors like the confectionery industry, where uncertainty is a significant factor. The confectionery market faces numerous unpredictable factors that could have a significant impact on its future, including new product innovations, changes in consumer tastes, and governmental actions. Therefore, strategists must consider a spectrum of potential occurrences, which could profoundly influence the market dynamics. This justifies why the research team, in collaboration with Ferrero Deutschland GmbH, has chosen this approach to address the focal issue of the future market scenario (as outlined in Chapter 4.1).

Furthermore, the participatory nature of this approach permits the incorporation of valuable insights from the company, aligning the research with their perspective (Antonio Martelli 2014). Engaging with stakeholders and experts through interviews or workshops at different stages of the process ensures that the research is finely tuned to the specific needs of the confectionery industry.

The research design for this scenario planning project with Ferrero Deutschland GmbH is structured into five main components, that correspond to the various stages of the *'Intuitive Logics School'* approach.

'Framing and Scoping': The initial phase involved a collaborative discussion with Ferrero Deutschland GmbH to delve into their most pressing *challenges*. This crucial dialogue led to the identification of one key challenge, setting the stage for the subsequent phases of the work project.

Based on the identified challenge, the *focal issue and time horizon* were set, employing widespread desk research. The focal issue serves as the compass for the scenario thinking and building process and is supported by several guiding questions. After, both were validated by Volkmar Schwenk (Managing Director of Ferrero Deutschland GmbH), with a decision to set a 7-year time horizon, balancing the rapid pace of market trend shifts with the typical duration for regulatory changes to take effect.

'Explore': In this stage, the team utilized both primary and secondary data sources, including major confectionery manufacturers' news articles and relevant journal articles to identify the drivers of change. Each member conducted independent research based on the PESTLE framework, and the findings were then aligned during a working session. The PESTLE framework focuses on political, economic, social, technological, legal, and environmental factors, as summarized in the acronym PESTLE (Burt et al. 2006). It was integrated into this phase because it facilitates the thorough examination of the macro-environmental variables and their changes (Fisher, Wisneski, and Bakker 2019). The framework's extensive coverage of key market variables and structured category differentiation reinforced this choice, ensuring a thorough analysis of the German confectionery market. The principle of analyzing the macro-environment using a structured approach was also applied to the analysis of the uncertainties affecting the confectionery market. This phase was completed by discussing and validating the final set of drivers of change with various interview partners (Appendix 4).

'*Synthesize*': In the scenario development phase, the research team employed a deductive, top-down approach, selecting the relevant drivers of change to construct the framework of possible futures for Ferrero Deutschland GmbH. The uncertainties were categorized based on their impact on the focal issue and level of uncertainty. The categorization was done by gathering expert opinions, conducting a survey with Ferrero Deutschland GmbH, and doing secondary research. Upon analysis of the survey results, a diagram was devised, delineating uncertainties based on their average ratings. Following, an area of interest was defined, accomplished by applying threshold values for impact and uncertainty derived from the survey distribution. Subsequently, the identified uncertainties were tested for interdependencies. This analytical process aimed to identify potential groupings based on shared characteristics and causal relationships and to ensure sufficient independence between clusters. Two key uncertainty groupings with the highest impact/uncertainty rating were selected. These represented the key uncertainties and served as axes on a matrix, framing the polarities of what could potentially unfold within the time horizon set. By crossing these axes, the four distinct quadrants can be explored, each representing a unique scenario narrative with its own set of key ideas and contrasting stories. This matrix is known as a scenario matrix and was cross-validated with multiple interviewees to ensure its robustness and relevance. Subsequently, the research team crafted a foundational structure for each scenario, considering contextual factors such as political, legislative, environmental, socioeconomic, and supply chain impacts.

In preparation for a workshop with Ferrero Deutschland GmbH, a Miro board was designed to visually present the scenario matrix and the narratives of the four scenarios (Appendix 5). This interactive workshop allowed for a deep dive into the contextual factors of each scenario. Ferrero Deutschland GmbH's participation was pivotal in challenging and expanding the predefined scenarios, especially regarding transactional factors that influence industry dynamics, retail operations, and consumer behavior. Additionally, scenarios were validated to ensure that they provide an appropriate basis for decision-making using the five criteria suggested by Fahey and Randall (1998):

- *Plausibility*: Each scenario must be within the scope of possibility,
- *Consistency*: The logic underlying each scenario should be free of inherent contradictions or inconsistencies,
- *Utility/relevance*: Each scenario should provide unique and relevant perspectives that aid in decision-making,
- *Challenge/novelty*: The scenarios should provoke thought and challenge existing beliefs about the future,
- *Differentiation*: Each scenario should be fundamentally unique, avoiding mere variations on a single concept.

The collaborative nature of this session ensured that the scenarios not only depicted diverse futures but were also grounded in practical insights, reflecting the real-world complexities of the confectionery market.

In addition, to add a quantitative component, a financial simulation analysis was performed for each scenario. The purpose of this simulation was to predict the possible effects of the four distinct scenarios on the financial output of the German confectionery industry within the specific time frame considered. To achieve this goal, attention was focused on three key factors that characterize the overall market: market size in terms of revenue, market volume, and price developments. In particular, the financial impact of the negative extremes of the key uncertainties on these three factors was quantified to understand how they will shape the confectionery market in each scenario.

'Act': During the '*Act'* phase the team employed the scenarios to clarify and answer the challenge identified at the beginning of the work project. Another workshop was organized for this purpose, the aim of which was to explore the strategic implications of each scenario for Ferrero Deutschland GmbH in more detail (Appendix 5). Firstly, Ferrero Deutschland GmbH's current strengths and weaknesses were defined. After, the analysis was deepened using a TOWS matrix. Originating from the principles laid down by Weihrich in 1982, the TOWS matrix is a strategic planning tool that methodically evaluates the threats (T) and opportunities (O) arising from the external environment in conjunction with an organization's internal weaknesses (W) and strengths (S). Subsequently, four distinct combinations of strategies are developed by combining the variables of the internal and exterior world. The formulation of a TOWS matrix should include a forward-looking perspective that takes into account potential future changes in the external environment, as advocated by Weihrich (1982). Consequently, this framework is used in this study as it harmonizes prospective external factors, in this work, represented by the envisioned scenarios for the confectionery market in 2030, with a critical assessment of the company's internal capabilities. This integrative approach makes it possible to strategically align Ferrero Deutschland GmbH's internal competencies with external opportunities and threats that derive from each scenario. Thereby it facilitates the exploitation of emerging opportunities and the minimization of potential risks through the strategic reinforcement of existing strengths and the improvement of prevailing weaknesses.

The outcomes of this workshop were essential in deriving strategic implications for each scenario, leading to the formulation of an overall strategic action plan for Ferrero Deutschland GmbH.

'Monitor'**:** In the *'Monitor'* phase, the research team used the Scenario Cockpit tool to establish a collection of early indicators that can help predict how each scenario will unfold. The Scenario Cockpit, developed by Wulf, Meissner, and Stubner, provides a framework for monitoring indicators and assessing which scenario the indicators are trending toward (Wulf, Meissner, and Stubner 2010). This three-step approach provides a structured and dynamic mechanism for tracking developments in line with the four scenarios developed. This tool serves as a critical component in the ongoing refinement and adaptation of strategic plans. To begin key indicators for each scenario are identified (1) and ranges for these indicators are established (2). By benchmarking against actual values, the Scenario Cockpit allows assessing which scenario best reflects real-world developments. Constant monitoring of leading indicators (3) ensures an agile and informed response to emerging changes, enhancing the overall effectiveness of scenario planning in navigating an uncertain future. Therefore, thresholds indicating the evolution for each of the scenarios have been defined for all indicators for 2025, 2027, and 2029. Confectionery companies can respond to new developments, refine plans, and remain agile in the face of changing market dynamics by regularly tracking these indicators.

This methodical and collaborative approach not only accommodates Ferrero Deutschland GmbH's insights but also ensures that the research process is aligned with their perception, ultimately aiming to develop sound and distinctive scenarios.

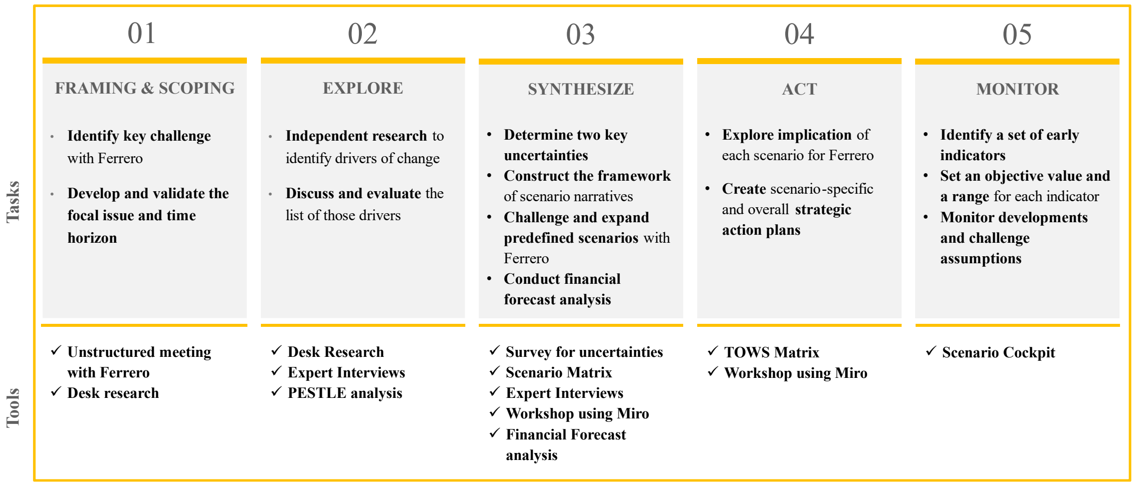

Figure 1: Scenario Planning Process | Source: Own Creation based on van der Heijden (2002), Schwartz (1991)

3.2 Strategic Collaboration: Client and Expert Involvement

Client and expert involvement constituted a crucial facet in each phase of the scenario planning work project, infusing the process with a systematic and strategic orientation tailored to Ferrero Deutschland GmbH's future challenges. The research team worked closely with a core team from Ferrero Deutschland GmbH but also involved external experts for specific areas.

Commencing with the *'Framing and Scoping'* stage, an unstructured meeting with Ferrero Deutschland GmbH's managing director, Volkmar Schwenk, aimed to discern Ferrero Deutschland GmbH's challenges. This involved a working meeting where several broad questions were posed to understand the potential obstacles faced by the business in the future. Subsequent deep dives with clarifying questions facilitated the collaborative setup and formulation of the challenge. Validation of the focal issue and time horizon was achieved through a subsequent semi-unstructured meeting with Volkmar Schwenk, where the derived insights were presented, and adjustments were made based on constructive feedback.

In the *'Explore'* and *'Synthesize'* stages, a survey of uncertainties was conducted (Appendix 3), engaging Ferrero Deutschland GmbH's top management to rank 11 identified uncertainties for impact and uncertainty. An informal exchange with Adnana Osmanbašić, a Deloitte Consultant from Norway (Appendix 4), experienced in formulating strategies for major confectionery manufacturers, provided insights into current trends in progressive markets, particularly focusing on Norway and Europe. The discussion encompassed industry trends, brainstorming plausible future developments, and delineating the impact of scenarios on the market.

The first workshop with Ferrero Deutschland GmbH's top management served to validate the scenario matrix and enhance understanding of the transactional impact of each scenario (Appendix 5). Unstructured questions were directed toward uncertainties with significant impact and uncertainty. Additionally, the survey results were presented and the transactional impacts on industry, retail, and consumers were discussed. Moreover, two semi-structured interviews with external experts, namely Deloitte Consultant Thomas Effinger and Managing Director of Mars GmbH, Carsten Simon, contributed fundamentally to scenario matrix validation and understanding of the transactional impact of each scenario (Appendix 4). Discourse encompassed current market and consumer trends in the confectionery industry, validation of the scenario matrix, and exploration of plausible future developments across different scenarios.

In the '*Act*' stage, a second workshop with Ferrero Deutschland GmbH's top management sought to identify Ferrero Deutschland GmbH's current strengths and weaknesses, along with opportunities and threats for each scenario (Appendix 5). An unstructured assessment of Ferrero Deutschland GmbH's current standing illuminated the organization's status quo by evaluating its strengths and weaknesses.

Throughout the work project, the orchestrated involvement of Ferrero Deutschland GmbH's top management and external experts adhered to a methodical approach. This ensured a systematic grounding of the scenarios and strategic considerations in the intrinsic challenges and objectives of the company, all while integrating diverse perspectives and expert insights to fortify the robustness and applicability of the developed scenarios and strategies.

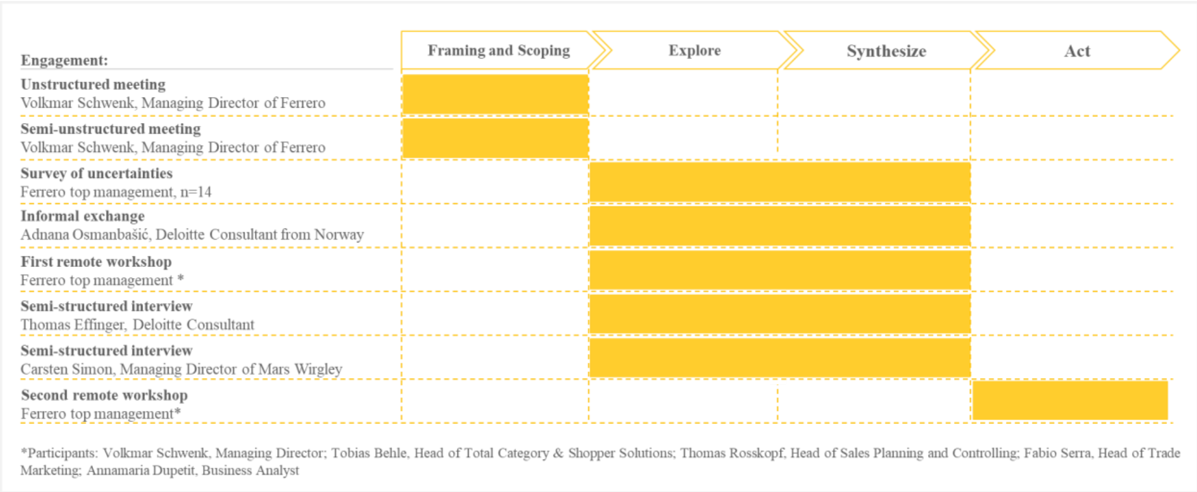

Figure 2: Client and Expert Involvement per Phase of the Scenario Planning Process | Source: Own Creation

4. Phase I: Framing & Scoping

At the beginning of the scenario process, the strategic focus of the work project and the time horizon are defined. This is the starting point for the subsequent process, which will aim to answer the focal issue defined at this stage.

4.1 Focal Issue

A focal issue plays a central role in guiding a foresight project, representing the primary research question essential for supporting the formulation of strategy, innovation, or organizational development. Serving as both the destination and the roadmap, focal issues direct the trajectory of the project (Bowers, 2022). The initial phase of a scenario planning endeavor involves pinpointing a central question focused on the external environment, laying the foundation for the subsequent four phases (Schwartz, 1996). The formulation of the focal issue aimed to align the project with Ferrero Deutschland GmbH's challenges, considering the evolving landscape of opportunities and obstacles within the confectionery industry in recent years.

Foods high in fat, sugar, and/or salt significantly impact public health and are significant contributors to non-communicable diseases such as ischemic heart disease, stroke, cancer, and type 2 diabetes (Nneli, Revoredo-Giha, and Dogbe 2023). Healthy diets can prevent the premature deaths of 11 million adults worldwide each year, while at the same time reducing the healthcare costs associated with diet-related disorders (European Commission 2023; Lancet 2019). Nutrition taxes have been explored and tested in various contexts as part of other government's attempts to combat obesity worldwide. The World Health Organization encourages governments to use fiscal policy to promote better habits and to implement measures to limit the advertising of products high in fat, sugar, and/or salt to children, in line with the United Nations Sustainable Development Goals for 2030, to improve health and nutrition (WHO 2023b; Froidmont-Görtz et al. 2020). To this end, the German government is proposing to implement a restriction on advertising to children under the age of 14 by 2027, so its adoption is expected to have a yet unknown influence on national confectionery operations (Committee 2023). In addition to these regulatory changes, the sector faces several other uncertainties that are driving significant change in the German confectionery market, from new product development to changing consumer preferences.

As the whole of the confectionery industry, including Ferrero Deutschland GmbH, finds itself in this context, it was decided that the focal issue of this work project would be: “The future of the confectionery market in Germany”. Furthermore, as a more in-depth approach to guiding the research and explaining the stated focal issue, the following supporting questions were developed:

- How will regulatory changes impact the confectionery industry, including restrictions on advertising and ingredients?
- How will the growing emphasis on sustainability impact the confectionery industry's future landscape in terms of production, sourcing, and consumption?
- How will heightened consumer awareness of nutritional information, public health campaigns, and evolving dietary recommendations affect the perception and demand for confectionery items?

- How can confectionery manufacturers innovate their product portfolio to meet the growing demand for healthier products without compromising on taste and quality?
- How can confectionery brands sustain their competitiveness and continuously drive consumer demand for their products?

4.2 Time Horizon

Defining the accurate time frame for the scenarios is critical when defining the focal issue. This is because the time horizon influences the scope of the issues to be considered during the scenario-building process (Bowers 2022). The time horizon chosen should correspond to the anticipated pace of change for the specific issue being addressed. The idea is to push the scenario planning process far enough into the future to challenge established assumptions and present potential futures that may differ significantly. However, it is also important to stay close enough to the present to ensure that the scenarios are meaningful and reliable in the eyes of decision-makers (Schwartz 1996; Scearce and Fulton 2004).

Although a number of laws restricting the advertising of HFSS products have already been drafted in Germany, it will be several years before these, or other laws come into force (expected date 2027) (Committee 2023). After that, it will be difficult to draw conclusions on their possible implementation before 2030, as it will take time to fully assess their impact on the confectionery market. Moreover, the excessive consumption of confectionery products has been identified as a public health priority by the World Health Organization. A comprehensive course of action with a target year of 2030 is currently being developed (Froidmont-Görtz et al. 2020). This plan will establish a global strategy to raise knowledge about health consequences related to the consumption of confectionery. It will include the implementation of an international communication plan and marketing campaigns, with a particular focus on children (Committee 2023; WHO 2023c). Given the vulnerability of the sector to short and medium-term changes in consumer preferences, technological improvements, and regulatory developments in today's fast-paced business environment, the time horizon cannot be too long.

This is why a time horizon of 7 years, until 2030, has been determined considering the subsequent factors. A period of seven years was considered appropriate to allow for possible changes or uncertainties in the regulatory and social context, as well as the likely responses and adaptations of the confectionery industry in Germany.

5. Phase II: *‘Explore’*

To account for the unpredictable and uncertain forces driving the future of the German confectionery sector, it is necessary to consider various scenarios. Plausible future scenarios can be generated by clarifying potential causes and their consequences based on a variety of observations. It is therefore necessary to look at a wide range of drivers with direct and indirect impacts on the future development of the confectionery industry. These drivers can be grouped into the areas of political developments, economic shifts, social change, technology advancements, legal considerations, and environmental trends (PESTLE Factors).

5.1 Megatrends & Trends

Megatrends and trends serve as powerful lenses through which dynamic shifts shaping our world can be observed and understood. Megatrends are influential forces of transformation that have a considerable effect on a broad scope of sectors. These are enduring factors that are observable and will shape future markets in the long run (Joint Research Center 2023).In contrast, a trend represents an emerging pattern of change. It is usually a gradual and long-term change in the drivers that shape the future of large social groups or potentially even of state governments (European Foresight Platform 2023).

Group Part

5.1.1 Megatrend III: ‘*Accelerating Technological Change*’

Technology is impacting not only the type and rate of scientific discoveries but also the management, administration, and production systems as well as the ways in which humans interact with one another, learn, and work. Furthermore, the connectivity between devices, computers, and data via the internet is increasing and the links between the real world and the digital world, like the metaverse, are starting to develop (Joint Research Center 2023).

Moreover, there is an acceleration in both the pace of development for novel technologies and the rate at which consumers and enterprises assimilate these advancements (McGrath 2019).

Advancements in technology, driven by AI, machine learning, robotics, and IoT, are increasing automation and productivity (Joint Research Center 2023). This surge in technological progress is significantly impacting numerous industries, particularly influencing production processes within the confectionery industry.

A study published by McKinsey predicts that applied artificial intelligence can support businesses including consumer packaged goods by adding capabilities and offerings and also making better decisions, helping to solve problems, and driving automation (Chui et al. 2023).

An area of prospective application for artificial intelligence (AI) resides in AI-driven production technologies, which hold the potential to facilitate enhancements in the packaging and design of confectionery products. Additionally, AI can help manufacturers assess their customer data like browsing and purchase history and thus help to identify new trends, analyze the market, and gather customer insights (Sidickk, Jain, and Narayanan 2021).

Moreover, technological advancements in confectionery packaging contribute to manufacturers aligning with the second megatrend *'Neo-Ecology'*. These recent developments in sustainable packaging and production technology enable firms to adapt to changing consumer demands as sustainability gains importance. But also, improvements in wrapping machines showcase the importance of technological progress for the confectionery industry. Modern machinery can produce complex designs of sweets, employ environmentally friendly packaging, and rely on innovative hybrid technologies that reduce energy consumption (Bünnagel 2023). These advancements consequently shape the industry by influencing production methods, reducing costs, and allowing for innovative designs in packaging.

Beyond reshaping packaging and production, technological advancements are also pivotal in research and development, significantly aiding in the discovery of new ingredients. Studies on alternative sweeteners and technological advancements in ingredient production led to the development of substitutes with functions and tastes comparable to those of sugar. One of these alternatives is rare sugar, which has comparable sweetness and volume but fewer calories than regular sugar. New soluble fibers have the potential to partially reduce the sugar content in confectionery while providing mild sweetness and adding bulk, as highlighted by Innova Market Insights (2023b). These new types of ingredients provide the confectionery industry with new opportunities to innovate and create new products.

Sub-trend: *'Personalized Nutrition'*

Personalized nutrition has been ranked as one of the most important food trends of 2021 under the name "Tailored to fit" by the market research company Innova Markets Insights (Ohr 2022). It takes the concept of healthier alternatives in foods one step further by considering how nutrition when customized to an individual's needs and preferences, may improve both physical and mental performance. Instead of just offering food with ingredients that match the needs of one consumer group, personalized nutrition aims to supply individuals with precisely the ingredients they require (Hansen, van Wijk, and de Jong 2021). One proposed definition for personalized nutrition is made by the American Nutrition Society as: "a field that leverages human individuality to drive nutrition strategies that prevent, manage, and treat disease and optimize health […]" (Bush et al. 2020). People are already tailoring their diets with the aid of technological devices like calorie trackers and smartwatches. Companies also use these kinds of gadgets along with other AI technologies to combine data from various sources, allowing for real-time biometric data and, as a result, personalized recommendations (Bernatonyte 2023). Therefore, the development of technology and digitalization is a crucial element required for the success of this trend (Pfersdorf 2023).

This trend also involves the creation of particular food items and supplements that can be utilized to enhance individual nutrition. Increasing the nutritional value of tomatoes by adding minerals and vitamins is one example already in development (Hansen, van Wijk, and de Jong 2021). In addition, the emergence of 3D printing technology for food is facilitating personalized nutrition by permitting the mass customization of products that incorporate functional ingredients impossible to achieve with other technologies (Eswaran, Ponnuswamy, and Kannapan 2023).

The various facets of this trend possess significant potential to impact the confectionery industry on multiple levels. The widespread implementation of personalized nutrition plans has the potential to decrease the demand for unhealthy confectionery items by consumers who are highly aware of their nutritional intake. In contrast, optimized food research offers opportunities to manufacture confectionery products that meet individual needs. This emerging category potentially offers new opportunities to grow for the confectionery industry.

Sub-trend: *‘Digital Commerce and Engagement’*

The second sub-trend characterizes the influence of the technology megatrend on the promotion and sales channels of the German confectionery industry. Internet usage in Germany has been constantly rising. In 2022, a total of 95% of the German population used the Internet (Statistisches Bundesamt 2023a; Deutscher Bundestag 2007), which corresponds to a sharp increase in penetration from 62.7% in 2007 (Deutscher Bundestag 2007). According to Schwarzl and Grabowska (2015), the number of internet users can be viewed as a key indicator for the development of online marketing as the internet user represents the potential audience and thus the potential for online marketing strategy.

This important area for advertising continues to evolve and new trends are emerging that may shape the future of online marketing. Important trends for the future include virtual and augmented reality, artificial intelligence, personalization, influencer marketing, and the trend of short videos on platforms like TikTok and Instagram (Pec 2023). Industry expert Thomas Elfinger (2023) emphasizes the significance of utilizing platforms such as TikTok and Instagram to address the young consumers who are predominantly active on these channels. He asserts that such trends are already evident in the United States and Asia and hold the potential to extend to the German market. Similarly, virtual and augmented reality have the ability to produce novel customer experiences, claims Lutz Anderie (2023) in an interview with Lebensmittelzeitung. Furthermore, he points out potential options for corporations in the food sector to get involved in marketing activities related to e-sports and cross-over marketing. According to Lutz Anderie businesses that support e-sports teams or combine products from the food and gaming industries can benefit both parties (Anderie 2023).

Overall, novel technological developments offer different potential touch points to the consumer and consequently drive innovative forms of marketing and customer engagement.

In addition to the general use of the internet and the associated novelties in marketing, 66% of the German population uses the Internet for shopping (Statistisches Bundesamt 2022).

This large-scale utilization of the Internet for purchases has not yet been reflected in the anticipated breakdown of confectionery products. However, over the period considered, there is a noticeable trend toward increasing shares of online confectionery purchases.

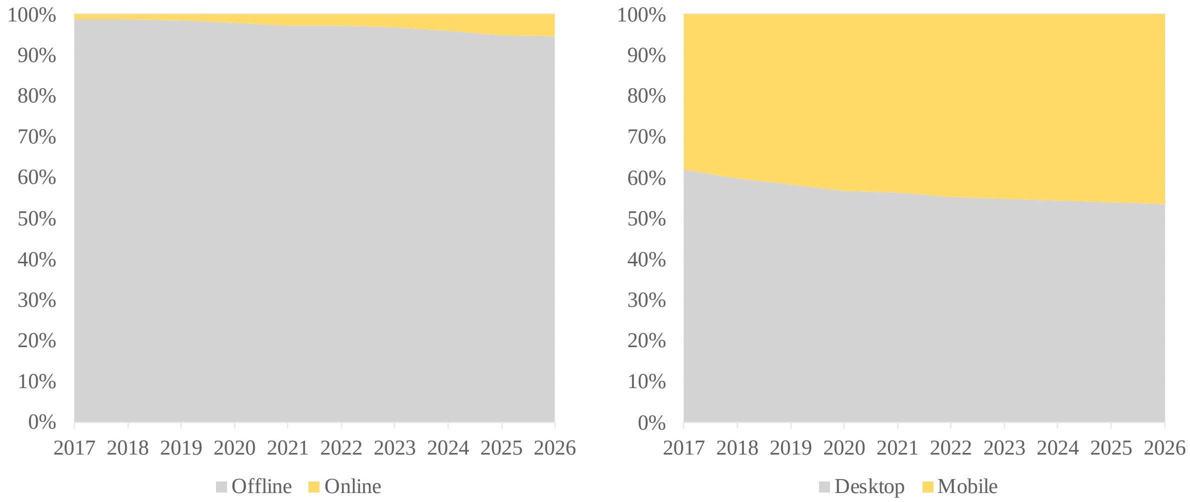

Figure 3: Confectionery & Snacking Revenues – Online/Offline Split and Desktop/Mobile Split |Source: Own Creation, Data: (Statista Market Insights 2023)

The share of revenue generated with online sales of the total market has constantly grown since 2018 and is predicted to continue its growth for the forecasted period until 2026. It is predicted to reach 5.7% in 2027 coming from 2.8% (Statista Market Insights 2023). This early trend highlights the increasing importance of e-commerce for the confectionery industry.

Within the online sales channels, the disparity between desktop and mobile purchases is predicted to decline, resulting in 53.6% usage of desktop computers and 46.4% mobile usage for purchases of confectionery (Statista Market Insights 2023). This trend emphasizes the increasing importance of mobile purchases for e-commerce in the confectionery market.

A special category of e-commerce is subscription-based e-commerce. Here, boxes containing the desired products are delivered at regular intervals. In the US, the entire market for subscription boxes grew by over 100% within five years before 2018 (Chen et al. 2018). Already in 2017, 5% of Germany used subscription boxes for food (Suhr 2017). There are also offers for subscription boxes with confectionery in Germany (e.g., boxes from Vernaschediewelt.com and worldofsweets.de). This segment could potentially represent a new growth market in the e-commerce sector and thus further accelerate e-commerce for the confectionery market.

5.2 Predetermined Elements

Following the exploration of dynamic megatrends and evolving trends within the confectionery market, the focus now shifts to the predetermined elements. In the field of scenario planning, predetermined elements refer to predictable trends whose consequences are foreseeable but not yet fully apparent. They form the basis for developing future strategies (Amer, Daim, and Jetter 2013). Among these, '*Consumer Health Awareness'* and '*Sustainable Ethical Shift'* stand out as particularly important factors.

'*Consumer Health Awareness'* has become a prominent market trend. Unlike mere market trends, the growing focus on health and well-being among consumers represents a deeply established change in behaviors and expectations that are expected to persist and evolve. While it is evident that increasing consumer health awareness will continue to influence market strategies, the complete spectrum of its consequences in the confectionery industry is yet to be fully realized. This means that confectionery market strategies must invariably conform to these health trends, requiring the incorporation of 'better-for-you' products, embracing innovations in healthier ingredients, and transparent labeling practices (Elfinger 2023; Simon 2023). As a constant element in the confectionery market, this aspect of consumer behavior influences all facets of the industry, ranging from production processes to marketing strategies and sales tactics. Therefore, aligning with these evolving health-conscious demands is vital.

Simultaneously, *'Sustainable Ethical Shift'* is emerging as another critical predetermined element, reflecting a profound shift in consumer values toward sustainability and ethical business practices. The demand for ecologically responsible and ethically sourced products is an established and enduring trend that is reshaping the industry's operating norms. Confectionery businesses should adjust by incorporating sustainable sourcing techniques, providing transparency in their supply chains, and embracing environmentally friendly packaging solutions (Elfinger 2023; Osmanbašić 2023). This alteration is not merely a response to consumer demand, but also a strategic obligation to align with regulatory standards and global sustainability goals. In the context of scenario planning, recognizing this trend as a consistent factor enables a more nuanced comprehension of future market dynamics, directing businesses toward strategies that are responsive and responsible.

These predetermined elements, *'Consumer Health Awareness'*, and the '*Sustainable Ethical Shift'* are not just influential market forces but also critical benchmarks for the confectionery industry's strategic planning. They represent the undercurrents that, while constant, demand agility and foresight in business strategies, ensuring that companies not only remain competitive but also resonate with the evolving expectations of their consumer base.

5.3 Uncertainties

As the next step in '*Explore'*, the uncertainties for the confectionery market were examined. These unpredictable forces can greatly affect the focal issue (Scearce and Fulton 2004) and their possible configurations have the potential to structure different futures for the actor's context. Following a comprehensive review of the key drivers of change, 11 uncertainties were identified, defined, and categorized, covering a range of critical external factors. The identification of these uncertainties was the result of extensive desk research, and Appendix 2 has a more extensive description of each uncertainty.

In Phase III, '*Synthesize*', a comprehensive visualization is presented, which shows all the uncertainties that have been discovered and their corresponding classifications.

*'Global Trade Policies'***:** The confectionery sector is vulnerable to the dynamics of global trade as it depends on it for the import and export of ingredients and products (MarketLine 2022). Uncertainties arising from geopolitical tensions, economic fluctuations, and consumer demands for fairer deals can lead to changes in international trade agreements and tariffs, with varying impacts on global supply chain dynamics (Amighini et al. 2023).

*'Health Regulations'***:** Political decisions on health regulations are another uncertainty that will

affect consumer preferences and the actions of confectionery companies. Potential restrictions on advertising, sale, and placement of high-sugar products in stores may not have a significant impact on demand, or they may radically alter the paradigm of consumption and production for these products (WHO 2023d).

'Consumer Spending Power': It is a key driver of product demand and pricing strategies in the confectionery sector. This uncertainty is dynamic and not predictable, as it depends on volatile and variable factors in Germany such as inflation and the cost of living, consumer confidence and preferences, income levels, and others (Hayes 2023a).

'Global Economic Stability': Economic fluctuations and global financial crises often lead to a recalibration of consumer spending and a reduction in non-essential consumption, including confectionery (Adrian 2021). Armed conflicts, pandemics, and extremist political forces that affect people's purchasing power and the cost of raw materials create uncertainty about the ability of confectionery manufacturers to meet these unpredictable economic challenges (Confectionery Production 2023b).

*'Stability of Supply Chain'***:** The German confectionery industry is immensely reliant on its supply chain stability (MarketLine 2022), which is jeopardized by unpredictable weather patterns, environmental changes, and global geopolitical upheavals that potentially cause significant disruptions (Myers 2022). Furthermore, the industry is heavily dependent on external suppliers for a majority of the raw materials, magnifying the effects of these risks.

*'Commodity Price Volatility'***:** The confectionery industry faces significant vulnerability to price volatility stemming from fluctuations in the availability of key ingredients as a result of weather conditions, instability in producing regions, and shifts in global demand. Due to these occurrences beyond the industry's control, commodity prices fluctuate, leading to unpredictability in future price levels (ChAI 2022).

'E-Commerce': While e-commerce is on the rise in the confectionery sector, the development

and impact of this sales channel on the sector is still uncertain. This is due to the potential limitations on the availability of products with a high sugar content (including in the digital universe) and the fact that confectionery is mainly an impulse purchase for immediate consumption, which online shopping with its delivery time cannot fulfill (Mordor Intelligence 2023; Livingston 2022).

‘Alternative Sweeteners and Production Methods’: Confectionery manufacturers are increasingly looking for alternative sweeteners in their product lines and ways to reduce sugar (Confectionery Production 2021). However, the development of new alternatives is limited by the constantly changing consumer preferences that currently favor plant-based alternatives. It remains uncertain how the market will respond (Foodware 365 2021).

‘Climate Change Impact’: The full effects of climate change on the regions supplying raw materials to the German confectionery industry are uncertain due to unpredictable changes in weather patterns (Umweltbundesamt 2021; Nieburg 2017). Thus, climate change presents a significant challenge for the industry due to the uncertain and unpredictable availability and quality of essential raw materials.

*‘Packaging Innovations’***:** Driven by government regulations and consumer preference, packaging in the confectionery industry is undergoing changes. It remains uncertain whether returnable and refillable packaging will be embraced by consumers, as well as whether companies will be able to afford and mass-produce returnable and portion-controlled options (Sutaria 2023).

‘Food Labeling Laws’: Despite calls for a single European framework and the European Commission's Farm to Fork strategy for standardized front-of-pack nutrition labeling, uncertainty remains about the future regulatory landscape for the German confectionery sector. This is because many labels are still voluntary and consumer demands are constantly evolving (European Commission 2023; BMEL 2023).

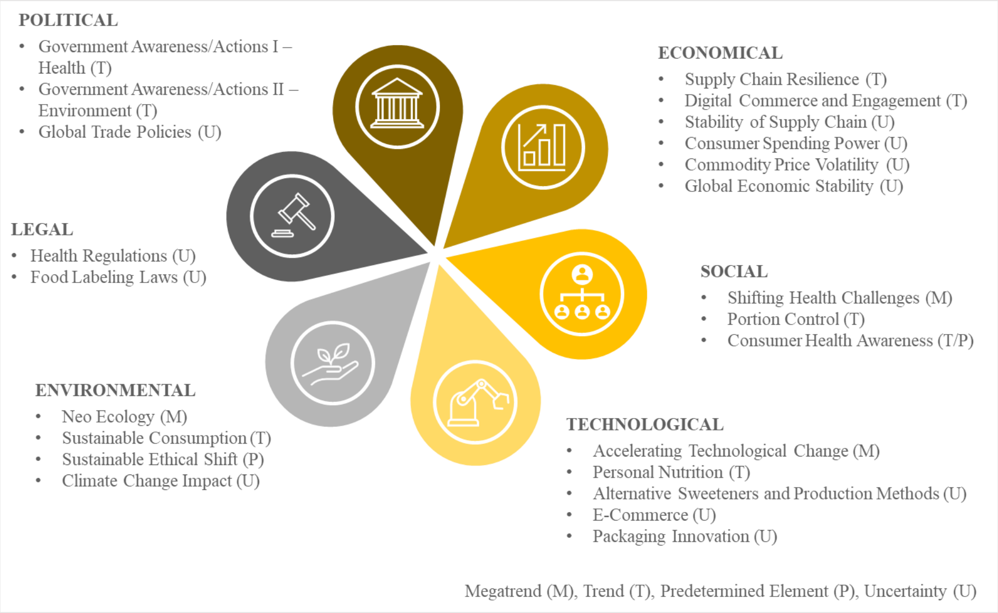

Figure 4: PESTLE Framework with all Drivers of Change | Source: Own Creation

6. Phase III: '*Synthesize*'

After analyzing the external environment affecting the German confectionery industry (Phase II: *'Explore'*), the focus shifts to identifying the most critical and uncertain factors. These elements, called 'key uncertainties', are the cornerstone of scenario building. The aim is to identify the two most important and uncertain driving forces for the focal issue. These two uncertainties serve as axes in a matrix, framing the polarities of what could potentially unfold within the defined timeframe of 2030. The intersection of these axes allows for the exploration of four distinct scenarios that challenge assumptions and respond to strategic concerns (Scearce and Fulton 2004; Schwartz 1996).

6.1 Development of Scenario Matrix

In the process of matrix development, a four-step approach is undertaken. The first step involves conducting a survey to rank uncertainties based on their impact and level of uncertainty (Appendix 3). Following this, related key uncertainties are grouped to streamline the scenario development process. A deductive approach is then employed to construct a scenario matrix. To enhance the robustness and applicability of the scenarios, the final step involves cross-validation of the scenario matrix through interactions with industry counterparts, a workshop, and an expert.

6.1.1 Mapping Uncertainties

After evaluating the survey outcomes, a graph was constructed to visualize uncertainties according to their average impact and uncertainty ratings. The subsequent stage involved delineating the area of interest, achieved by applying threshold values (7.5 for impact and 8 for uncertainty) derived from the survey distribution. Within this defined area, four critical uncertainties emerged: '*Health Regulations'*, '*Stability of the Supply Chain'*, '*Climate Change Impact'*, and '*Commodity Price Volatility'*. These uncertainties play a foundational role in shaping the scenarios that are pertinent to the future of the German confectionery market.

6.1.2 Grouping of Uncertainties and Identification of Key Uncertainties

The subsequent phase involved examining the four identified uncertainties for interdependencies. This analytical process aimed to identify potential groupings based on shared characteristics and causal relationships and to ensure sufficient independence between clusters. *'Stability of the Supply Chain'* emerged as a critical factor influenced by a spectrum of elements, encompassing geopolitical tensions and political instability. These disruptions were referred to as a multidimensional challenge since they may result in imbalances between supply and demand, which would then cause price volatility (Attinasi et al. 2021). Additionally, '*Climate Change Impact'*, with its potential to intensify the frequency and severity of extreme weather events, emerged as intricately tied to commodity price volatility and global supply chain disruptions (United Nations 2023). Furthermore, climate change impact is identified as exerting pressure on affected economies, fostering political instability and unrest, subsequently leading to disruptions in the supply chain (Marchant 2021).

In contrast, *'Health Regulations'* is identified as an independent variable. Although health regulations can indirectly influence supply chains (Attinasi et al. 2021), primarily during wildcard events such as Covid-19 with imposed regulations on trade and day-to-day consumption, their capacity for independent adjustment sets them apart. Even in the face of potential challenges such as instability of the supply chain, climate change impacts, or commodity price volatility, health regulations emerged as resilient and sufficiently independent influences unaffected by environmental factors.

This analysis led to the definition of two distinct clusters, with *'Stability of Supply Chains'*, *'Climate Change Impact'*, and *'Commodity Price Volatility'* forming one group, and *'Health Regulations'* comprising the other.

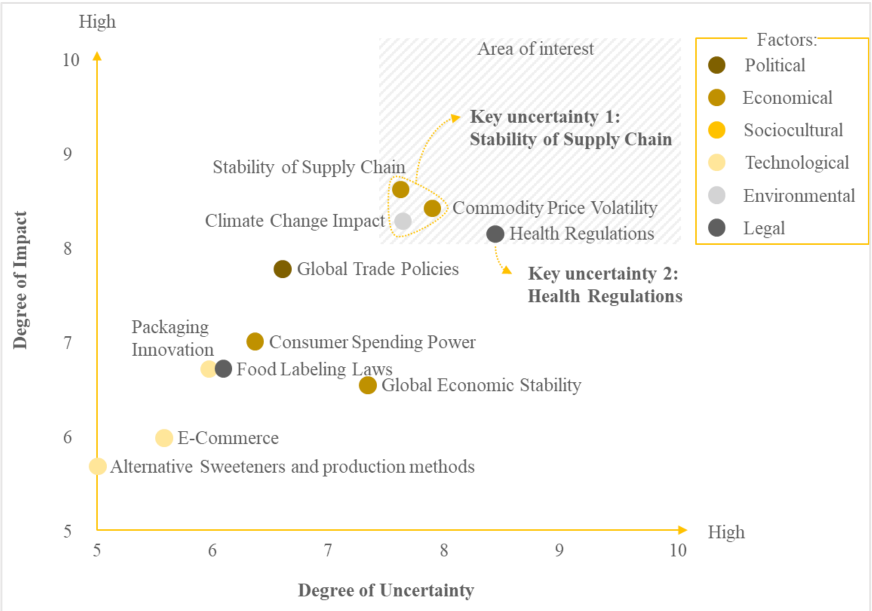

Figure 5: Uncertainties Mapping | Source: Own Creation

6.1.3 Key Uncertainties

To substantiate the categorization as a key uncertainty, it is essential to establish a significant degree of both impact and uncertainty. This necessitates offering a rationale aligned with the findings obtained from the survey.

Key Uncertainty 1: *'Stability of Supply Chain'*

High impact: '*Stability of Supply Chain*' significantly influences the German confectionery industry, portraying a high impact on various crucial dimensions. Firstly, the industry heavily relies on the intricate global network of exports and imports for essential raw materials, particularly cocoa and nuts (BDSI 2023). The vulnerability of this interconnected supply chain becomes evident in the event of disruptions, such as shipping delays, travel limitations, and shortages of supplies. As exemplified by the challenging global economic and political environment, these disruptions invariably escalate costs for manufacturers, encompassing higher expenses for raw materials. The surge in commodity prices underscores the industry's susceptibility to supply chain disturbances (Livingston 2022). Moreover, the consequential limitations on agility pose a substantial threat to the industry's capacity to adapt promptly to environmental changes and shifting consumer trends, thereby jeopardizing overall profitability (Abdoli and Valmohammadi, 2017).

High uncertainty: The uncertainty surrounding the *'Stability of Supply' Chain* in the confectionery industry is characterized by multifaceted dimensions. Foremost among these uncertainties is the climatic outlook for key raw material production, notably cocoa and nuts. Climate models project a potential crisis, with forecasts indicating that cocoa farms in critical regions such as Côte d'Ivoire and Ghana may become unsuitable for cocoa production by 2050 (Brodwin 2018). This impending threat introduces a high degree of uncertainty regarding the timeline of climate change impacts on cocoa production, considering the 2030 horizon. Furthermore, the externalities of climate change might exert unforeseen pressures on political stability in the primary raw material countries (OECD 2015), thereby adding an additional layer of uncertainty to the industry's supply chain dynamics.

Additionally, Gunnella and Quaglietti (2019) highlight a surge in geopolitical tensions, primarily attributed to the escalating wave of protectionism. This is evident in the proliferation of both non-tariff and, more recently, tariff barriers as well as a decline in public support for globalization. The consequences of these tensions manifest in trade disputes involving multiple countries, resulting in the imposition of tariffs that, in turn, adversely affect trade and economic activities. The subsequent surge in trade costs amplifies uncertainty, creating a confluence of challenges intertwined with financial stress.

The convergence of these factors makes the confectionery industry highly vulnerable to the unpredictable effects of climate change and related geopolitical consequences, adding to the overall uncertainty surrounding supply chain stability.

Key Uncertainty 2: *‘Health Regulations’*

High impact: *‘Health Regulations’* emerge as a vital factor exerting a high impact on the German confectionery industry due to several interconnected dimensions. Firstly, the confectionery products inherently exhibit a high added sugar content, a characteristic that aligns with the industry's traditional offerings. The association between excessive sugar consumption and adverse health effects, including cardiovascular diseases (Harvard Health 2022), obesity (Ndumele 2021), and diabetes (Harvard Health 2022), underscores the industry's vulnerability to regulatory changes targeting added sugar content. Any alterations in health regulations on sugar content would reverberate across a substantial portion of confectionery products. Additionally, health regulations are often accompanied by educational campaigns promoting healthier consumption, thereby fostering increased health-conscious trends among consumers (Bradley et al. 2020). This shift in consumer behavior, prompted by regulatory changes, could lead to a decreased demand for traditional confectionery products, posing a formidable challenge to the industry's established market dynamics. The compliance costs associated with adapting to heightened regulations further amplify the impact, imposing financial burdens on confectionery manufacturers (Krishna 2017).

High uncertainty: The uncertainty surrounding *‘Health Regulations’* in the confectionery industry is marked by intricate dynamics rooted in various influencing factors. Firstly, the dependence on governing political parties introduces a layer of unpredictability, as different parties espouse diverse policy priorities, ideological stances, and susceptibilities to lobbying efforts (Kearns, Schmidt, and Glantz 2016). The variance in how political entities value public opinion further exacerbates the uncertainty, making it challenging for industry stakeholders to anticipate and adapt to shifting regulatory landscapes. Disagreements among experts constitute another facet of uncertainty, with divergent perspectives on the effectiveness and relevance of measures like sugar tax and advertising bans (Dogbe and Revoredo-Giha 2022). Such discordant viewpoints contribute to ambiguity regarding the tangible impact of proposed health regulations on the confectionery industry. Additionally, the landscape of healthcare innovation, including the development of weight-loss drugs, introduces a dimension of uncertainty, as unforeseen advancements in this realm could potentially not only reshape but reduce the necessity of regulatory in the first place, even though weight-loss drugs are recommended to be accompanied by a “broader medical weight-loss program” and change in diet (Harvard Health 2018). The intricate interplay of these factors underscores the multifaceted and uncertain nature of *‘Health Regulations’* for the confectionery industry.

6.1.4 Scenario Matrix

The scenario matrix is constructed, incorporating two key uncertainties: ‘*Stability of Supply Chain’* and ‘*Health Regulations’*. These uncertainties are configured into four distinct scenarios, each capturing a unique combination of factors that could shape the future landscape of the German confectionery market.

The first axis of the matrix, *‘Stability of Supply Chain*’, is defined by two configurations. Configuration 1, characterized as "*Disruption-free*," envisions a scenario where there is no relevant climate change impact on confectionery raw materials, no supply chain disruptions, and normal commodity price volatility. In contrast, Configuration 2, termed "*Disrupted*," foresees climate change impacting confectionery raw material production, supply chain disruptions arising from climate change and geopolitical tensions, and an increase in commodity price volatility.

The second axis, ‘*Health Regulations’*, is delineated into the following two configurations:

Configuration 1, denoted as "*Current*," assumes no change to the current regulatory environment, whereas configuration 2, labeled "*Strict*," envisions the introduction of severe regulations specifically targeting the confectionery industry.

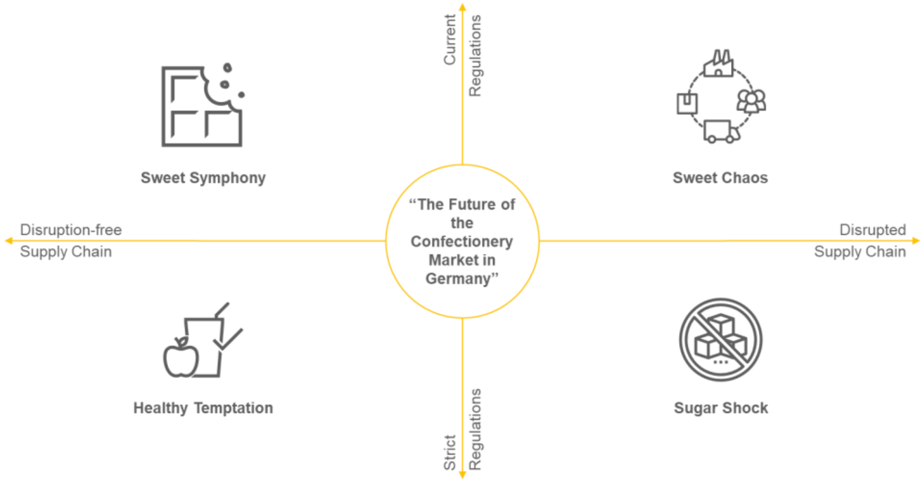

Figure 6: Scenario Matrix | Source: Own Creation

The resulting four scenarios, namely *'Sweet Symphony'*, '*Sweet Chaos'*, *'Healthy Temptation'*, and *'Sugar Shock'*, encapsulate the contrasting states of the world arising from different combinations of *'Stability of Supply Chain'* and *'Health Regulations'*.

These scenarios exhibit a high degree of expressiveness, providing clear and contrasting high concepts. The matrix is inherently relevant to the focal issue of the future of the German confectionery market, illuminating the key uncertainties that could impact the industry. Plausible stories emerge from the configurations, aligning with potential real-world developments. The scenarios diverge significantly, offering distinct narratives crucial for scenario planning. Each quadrant poses unique and relevant challenges, contributing to the matrix's effectiveness in guiding strategic decision-making for the confectionery industry.

6.1.5 Cross-validation of the scenario matrix

The cross-validation process for the scenario matrix consisted of three primary sources involving both the client, Ferrero Deutschland GmbH, and two external sources. The primary objective was to validate the customized view of Ferrero Deutschland GmbH presented in the survey and ensure its applicability to the broader context of the entire German confectionery market.

The first phase of validation involved presenting the scenario matrix to Mars GmbH, the second-largest player in the German confectionery market. In an interview with Mars GmbH’s Managing Director, Carsten Simon, the matrix's key uncertainties, namely *‘Stability of Supply Chain’* and *‘Health Regulations’*, were examined. This step aimed to assess the matrix's transferability beyond Ferrero Deutschland GmbH, incorporating diverse perspectives from another major industry player.

The second phase focused on internal validation within Ferrero Deutschland GmbH. A workshop setting provided a platform to present the scenario matrix and engage Ferrero Deutschland GmbH’s management in the discussion. This internal validation ensured that the matrix resonated with Ferrero Deutschland GmbH's perspectives and the coherent interpretation of survey results.

The final phase engaged an external expert, Deloitte Consultant Thomas Elfinger, for an independent validation of the scenario matrix. In an interview, the matrix was presented and discussed, seeking an external perspective on its relevance, robustness, and applicability to the broader industry landscape.

6.2 Scenario Narratives

In this section of the report, the focus lies on scenario analysis for the German confectionery market leading up to 2030. This phase synthesizes earlier discussions of market drivers and trends into four distinct scenarios, each illustrating a unique future landscape for the industry. These scenarios are designed not as predictions, but as strategic tools to navigate the uncertainties and possibilities that lie ahead, providing insights for informed decision-making in the face of evolving market dynamics and consumer behaviors.

6.2.1 Scenario 1: ‘Sweet Symphony’

In the German confectionery market, the reliability of a disruption-free supply chain and adherence to current health regulations serve as the foundation upon which traditional sweets and chocolates continue to command significant sales and demand. This market stability, grounded in traditional offerings, mirrors a deep-rooted consumer loyalty and preference for well-established tastes (Konar et al. 2022). Yet, alongside this steadfast demand for traditional products, there is a noticeable shift in consumer behavior, with an increasing segment of the market gravitating toward healthier and more sustainable options (EuroDev 2023). This shift is not merely a transient trend but an indication of a deeper, more enduring change in consumer attitudes and preferences.

Contextual Analysis

The German confectionery market has demonstrated impressive resilience and adaptability in response to market trends and general developments. It has successfully overcome the challenges of the early 2020s, including the COVID-19 pandemic and geopolitical tensions arising from the Ukraine conflict. The industry's ability to adapt to global disruptions and shifting consumer preferences has been instrumental in this recovery. Building on this adaptability, the German confectionery market is now also being significantly shaped by government policies that emphasize nutrition, health, and sustainability. Key to this political landscape is the promotion of organic food and farming, in line with increasing consumer demand for natural, health-conscious choices. These policies encourage healthier consumer behavior and support the growth and diversification of the confectionery industry.

The European Union's Farm to Fork strategy is a key policy initiative continuing to transform the food systems. It sets a clear goal to increase organic farmland, a change that is significantly impacting the confectionery sector (European Commission 2020). The availability and consumption of organic ingredients are now more prominent, a trend that the industry is actively capitalizing on. The strategy's focus on sustainable agriculture aligns perfectly with the industry's ongoing shift toward organic confectionery, meeting consumer demands for products that are not only delicious but also environmentally responsible (Capgemini 2020). The political focus extends beyond organic practices, with a strong emphasis on addressing climate change and promoting eco-friendly business practices. The government is actively encouraging confectionery manufacturers to adopt sustainable methods, offering incentives and subsidies for environmentally responsible production (German Federal Ministry of Finance 2021). This approach is steering the industry toward a more sustainable future.

Moreover, the current geopolitical landscape is characterized by stability and a commitment to economic sustainability. The absence of import restrictions and smooth trade relations facilitate the import and continuous access to the raw materials required for manufacturers. This stable geopolitical environment is crucial, allowing the industry to plan and execute long-term strategies effectively.

Transitioning from the political realm, the legislative framework is significantly influencing the German confectionery market. Although the market remains moderately regulated, there have been no significant changes in regulations since 2023. Nevertheless, the current legislative environment still significantly impacts industry practices.

EU regulations, notably the Supply Chain Act, are central to this landscape. These regulations enforce stringent standards on sourcing practices, requiring confectionery manufacturers to strategically adapt to comply (European Commission 2020). The industry's response to these regulations involves balancing product quality and safety with the operational and economic impacts of compliance.

Despite ongoing discussions, there are no taxes on HFSS products in place. While some studies suggest potential benefits in reducing the consumption of such products, the representativeness and breadth of these studies are questioned, signalizing the need for more comprehensive data to validate their effectiveness (Impact And Policy Research Institute 2022; Euromonitor 2021). Similarly, proposals for an advertisement ban on certain unhealthy confectionery products have not been implemented. This decision stems from the same reasons as the taxes – a lack of sufficient data to prove their effectiveness in public health improvement (Lebensmittelverband Deutschland 2023). This situation places the confectionery industry in a position where it must remain agile and responsive, not only to the current legislative environment but also to potential future changes, particularly those targeting public health and consumer behavior.

As the focus shifts from legislative influences to environmental factors, the German confectionery market of 2030 is currently being increasingly impacted by climate change and ecological considerations. The visible effects of climate change, including more extreme weather patterns, warmer winters, and drier summers, have already led to a heightened industry focus on sustainable and eco-friendly practices to mitigate significant impacts on vital raw materials (Matti et al. 2023).

This environmental context is driving confectionery manufacturers to adopt more sustainable sourcing methods, reduce their carbon footprint, and embrace energy-efficient manufacturing processes. The use of eco-friendly packaging materials and a commitment to waste reduction and recycling are now standard practices. Initiatives such as reducing plastic waste by using aluminum cans and paper packaging, as well as innovative alternatives like grass paper and recycled carton boxes, are gaining traction in the industry (Horx 2022; EuroDev 2023). These shifts are not just in response to regulatory compliance but also to growing consumer expectations for environmentally responsible products (Am et al. 2023).

The industry's innovation is evident in its partnerships with technology providers, fostering the development of new production methods and packaging solutions that are less harmful to the environment (Horx 2022; Myers 2020). These collaborations are crucial in maintaining a balance between sustainability and operational efficiency (Myers 2020).

In addition to sustainable sourcing and packaging, social certifications have gained prominence in the confectionery industry. Brands are increasingly focusing on certifications that support the social, economic, and environmental pillars of sustainability (Ferrero 2022; Mars 2022). Certifications such as Fair Trade (2023), Rainforest Alliance Certification (2023), and Forest Stewardship Council (FSC) (2023) provide assurance to consumers that the products they purchase meet rigorous standards in terms of responsible sourcing and ethical practices.

Following the environmental considerations, the socioeconomic landscape emerges as a crucial factor shaping the German confectionery market. The landscape is characterized by an interplay of economic stability, consumer spending power, and evolving market demands.

In the current market dynamics, consumer purchasing decisions are predominantly influenced by price, reflecting the economic stability and consumer spending trends. With the economy showing resilience, marked by low unemployment rates and steady income growth, consumers maintain robust spending power. However, they are increasingly cost-conscious, prioritizing affordability in their buying choices (FMCG Gurus 2022). Following the consideration of pricing, other important but secondary considerations in their decision-making process include brand reputation, ESG claims, and nutritional content of items (McPoland, Furey, and McLaughlin 2020; Rejman and Kasperska 2011). This shift in consumer priorities is supporting continued indulgence in confectionery products, while also steering the market toward value-driven purchases.

Another notable trend is the increase in health and wellness awareness. More consumers are becoming conscious of lifestyle-related health issues, driving a rise in demand for healthier snack options, including vegan, organic, gluten-free, and sugar-free chocolates (Konar et al. 2022; Grand View Research 2022). Social media and workplace wellness programs have also played a significant role in popularizing these healthier snack choices, contributing to the market's shift toward healthful snacks (Grand View Research 2023a). This growing preference for health-conscious products is reshaping the market, with organic chocolate notably gaining traction due to the perceived health benefits of natural products (Grand View Research 2021).

Complementing this development, the global growth of the snacking market, particularly in the United States, highlights a broader shift toward healthier snacking choices (Pham 2023). This trend is mirrored in Germany, where there's increasing demand for convenient snacks that align with health and wellness trends. The U.S. market's expansion serves as a benchmark, indicating the potential for similar growth in Germany's healthy snacking segment (Simon 2023).

Another significant factor affecting consumer choices and manufacturer strategies is the economic implications of soaring sugar prices in the EU. Rising prices, influenced by factors like increasing energy costs and supply reductions (Asadu and Ghosal 2023), are prompting manufacturers to enhance process efficiency and broaden their product portfolios to include less sugar content. This economic pressure is influencing both consumers and manufacturers, driving the demand for and supply of healthier confectionery options.

Shifting focus from socioeconomic factors, the German confectionery market in 2030 is distinguished by a supply chain characterized by robust resilience and heightened efficiency. It ensures a consistent and reliable flow of ingredients and finished products, having evolved to meet the dynamic needs of the industry and market.

Advanced IT systems are at the heart of this resilience, providing robust support for efficient resource management and agile response to market changes (Elfinger 2023). These systems enable real-time data processing and quick adaptability, which are essential in a market where consumer preferences and external conditions can shift rapidly. Effective IT systems facilitate better traceability, transparency, and supply network management, often leveraging technologies like AI and blockchain (Colehower 2023; Digital Food Ecosystem 2021; Confectionery Production 2020).

Besides investing in advanced IT systems, significant investments in infrastructure development are crucial for ensuring that the entire supply chain is optimized for both efficiency and sustainability. The industry is actively modernizing storage and transportation facilities, incorporating advanced technologies and sustainable practices. These upgrades include implementing energy-efficient systems, utilizing renewable energy sources, and adopting smart logistics solutions to reduce carbon footprint and enhance operational agility (Mittal, Architt, and Arjun 2018). Such modernization of storage and transportation not only reflects the industry's dedication to environmental responsibility but also significantly boosts operational efficiency, ensuring that the supply chain can adapt swiftly and effectively to the ever-changing market demands and environmental challenges.

As part of a strategic shift toward greater independence, the industry is increasingly focusing on vertical integration. Consequently, some major players are acquiring plantations to grow their products (Ferrero Hazelnut Company 2023). This approach aims to reduce reliance on imports and promote self-sufficiency, aligning with broader trends toward sustainability and reduced environmental impact (Döhler 2023). The move toward vertical integration is a response to contemporary market demands and ecological considerations.

Alongside these efforts toward self-sufficiency, the crucial role of collaboration in the supply chain is also being recognized. Collaboration between manufacturers and suppliers has intensified, reflecting a comprehensive approach to managing the supply chain and ensuring consistent resource availability (Elfinger 2023). This includes conducting regular audits and assessments to maintain high-quality standards and ensure that suppliers fulfill the industry's strict requirements (Dr. Oetker 2023).

Transactional Analysis

Industry

In 2030, the German confectionery industry is navigating through a landscape shaped by significant ecological, regulatory, and consumer-driven changes. These adaptations, crucial for the industry's resilience, bring forth challenges and opportunities in equal measure.

One of the most salient developments is the industry's response to the heightened focus on eco-friendly practices. Confectionery manufacturers are increasingly integrating renewable energy sources into their production and packaging processes, signifying a departure from traditional energy-intensive methods. This shift toward sustainability extends to waste management as well, with companies investing in recycling initiatives and adopting sustainable packaging materials. These changes, initially requiring substantial investment and operational adjustments, have become essential in meeting both regulatory requirements and consumer expectations for environmental responsibility.

Sustainable sourcing practices have also become a cornerstone of the industry's strategy, particularly for crucial ingredients like cocoa and sugar. This involves ensuring that sourcing practices are environmentally sustainable and socially responsible, aligning with global standards and consumer expectations. However, these efforts have necessitated a reassessment of traditional supply chains, impacting both cost and operational efficiency.

In the face of economic pressures, particularly the absolute increase in sugar prices and the industry-wide impact it entails, manufacturers have optimized production processes and embraced cost-effective alternatives to ensure they remain competitive without compromising on quality. Strategic pricing policies have been developed to balance profitability with maintaining consumer affordability (Ingredients Network 2023b; Steve Wynne-Jones 2022), especially given the increased costs associated with environmental compliance. In this environment, managing costs and responding to evolving market trends have become crucial for sustaining growth and profitability (Grand View Research 2022).

Product development within the industry is increasingly focusing on health-conscious offerings. As consumer preferences shift, the markets for organic and sugar-free chocolate are expected to experience strong growth (Grand View Research 2021, 2020). In response, manufacturers face the challenge of preserving the appealing taste profiles of their products while meeting new health standards. Substantial investments in research and development are essential for creating confectionery with lower sugar content and functional ingredients that cater to heightened consumer health awareness. Although traditional products continue to be significant revenue generators, expanding product portfolios to include healthier alternatives clearly reflects the industry's adaptation to evolving market preferences (Elfinger 2023; Osmanbašić 2023) and drives further innovation (Steve Wynne-Jones 2022).

Another key aspect of the industry's adaptation is its alignment with the evolving health and safety regulations. The regulatory landscape, characterized by stable yet continuously evolving regulations, presents a complex challenge for the confectionery industry. This environment requires ongoing monitoring and analysis to ensure compliance and alignment with public health and consumer protection goals. The industry must stay agile and responsive, particularly in adapting to changes affecting product formulations and health claims.

Additionally, there is an increased focus on greater transparency in product labeling, detailing ingredients, and nutritional information, which has become a standard industry practice. This move toward increased transparency is not only about building consumer trust but also about aligning with the industry's commitment to public health and safety (Brewster 2021; Spencer-Jolliffe 2022).

The market's competitive dynamics are also evolving, characterized by a notable trend toward consolidation. Larger confectionery companies are reinforcing their market positions, often absorbing smaller competitors through strategic mergers and acquisitions (Fortune 2020). This movement is largely driven by the need to achieve economies of scale, secure market influence, and navigate a competitive landscape that is simultaneously stable and dynamic. However, the market also witnesses the entry of new, innovative players who often focus on niche segments (Lindel 2021). These new entrants are introducing products that cater to specific consumer needs, such as vegan, allergen-free, and organic confectionery, thereby adding variety and catering to the evolving demands of health-conscious consumers (Grand View Research 2022; Rützler and Reiter 2020; Kloepfel 2019).

Retailer

Retail conditions in the German confectionery market have evolved too in 2030. Consumer preferences, regulatory discussions, and supply chain adaptations have all contributed to the reshaping of the retail sector. These shifts have a profound impact on their operational strategies, product assortments, and customer engagement approaches (Konar et al. 2022).

Retailers are responding to a noticeable shift in consumer demand toward healthier and more sustainable confectionery options. This change has led to a diversification in product assortments, with an increased presence of organic, functional, and plant-based confectionery on the shelves (Konar et al. 2022). This adaptation reflects a deeper consumer trend toward health-conscious and environmentally responsible products, necessitating retailers to align their offerings with these evolving preferences.

In parallel, the dynamics of the supply chain have undergone considerable changes, particularly with manufacturers increasing focus on vertical integration, self-sufficiency, and sustainable practices. Retailers, therefore, are reevaluating their supply chain strategies, forging stronger collaborations with manufacturers. This strategic shift ensures retailers can maintain consistent product availability, aligning with the industry's move toward sustainability and reduced environmental impact. These partnerships are vital for retailers to meet evolving market demands and consumer expectations for responsible sourcing.

Improved communication and collaboration with manufacturers, facilitated by advanced technologies, have become crucial for retailers in the confectionery industry. By leveraging these technologies, retailers are enhancing supply chain efficiency and inventory management. This tech-driven approach enables them to respond more swiftly and effectively to market trends and consumer demands, maintaining a competitive edge in the rapidly evolving market.

Another key aspect of the retailers' adaptation is the emphasis on waste management. As sustainability becomes a priority, retailers are adopting creative approaches to handle products with limited shelf lives. Part of this strategy involves extending the shelf life of confectionery products through the use of advanced packaging solutions, selecting the right packaging materials, and modifying the packaging environment (Alizadeh-Sani et al. 2020). Such practices significantly mitigate the impact of external environmental conditions on these products prior to their delivery to consumers. Additionally, implementing discount strategies is another viable method to reduce waste effectively (Konar et al. 2022; Elfinger 2023). This will positively affect the retail logistics activities and resonate with the contemporary consumer's environmental concerns and expectations for sustainable retail practices.

Consumers

As the confectionery market in Germany evolves up to 2030, consumers find themselves at the heart of significant changes, which are reshaping their interactions with and expectations from confectionery products. The market's transformation, influenced by industry innovations and regulatory shifts, leads to a more diverse, transparent, and health-focused consumer experience.

Nowadays, consumers enjoy access to an expanded array of confectionery products. The industry's shift toward incorporating organic and healthier alternatives into their product lines meets the growing consumer demand for quality and variety. This evolution in product offerings ensures that consumer preferences for both indulgence and health-conscious choices are catered to effectively.

The growing global reach of the confectionery market offers German consumers a range of international flavors that significantly enhance their taste experience and appeal to a more diverse customer base. This broad exposure to different global tastes is complemented by increased transparency in product labeling. Regulatory frameworks, such as the EU Supply Chain Act, have led to a new level of openness, providing consumers with in-depth information about the ingredients, manufacturing processes, and ethical sourcing practices of the confectionery products they choose.

Economic factors also play a significant role in shaping consumer behavior. Despite a stable economic backdrop, the potential for price adjustments due to increased production costs and regulatory compliance influences consumer purchasing decisions. Consumers have become more discerning, seeking value for money while balancing their desire for indulgence with budget considerations.A significant shift is occurring in consumer health consciousness and consumption habits. Heightened awareness and educational campaigns about nutrition have led consumers to increasingly view confectionery as an occasional indulgence, often purchased impulsively or to satisfy sweet cravings (Mordor Intelligence 2022). This shift aligns with a broader trend toward healthier eating habits. Consequently, there is a growing consumer preference for confectionery products with reduced sugar, salt, and unhealthy fats, reflecting a change in consumption patterns toward healthier choices.

6.3 Scenario Analysis and Comparison

The confectionery industry will be affected differently by each of the scenarios described. Table 1 shows the most relevant aspects for industry dynamics, namely consumer demand for traditional and healthier products, portfolio size, type of ingredients used and, confectionery pricing behavior, always compared to the current confectionery reality in 2023. This analysis allows the comparison of the different scenarios and a better idea of which would be more or less favorable for the industry if they were to be in place in 2030.

Table 1: Comparison of the Four Scenarios | Source: Own Creation

	Demand for Traditional Confectionery	Demand for Healthy Confectionery	Size of Existing Portfolio	Size of New Portfolio	Ingredients in Existing Portfolio	Ingredients in New Portfolio	Prices for Confecionary Products
Sweet Symphony	→	↗	→	↗	No changes	Organic & Plant-based	→
Sweet Chaos	↘	↗	↘	↗	No changes	Cheaper Ingredients	↗
Healthy Temptation	↓	↑	↘	↑	No changes	Alternative Sweeteners & Reduction of Sugar	↗
Sugar Shock	↓	↗	↓	↗	No changes	Cheaper Ingredients	↑

↑ Increase ↗ Slight Increase → Stagnation ↘ Slight Decrease ↓ Decrease ↗ Slight increase due to M&A

The ‘*Sugar Shock’* scenario, with higher product prices due to supply chain difficulties and an attempt to make the product portfolio healthier, will result in the largest decline in demand for traditional products. On the other hand, in the ‘*Sweet Symphony’* scenario, confectionery manufacturers will continue to grow slowly, gradually introducing more organic and plant-based products, without there being any major restrictions or changes in the production of and demand for traditional products. The *‘Sweet Chaos’* and ‘*Healthy Temptation’* scenarios pose different challenges to the industry. One is the search for cheaper and more readily available products to cope with the disruptions in the supply chain, which will result in reducing the traditional product portfolio as well as modest price increases. And the other is the production of alternative sweeteners and sugar reduction to satisfy the increase in consumption of healthier confectionery. Common to all the scenarios is that it is not plausible to change the ingredients used to make the existing confectionery products. As discussed with the client and referred to in the scenarios, in order to maintain the quality, taste, and texture of current products, companies in the sector prefer to introduce a new product line with new ingredients rather than take the risk of changing traditional recipes and product ingredients (Behle et al. 2023a).

6.4 Market Financial Simulation

The primary objective of the financial simulation is to anticipate the potential financial developments within the German confectionery sector by the year 2030 under the four distinct scenarios. This analysis delves into key aspects, including revenue, market volumes, and the resultant price dynamics. Employing a technique that integrated research-based assumptions, the simulation statistically assesses the impact of significant uncertainties on these market characteristics (full calculations at Appendix 6).

The modeling process involves the quantification, application, and combination of the impacts arising from strict health regulations and disrupted supply chains for each scenario. The baseline scenario, '*Sweet Symphony*', which remains largely unaffected by these extremes, is considered the status quo forecast based on the German confectionery market's trajectory (MarketLine 2022).

The simulation expands upon the baseline scenario by tailoring the financial model for every scenario and accounting for supply chain disruption and stringent health regulations. Supply chain disruption's impact on market revenues and volumes is quantified by considering the direct effect on prices due to disruptions along the supply chain and cost increases of key raw materials.

The raw materials' impact is calculated by assuming the price increase (Trading Economics 2023b; 2023a; 2023c) for key raw materials (sugar, cocoa, wheat, and others) (BDSI 2023). Subsequently, their impact on the general gross margin across the industry (CSI Market 2023) is factored in, resulting in a final price effect of the raw materials at 11.7%. The supply chain disruptions are evaluated based on a McKinsey study, with a 5% price increase representing the impact on the EBITDA margin (Baumgartner, Malik, and Padhi 2020; CSI Market 2023).

Regarding the stricter health regulations' impact on both price increases and product demand, several factors are considered. These include a VAT increase from the current 7% to 19%

(Bundesministerium der Justiz 2006), a 10% direct rise in price due to the sugar tax (Gonçalves 2022), and a 7% decrease in overall demand attributed to an advertisement ban (Dubois, Griffith, and O'Connell 2018; Yau et al. 2022).

The raw materials and supply chain disruption's impact is calculated and applied on a year-on-year CAGR basis, ultimately determining the final figure for 2030. The simulation results combine the impacts of key uncertainties for each scenario, providing a comprehensive understanding of the potential financial landscape within the German confectionery sector. After excluding the initial baseline scenario, the price increase for the current year and the future price changes were calculated. The volumes and revenue of the market were then determined using the price elasticity of -1.35. This elasticity value was derived as an average of the price elasticity figures from the US for four major confectionery companies also operating in Germany: Lindt, Ferrero, Mondelez, and Mars (UBS Evidence Lab and Nielsen 2019).

'Sweet Symphony'

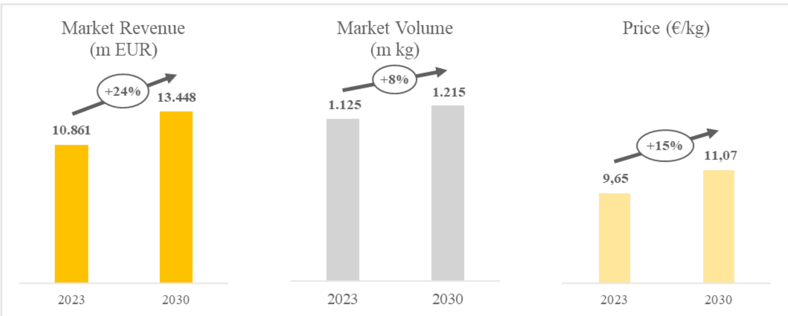

Figure 7: Financial Forecast for Revenue, Volume, and Price in 2030 for 'Sweet Symphony' | Source: Own Calculation

In this scenario, the financial outlook appears promising for the market, despite the presence of highly unfavorable uncertainties. Notably, the highly unfavorable uncertainties exert no influence on this particular scenario, further bolstering its positive course. Within this context, market volumes exhibit a steady increase, consistently growing at a CAGR of 1.1%. While the volume growth rate may be deemed moderate, the primary driver of overall market income stems from the consistent upward trend in pricing. The price trajectory remains stable, continuing to ascend at a CAGR of 1.98%. The scenario resulted in strong financial performance due to a combination of moderate volume growth and sustained price increases. As a result, market revenue showed solid growth, climbing 24% over the seven-year period.

'Sweet Chaos'

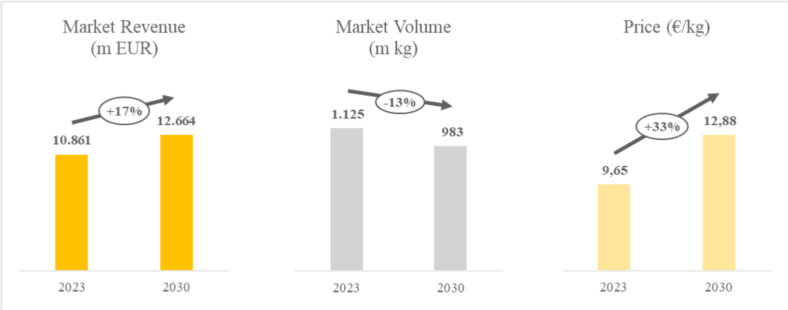

Figure 8: Financial Forecast for Revenue, Volume, and Price in 2030 for 'Sweet Chaos' | *Source: Own Calculation*

In this scenario, supply chain dynamics significantly influence the financial outlook. The scenario grapples with disruptions in the supply chain, leading to a noteworthy annual price increase of 2.23%. This additional increase compounds with the baseline price growth observed in the baseline scenario, resulting in an overall CAGR of 4.2% in prices through the year 2030. However, this considerable price increase is not without consequences. The disrupted supply chain contributes to a consequential decrease in volumes, marked notably by a decline of 13% from 2023 to 2030. Although the volumes have decreased, the scenario's resilience is evident as the robust price increase effectively mitigates the adverse impact on revenue. The combination of reduced volumes and a significant increase in prices results in an overall solid increase in market revenue. The outcome demonstrates the scenario's ability to navigate challenges, showing that the significant price increase can offset the negative impact on volume, resulting in an overall positive financial trend.

'Healthy Temptation'

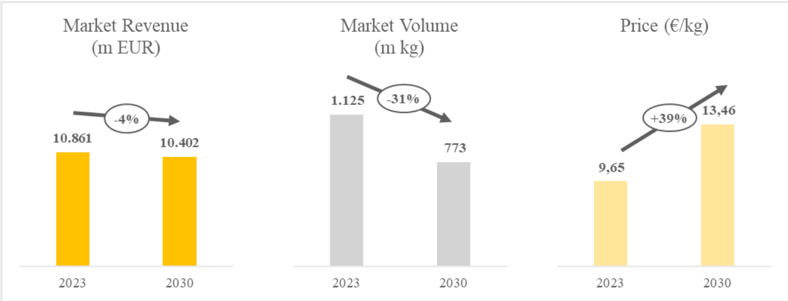

Figure 9: Financial Forecast for Revenue, Volume, and Price in 2030 for 'Healthy Temptation' | Source: Own Calculation

This scenario is characterized by the convergence of several adverse regulatory factors that affect the financial outlook. Specifically, an advertisement ban appears as a prominent driver, leading to a reduction in demand. This decrease in demand is compounded by the negative impact of both a sugar tax and an increased VAT on the pricing structure. The combined effect of these three factors results in a significant impact on the market. The market's resilience is being adversely affected by the simultaneous reduction in demand and the direct negative influence on prices, resulting in a discernible contraction in total market revenue, with a notable decline of 4% between 2023 and 2030.

'Sugar Shock'

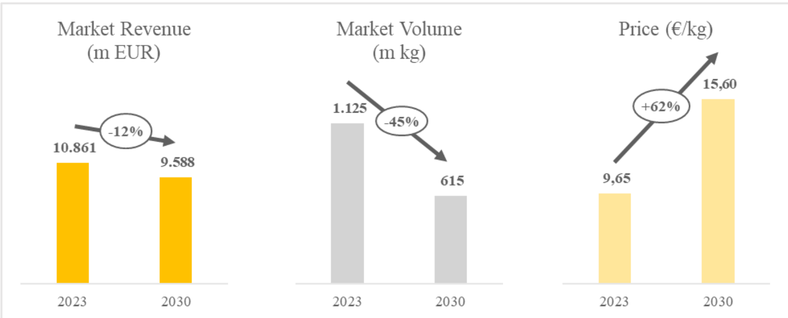

Figure 10: Financial Forecast for Revenue, Volume, and Price in 2030 for 'Sugar Shock' | Source: Own Calculation

The financial forecast presents a challenging outlook due to the impact of a disrupted supply chain and a stringent regulatory framework on the market. These factors, acting conjointly, exert direct and substantial influence on the scenario's financial outlook. The disrupted supply chain and regulatory measures have several manifestations. Issues within the supply chain, coupled with an increase in VAT and the imposition of a Sugar Tax, have led to a considerable escalation in prices. Additionally, the enforcement of advertisement bans has caused a decline in consumer demand. The price increase, which reached a significant 62% within the considered timeframe, cannot be offset by any mitigating factors, especially when compounded by a concurrent decrease in demand. This combination of factors leads to a significant and persistent decrease of 12% in market revenue.

7. Phase IV: '*Act*'

The '*Act'* phase involves translating the implications of the scenarios developed in the previous phase (Scenario Narratives) into strategic recommendations for the company (Luther and Ali 2022). This involves identifying the impact of external elements in each future developed and establishing the company's options for strategy (Scearce and Fulton 2004). To this end, the current strengths and weaknesses of Ferrero Deutschland GmbH were analyzed in the second workshop (Appendix 7) and strategic recommendations for the company were developed with the use of the TOWS matrix to secure its leading position in the German confectionery market by 2030. In addition to defining specific actions according to the characteristics of each scenario, a base strategy was developed for Ferrero Deutschland GmbH suitable for any possible

7.1.1 Scenario 1: 'Sweet Symphony'

Figure 11: TOWS Matrix for Scenario 'Sweet Symphony' | Source: Own Creation

As mentioned above, this scenario is based on two critical uncertainties: ensuring an undisrupted supply chain and strict compliance with current health regulations. The scenario narrative surrounding these uncertainties has led to the deduction of strategic implications, resulting in the development of four distinct strategies tailored for Ferrero Deutschland GmbH.

S/O Strategy: In the dynamic confectionery industry, Ferrero Deutschland GmbH stands out with its strong brand recognition and loyalty, especially in flagship products like Ferrero Rocher, Nutella, and Kinder. These brands are not only valuable but also rare, offering a significant opportunity for flavor innovation and brand expansion. Ferrero Deutschland GmbH must strategically utilize its strong brand equity and formidable capabilities in product development and innovation to introduce new flavors, expanding its product range to appeal to a broader consumer base. This approach should be underpinned by targeted research and development investments and robust marketing campaigns that highlight the quality, uniqueness, and novelty of these new offerings.

Ferrero Deutschland GmbH's brand strength enables expansion and strategic diversification into niche markets, including organic and plant-based products. The company's well-established reputation for quality and innovation acts as a link between the increasing demand for health-conscious products and conventional sweets. Ferrero Deutschland GmbH can enhance consumer confidence and reassure them that these new products meet the company's strict quality standards by leveraging its legacy of excellence in the organic and plant-based sectors. By doing this, Ferrero Deutschland GmbH guarantees that even its expansions into niche markets mirror the brand's long-standing dedication to high standards, making it well-suited to appease the discriminating palates of health-conscious consumers. In addition, Ferrero Deutschland GmbH should enter the growing market for premium and artisanal chocolates to not only address health-conscious customer groups but also those seeking luxury and gourmet chocolate experiences. The adaption of new flavors as well as the expansion into new, health, and premium-focused segments enables Ferrero Deutschland GmbH to explore new market opportunities and increase its market share while maintaining its core values. However, the company's size and established operational methods coupled with the short-lived nature of consumer trends could potentially hinder its agility in adapting its product portfolio according to evolving market trends. To address this, Ferrero Deutschland GmbH is advised to strategically collaborate with or acquire companies specializing in these niche areas. This would allow Ferrero Deutschland GmbH to swiftly integrate innovative health-conscious and more luxurious products into its portfolio, bypassing the extensive time and resources required for internal development (Behle et al. 2023b). This approach not only capitalizes on Ferrero Deutschland GmbH's commitment to quality and tradition but also ensures agility and responsiveness to consumer preferences in the dynamic health-conscious market.

S/T Strategy: To counter fierce competition in the confectionery market, Ferrero Deutschland GmbH has to implement a strategy that focuses on innovation and diversification of its flavor range while capitalizing on its strong brand equity. The company's outstanding brand recognition and its family business culture, which emphasizes tradition and quality, are key to mitigating this competitive threat. These attributes become even more significant in an industry increasingly shaped by health and sustainability regulations. By maintaining its cultural heritage and committing to high-quality products, Ferrero Deutschland GmbH not only meets but exceeds consumer expectations. This approach, coupled with strategic marketing and agility in responding to market and regulatory changes, positions Ferrero Deutschland GmbH advantageously in a complex and highly competitive landscape.

W/O Strategy: Ferrero Deutschland GmbH's strategy to innovate and diversify its product range is key in tackling competition. However, to fully capitalize on market opportunities, Ferrero Deutschland GmbH must also address internal weaknesses. Enhancing its level of digitalization is crucial in this digital era, ensuring sustained growth and competitiveness in the confectionery market. Embracing digital transformation is paramount for Ferrero Deutschland GmbH to overcome its digitalization challenges and to leverage emerging market opportunities. This initiative must span across various business areas, particularly marketing and supply chain operations. Within the marketing realm, Ferrero Deutschland GmbH must intensify its digital efforts. This includes expanding its online presence, implementing personalized marketing strategies, and leveraging real-time market analytics. Such a digital shift in marketing can significantly enhance consumer engagement and inform advertising campaigns and promotions more effectively, enabling Ferrero Deutschland GmbH to reach a wider audience and cater to diverse consumer groups. In parallel, Ferrero Deutschland GmbH's supply chain operations stand to benefit substantially from digitalization. Embracing advanced digital technologies is a proactive strategy not only to overcome digitalization challenges but also to bolster supply chain resilience and enhance demand forecasting. By integrating technologies such as AI, blockchain, and data analytics into its supply chain, Ferrero Deutschland GmbH can achieve greater efficiency and agility, crucial for adapting to rapid market changes. This holistic approach to digitalization will enable Ferrero Deutschland GmbH to harness the full potential of digital transformation, maintaining its competitive edge in the dynamic confectionery industry.

W/T Strategy: Ferrero Deutschland GmbH faces significant challenges due to its focus on traditional confectionery in the context of increasing emphasis on sustainability and the threat of climate change impacts. This specialization creates a dependency on specific ingredients, which may be vulnerable to the effects of climate change. To adapt to these evolving conditions, Ferrero Deutschland GmbH must diversify its product range to reduce reliance on certain raw materials. To mitigate the risks associated with its current focus, Ferrero Deutschland GmbH can expand into products that require different ingredients or are less sensitive to climate-related supply disruptions. This shift can also align with market trends that favor environmental responsibility and ethical sourcing. Implementing strategic changes to enhance supply chain resilience is critical. This can be achieved by sourcing from regions less affected by climate change and ensuring compliance with strict regulatory standards. Although these adaptations demand substantial investment and operational modifications, they are essential for maintaining stability in production, meeting evolving consumer expectations, and preserving Ferrero Deutschland GmbH’s market leadership in an industry increasingly prioritizing sustainability.

7.2 Cross-Scenario Strategic Action Plan

The above analysis shows many common opportunities but also threats across all four scenarios. Based on those, an overarching strategy was developed that includes specific strategic action plans that Ferrero Deutschland GmbH is recommended to follow to be properly prepared for different possible futures.

Innovation and Expansion of the core brands

Ferrero Deutschland GmbH's core brands, such as Ferrero Roche, Nutella, and Kinder are its power brands, generating the majority of total sales (Behle et al. 2023b). Thus, innovation is crucial to foster commitment to quality and taste. The most common reason people consume these traditional products is pleasure. Customers look for intense indulgence and immersive experiences when they want to treat themselves. There are different ways Ferrero Deutschland GmbH can deliver this experience to the consumer. First, they can use a multi-sensorial experience, which includes offering new and exciting tastes, appealing to the eye, or surprising through texture (Barry Callebaut 2023). According to Francisco Moreira, Chef Chocolatier in Portugal (2023), texture can make chocolate products richer, catchier, and more interesting. A product can be transformed into a completely new experience only by playing with more texture in the same flavor. Another way is through storytelling and origin. People are increasingly interested in knowing the history of products, and Ferrero Deutschland GmbH can provide this through single-origin chocolates, unique recipes linked to a specific location, or unique craftsmanship. They need to bring the culture of the product to the people. Exclusive or premium edition chocolates are also a way to deliver this experience. They can serve as good alternatives to classic editions and thus can be perfectly used for gifts or special treats (Barry Callebaut 2023).

Besides impulsive indulgence people also increasingly look for mindful indulgence, meaning products that are not only tasty but also good for their physical and mental well-being and for the planet (Barry Callebaut 2023). Therefore, Ferrero Deutschland GmbH should create a new product line that promotes a healthier image. Before developing any products, Ferrero Deutschland GmbH should carefully monitor market reception and consumer adoption patterns. This data-driven approach will inform the scope and scale of investment in research and development, enabling the creation of innovative low-sugar products that meet precise consumer needs without diluting the heritage of their established brands.

Niche Market Engagement

Low-sugar or sugar-less as well as plant-based and organic chocolate present niche markets that Ferrero Deutschland GmbH should tap into as a response to increasing regulatory scrutiny and consumer advocacy for healthier options. By doing this, Ferrero Deutschland GmbH can proactively adjust the limitations of a singular focus by acknowledging the industry trends and potential saturation within the confectionery market. This strategic shift aligns with the market's move away from products that are high in sugar, salt, or fat. This will help sustain profitability while also strengthening customer loyalty. It also supports their goal to maintain being the number one confectionery manufacturer as it increases market share and helps address a wider customer range.

There is extensive research highlighting the increased interest of consumers toward organic chocolate and an increased number of companies in the German market providing it like Rapunzel Naturkost and Ecofina. The increase in offer and demand for organic chocolate has been fueling market growth and the market is supposed to increase further which is why Ferrero Deutschland GmbH should make a move and enter it (CBI 2022b). Similarly, the plant-based confectionery market has witnessed a boom as health-aware consumers look for tasty but also healthy and sustainable products (Grand View Research 2023b). According to Research conducted by Barry Callebaut (2023), 48% of interviewed consumers think that every chocolate confectionery brand should have a plant-based, vegan, or dairy-free option. This shows that consumers are very critical of plant-based products. They demand "better for you" options without wanting to compromise on taste. This means Ferrero Deutschland GmbH should continue expanding its better-for-you snack portfolio with organic and plant-based options. In addition to the organic and plant-based market, the snacking market is also experiencing significant growth due to changing consumer eating habits (Grand View Research 2023a). Consequently, the strategic move to expand its footprint in the healthier snacking space toward organic and plant-based products is highly relevant and a key success factor. As Ferrero Deutschland GmbH owns its own snack-bar factory in Germany as of this year, it can use internal development to launch certain healthy snack bars and thus, expand its presence and product offering in the snack category. However, Ferrero Deutschland GmbH should also consider engaging in M&A activities as buying start-ups that already possess the required technology and knowledge to produce specific products can be a less resource-intensive and faster way.

Online Marketing

Another common opportunity that Ferrero Deutschland GmbH should capitalize on is online marketing. Ferrero Deutschland GmbH currently almost exclusively uses traditional marketing channels such as TV advertisements. However, online advertisement is starting to play an increasingly important role in the confectionery industry and besides that is an effective way of reaching different audiences and a wider range of people. Therefore, it is recommended that

Ferrero Deutschland GmbH shifts its advertising focus to online channels and engages influencers for product promotion through social media platforms. To appeal to health-conscious consumers, Ferrero Deutschland GmbH should consider using individuals who are associated with health, fitness, and well-being to promote their healthier product lines.

Digital Transformation of the Supply Chain and Operation

Besides digitalization efforts in marketing, Ferrero Deutschland GmbH should also transform its supply chain and operation toward more digitalization. Implementing a digitalization strategy across the supply chain and operation helps to be more efficient and reduce costs. “Even if you get your forecasting right if you haven’t got a way to automate the organization of your production waves throughout each trading day, staff end up making the right products in the right amounts but at the wrong times, which leads to food waste anyway.” (Confectionery Production 2022). Therefore, Ferrero Deutschland GmbH should invest in advanced technologies such as AI, blockchain, and data analytics tools to optimize its resource management and market analysis.

In addition, it is recommended that old tools be replaced with modern collaboration platforms that use a single source of truth data, intuitive modeling, and performance dashboards. This will improve the success of sales and operations planning by fostering collaboration between different parts of the business (Colehower 2023).

Moreover, network-wide inventory visibility can help avoid out-of-stock and overstock, reduce transportation costs, and improve customer satisfaction. By using advanced tracking technologies such as RFID, IoT sensors, and data analytics, Ferrero Deutschland GmbH can gain real-time insights into inventory levels, location, and movement, enabling it to make better data-driven decisions (Colehower 2023).

Another cutting-edge technology Ferrero Deutschland GmbH should implement to improve supply chain processes and survive disruptions is a digital twin. In times of uncertainty and constant disruption, digital twin technology improves visibility and performance in the supply chain. By using artificial intelligence and analytics, it models current supply chain states and predicts future scenarios, taking into account numerous variables and constraints. This technology assists in analyzing risk, performance indicators, demand, inventory, supplier, and sales data in supply chain management, enabling optimal decision-making. Additionally, digital twin technology boosts order fulfillment by analyzing real-time data, leading to more accurate and efficient production planning, and minimizing the risk of shutdowns (Abouzid and Saidi 2023; Koshulko 2022). A digital twin offers more benefits than merely improving Ferrero Deutschland GmbH’s supply chain processes. According to a McKinsey article by Brossard et al. (2022), implementing this technology can lead to a revenue increase of up to 10%, a decrease in time to market by as much as 50%, and an improvement in product quality of up to 25%. Due to the multitude of advantages offered by digital twin technology, it is highly recommended that Ferrero Deutschland GmbH implements it.

Sustainability and Eco-Friendly Practices

Moving on to another significant topic: Sustainability and Eco-Friendly Practices. Due to regulations, climate change impacts, and consumer expectations, Ferrero Deutschland GmbH has to continuously invest in a sustainability framework focusing on renewable energy, sustainable sourcing, and eco-friendly packaging. Investments in smart technologies are recommended to help with eco-friendly practices and waste management.

Additionally, Ferrero Deutschland GmbH is encouraged to use on-site renewable energy systems, such as solar panels or biodigesters that convert food waste into biogas, to reduce its environmental footprint while offsetting electricity costs (Iriondo-DeHond, Miguel, and Del Castillo 2018). This is because reducing food losses and waste has the potential to produce positive economic, social, and environmental outcomes. This includes enhancing food availability and accessibility whilst optimizing the sustainable use of vital natural resources.

Another eco-friendly practice Ferrero Deutschland GmbH could make use of is the application of food byproducts in the production of its ice cream. Byproducts serve two distinct purposes: a technical purpose, which includes enhancing shelf life, safety, stability, and sensory quality, and a biological purpose, which aims to augment health-promoting effects for their transformation into functional foods (Iriondo-DeHond, Miguel, and Del Castillo 2018). To give an example Ferrero Deutschland GmbH could use orange fiber as a novel fat replacer in lemon ice cream (Crizel et al. 2014) or enrichen the functional properties of ice cream with pomegranate by-products (Çam et al. 2013).

Another important strategic move in the confectionery industry is the shift toward independence, self-sufficiency, and local sourcing. To ensure success, it is advisable for Ferrero Deutschland GmbH to maintain its engagement in vertical integration by purchasing plantations to cultivate hazelnuts and other essential ingredients and prioritizing the sourcing of ingredients locally. This will provide resource availability even during disruptions and ensure product quality (Food and Beverage 2023).

Foresight Team

The final point of this strategic action plan is to create a foresight team responsible for monitoring market trends and innovations. The team will conduct market research to comprehend consumer preferences, generate an innovation monitoring report, and synchronize the report's outcomes and discoveries with all company divisions, especially with product development. Innovation monitoring enables Ferrero Deutschland GmbH to reliably track consumer trends and make swift product development adjustments, thereby reducing time to market and enhancing Ferrero Deutschland GmbH's competitive edge. The research results and findings can also be used to improve planning and develop targeted marketing campaigns. Effective communication of the findings is crucial in to ensure that all stakeholders understand the rationale behind the chosen strategies and their roles in implementation.

Objectives	Strategic Actions
Innovation and Expansion of the core brands	• Multi-sensorial experience incl. new & exiting tastes, appealing to the eye and surprising textures • Storytelling & Origin • Exclusive or premium editions
Niche Market Engagement	• Expand product portfolio for low-sugar, sugar-less, plant-based, and organic options • Further expand better-for-you snacking portfolio
Online Marketing	• Use of online advertisement channels (e.g. social media) • Influencer-marketing: Influencers that are associated with fitness, health and wellbeing
Digital Transformation of the Supply Chain and Operations	• Invest in advanced technologies for efficient resource management (e.g. tracking technologies) • Digital Twin • Modern collaboration platform that uses one source of truth data
Sustainability and Eco-Friendly Practices	• Move towards independence, self-sufficiency, and local sourcing • Use of smart software and food byproducts to reduce waste
Foresight Team	• Monitoring of market trends and innovations • Align the results with all company departments especially product development

Figure 12: Overview Strategic Action Plan | Source: Own Creation

8. Phase V: *'Monitor'*

The *monitoring* phase aims to anticipate the evolution of each scenario defined in Phase III: by identifying early indicators. Monitoring makes it possible to detect the first signs of the development of a scenario, providing valuable information about changes in the market and the growing relevance of specific implications (Scearce and Fulton 2004). Once leading indicators are identified, strategies can be implemented to respond to the emerging reality (Luther and Ali 2022). According to the Scenario Cockpit framework, after the ranges for the indicators have been defined, they should be continuously monitored to enable confectionery companies to adapt quickly, adjust strategies, and proactively navigate the dynamic landscape of evolving market scenarios (Wulf, Meissner, and Stubner 2010).

Early indicator selection

In the selection of early indicators, a predominant consideration is their alignment with specified criteria crucial for providing relevant insights into emerging scenarios. These criteria include *relevance* to envisioned scenarios, *lead time* for proactive response, *quantifiability* for objective measurement, *accuracy, and reliability* for sound decision-making, sensitivity to change for discerning subtle shifts, and *accessibility* for practical implementation. The meticulous adherence to these criteria ensures the chosen indicators harmonize with the intricacies of envisioned scenarios, providing decision-makers with timely, accurate, and actionable insights. Based on these criteria the following early indicators were identified:

‘Consumption of antidiabetic drugs’: The rise in diabetes, which affected 10 percent of the population in Germany by 2021 is expected to continue to rise and thus presents another public health concern. This situation puts more pressure on the German healthcare system and increases the costs associated with treating the disease (International Diabetes Federation 2021). Given that the rise in diabetes is often accompanied by a rise in obesity rates, food regulation, particularly on products high in sugar and calories such as confectionery, can be a major factor in slowing the rise in diabetes rates (Watts 2022). It is, therefore, necessary to monitor the use of antidiabetic drugs, as it provides information on the prevalence and management of diabetes in the population, and an increase above the predicted level (Appendix 8) should indicate the need for more stringent public health measures.

‘Healthcare spending’: Another relevant indicator that has a major impact on policy decisions and the implementation of more restrictive and effective measures is the cost of the health system (Appendix 9). Non-communicable diseases, many of which are the result of unhealthy eating habits, have a high cost to the German state, especially as they are long-term conditions that require treatment over many years. This therefore is an early indicator of the need to change legislation to reduce these high-cost diseases. In addition to saving lives, measures taken to lower risk factors for various diseases, such as eating unhealthy foods, can also greatly improve a nation's economic standing (WHO 2023a).

‘Sunday Federal Assembly Poll’: The way the rules are applied is also heavily influenced by the political forces that govern the country. That is why it is important to look at Sunday's Federal Assembly Poll (every Sunday, German national television broadcasts opinion polls on the results of the elections if they were held that day – Appendix 10) and see what the reality will likely be in Germany's upcoming elections in 2025 and 2029. The change of government is an opportunity

to introduce new policies aimed at adapting the food market and improving children's health. Both the Social Democratic Party (SPD) and the Greens Party are committed to taking effective action against childhood obesity by regulating the advertising of unhealthy foods, especially those targeted at children (Dahm 2021). Looking at the weekly polls, if the Green Party and the Social Democratic Party (SPD) together get enough votes to govern (more than 40% of the vote in their favor) in close proximity to new elections, then the most likely reality is that stricter health measures will be implemented (Wahlrecht 2023).

'Rising temperatures in raw material regions': The majority of nations committed in the 2015 Paris Agreement to limiting global warming to a rise in mean global temperature of no more than +1.5°C by 2030 compared to pre-industrial levels (1850-1900) (Jones 2023). This warming causes extreme weather and affects agricultural production. In the case of the confectionery industry, the rise in temperature is particularly relevant to control in cocoa-producing nations like Ghana, Côte d'Ivoire, and Nigeria as increasing temperatures negatively affect vital moisture levels (Masson-Delmotte et al. 2022). Escalating and surpassing predictions of climate change will intensify the occurrence of extreme weather events, such as droughts. To understand whether production in these countries could be at risk in the future, a projection of the expected increase in temperature levels was made for each of these countries (Appendix 11), making it easier to monitor this indicator of possible abnormalities and disruptions to these raw materials.

'Cocoa Price': Another indicator that provides relevant information about the availability and quality of cocoa on the market is price. The price of cocoa has risen significantly, reflecting the global supply shortage caused by unfavorable weather conditions in the growing areas. Heavy rains out of season and disease have affected the quality of this raw material, reducing its availability (Trading Economics 2023a). To determine if the disruptions will become a permanent reality, the price of cocoa has been forecasted for the next few years (Appendix 12) and should be monitored. This will help to understand the evolution of the uncertainty that is

affecting the supply chain.

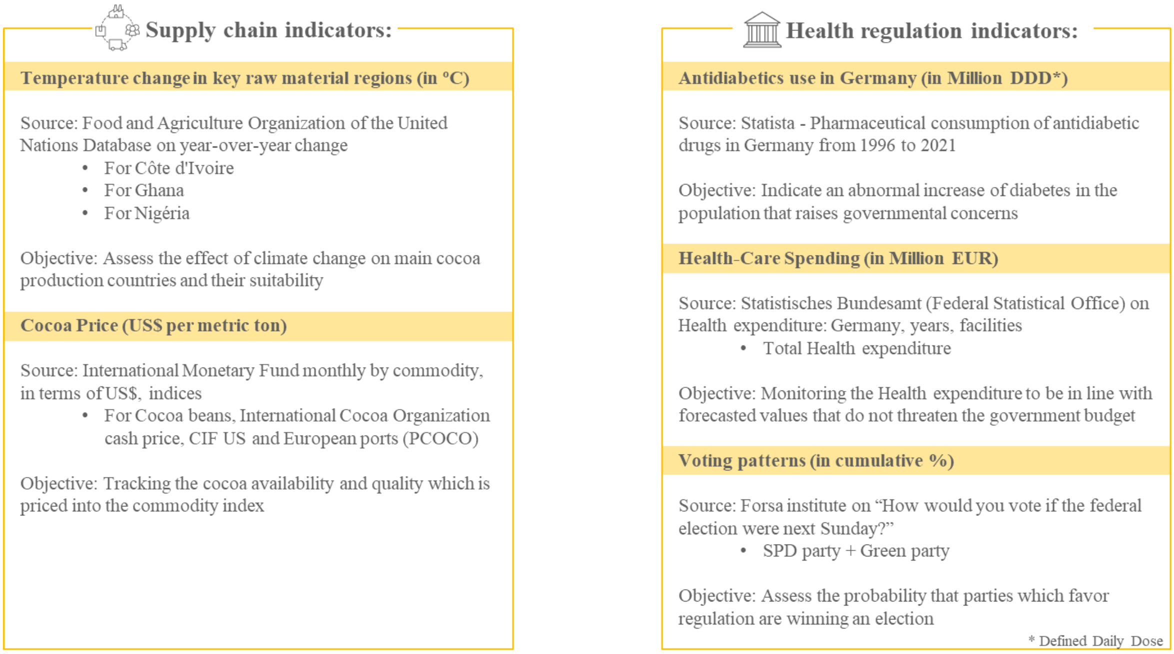

Figure 13: Overview of Early Indicators for Supply Chain and Health Regulations | Source: Own Creation

Value range determination

In determining value ranges for early indicators, the second systematic step of the scenario cockpit approach is employed (Wulf, Meissner, and Stubner 2010). This involves developing thresholds based on identified underlying trends for each indicator. Projected annually until 2030, these trends serve as benchmarks for assessing deviations (Appendix 8, Appendix 9, Appendix 10, Appendix 11, and Appendix 12). Thresholds indicate a change of direction from these trends, acting as triggers for potential shifts toward future scenarios. Notably, precise value thresholds are provided for all indicators and scenarios for 2025, 2027, and 2029. The following thresholds are indicating the development toward a scenario:

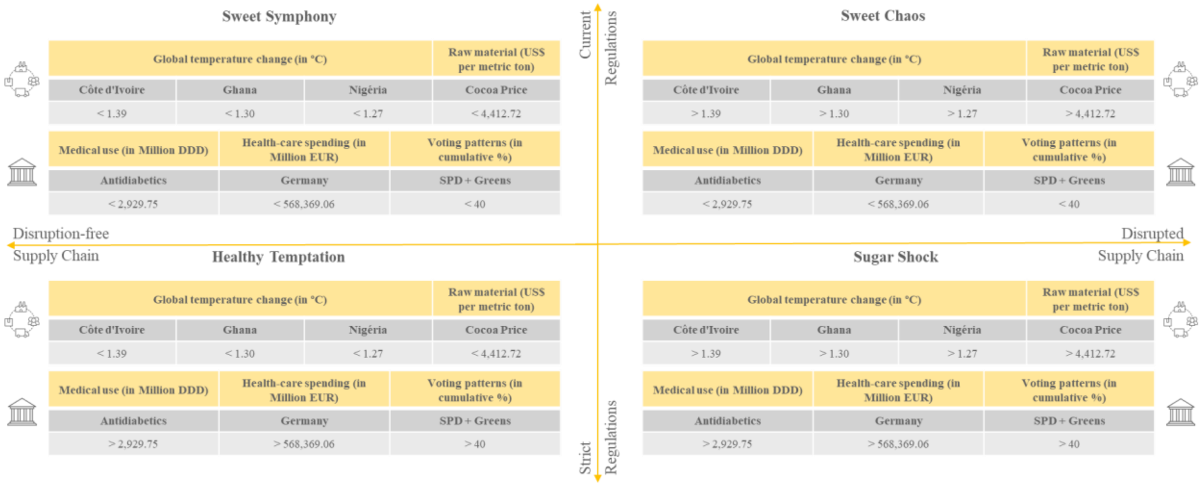

Figure 14: Monitoring thresholds for 2025 | Source: Own Creation

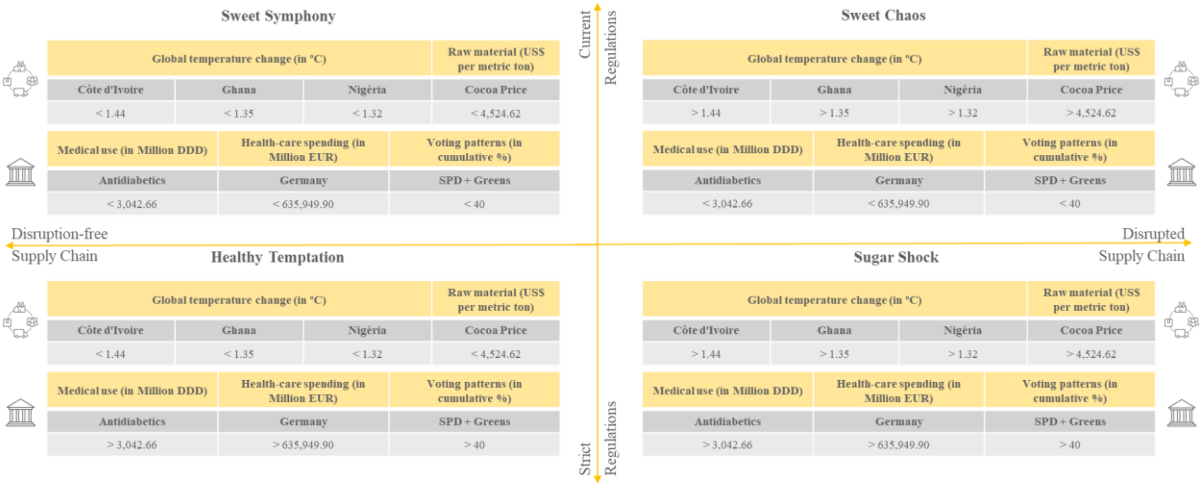

Figure 15: Monitoring thresholds for 2027 | Source: Own Creation

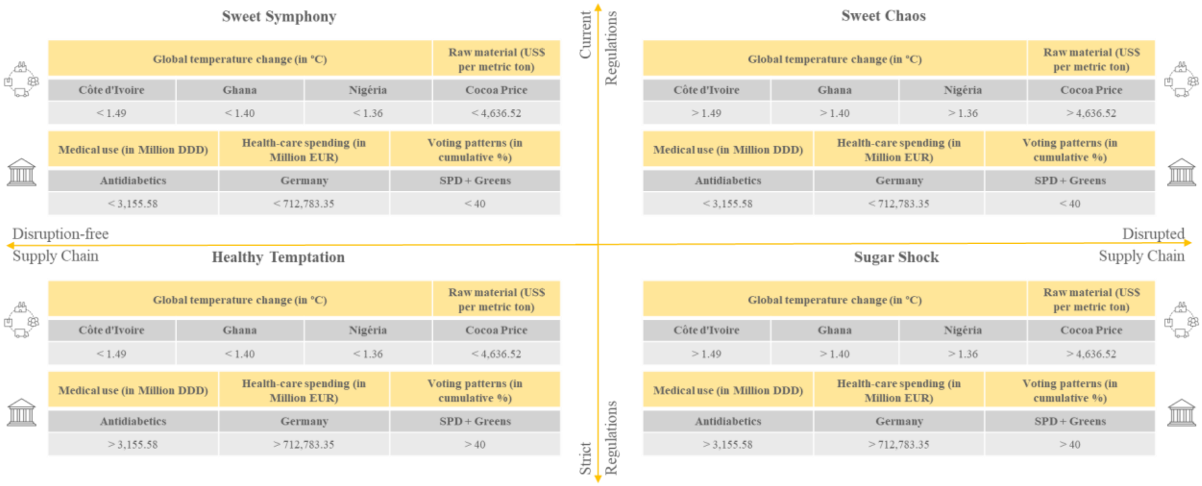

Figure 16: Monitoring thresholds for 2029 | Source: Own Creation

Constant monitoring

The third step in the Scenario Cockpit approach, constant monitoring of early indicators, is an indispensable practice for effective strategic planning and organizational resilience. Therefore, indicators for 2025, 2027, and 2029 are provided in order to continuously assess the current trend toward one scenario. This ongoing monitoring process serves several critical purposes.

Firstly, it ensures an agile response to changes in the business environment. By continuously tracking early indicators, decision-makers and management can swiftly adapt strategies in response to emerging trends or potential disruptions. The timeline of this approach is crucial for addressing challenges and capitalizing on opportunities effectively.

Moreover, constant monitoring provides decision-makers and management with timely information about the development of uncertainties, allowing for informed and proactive decision-making. Early indicators serve as precursors to significant developments, offering a window of opportunity for organizations to navigate potential challenges posed by the key uncertainties.

Strategically, continuous monitoring empowers organizations to adapt their strategies in response to the most likely scenarios. This flexibility gives businesses a competitive advantage in the marketplace and helps them maintain their leading position.

9. Conclusion

This work project focused on exploring the future of the German confectionery market, which faces multiple challenges arising from changing consumer preferences, government policies, and product innovation. Using the qualitative scenario planning methodology, '*Intuitive Logic School'*, and insights from industry experts, four plausible scenarios for 2030 were created and different strategies were defined for Ferrero Deutschland GmbH to remain profitable and retain its loyal consumer base.

To better understand how the industry will evolve in the coming years, several trends have been identified, including the evolution of health challenges as people's diets and lifestyles change, the shift toward more sustainable and environmentally friendly solutions, and the greater integration of technological solutions in the industry. Further, relevant and common to all scenarios are the growing health awareness of consumers and their changing ideals of sustainability and business ethics. However, the complexity and dynamism of the sector is also a result of the many uncertainties it faces, particularly *'Stability of Supply Chain'* and *'Health Regulations'*, which have a very high level of uncertainty and impact on the future of the German confectionery market.

To respond to the evolution of the external environment, there are general strategies that Ferrero Deutschland GmbH should adopt, such as focusing on niche markets, adopting more sustainable practices, or investing in digital transformation. In addition, the company should thrive in a balanced confectionery market that celebrates tradition and well-being, as in the '*Sweet Symphony'* scenario, through diversification of its specialty products and expansion into sustainable and low-sugar options. Alternatively, if Ferrero Deutschland GmbH wants to continue to meet the demand for its traditional products in the face of unchanged health measures and ongoing supply chain disruptions in the *'Sweet Chaos'* scenario, it will need to stick to its core products, search for alternative suppliers and find substitute/alternative ingredients. Despite the absence of supply disruptions, in the *'Healthy Temptation'* scenario, health regulations become stricter, increasing the demand for healthier alternatives, and forcing Ferrero Deutschland GmbH to explore new products and markets to compensate for the decline in demand for its traditional products and the high cost of sugar. Faced with rising product prices due to stricter health regulations and supply chain disruptions in the *'Sugar Shock'* scenario, the company's strategies for coping with declining demand for confectionery include expanding into new market segments and building M&A capabilities to reduce external dependency and diversify in the face of market conditions.

Finally, some relevant indicators have been identified to help companies adapt and implement different strategies according to how these indicators evolve, enabling them to maintain a competitive edge in the market.

In conclusion, this research has highlighted the complex environment in which German confectionery companies operate and the need for Ferrero Deutschland GmbH to understand the possible directions of change and be prepared to evolve with them in order to remain at the forefront.

10. Limitations and Further Research

This report analyzes the potential development of the German confectionery industry until 2030 using scenarios based on the *'Intuitive Logic School'*. It is suggested that other scenario planning techniques should also be considered to compare outcomes for the confectionery sector. In addition, it is important to recognize the potential for unexpected disruptive events, such as black swan events, even if their probability is low, as they can have a significant impact on the confectionery industry. This may require the reformulation of scenarios. In addition, the strategic implications workshop was conducted exclusively with Ferrero Deutschland GmbH. As the company specializes in chocolate confectionery, the experts' opinions are mainly related to this product category. In order to ensure a more comprehensive analysis, it is recommended to work with experts from different segments of the industry at this stage in order to include a wider range of perspectives in future research. Also, the regulations discussed in this report apply exclusively to the German confectionery market. However, it is important to consider that European Union legislation targeting confectionery would also affect the German market and should be taken into account when conducting further research.

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12. Appendix

Appendix 1 – Overview of the cooperation between the broader competence teams

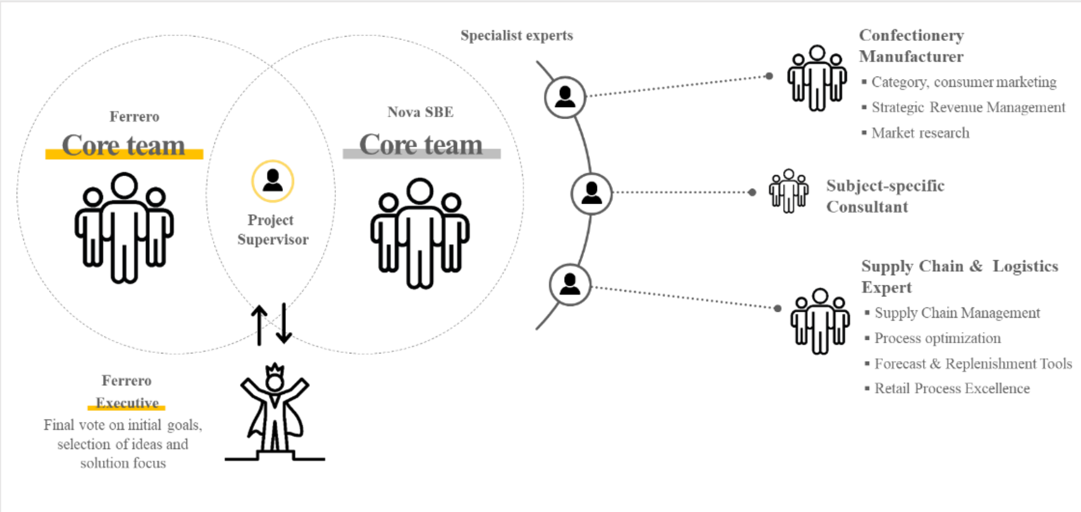


Figure 17: Client and Expert Involvement | Source: Own Creation

Appendix 2 - Description of Uncertainties

Table 2: Uncertainties | Source: Own Creation

Uncertainty	Description
'Global Trade Policies'	The confectionery market is remarkably diverse, highlighting the sector's inherent vulnerability to global trade dynamics (MarketLine 2022). Changes in trade agreements, tariffs, and trade barriers can significantly impact the import and export of key raw materials, ingredients, and finished products (Amighini et al. 2023). Despite global supply chain issues and international trade concerns, such as those arising from the conflict in Ukraine, the confectionery export sector, a key element of the German confectionery and snacks industry, showed resilience in 2022, as evidenced by the 11.5% increase in export sales to around €10.3 billion (Confectionery Production 2023a). Trade policy disruptions can also affect the competitiveness of confectionery products, leading to potential changes in price dynamics and adjustments in the market positioning of different products. For example, Brexit has led to a 1.6% drop in German chocolate consumption in the UK, largely due to increased logistics costs and additional administrative burdens. (Myers 2023a). While the German confectionery market has historically benefited from the European single market, it must now adapt to the evolving international trade landscape, particularly in response to growing consumer demand for fair trade suppliers (MarketLine 2022).

Uncertainty	Description
'Health Regulations'	The confectionery industry is under increasing regulatory scrutiny due to increased political awareness of lifestyle issues and World Health Organization recommendations to prevent young people from the adverse consequences of eating foods high in fat, salt, and sugar (WHO 2023d). As highlighted in Sub-trend 1.1 of Megatrend I several countries, including countries in Europe, have already introduced measurements such as advertising restrictions or sugar taxes on soft drinks to reduce the consumption of HFSS products. Although there is a growing concern about increasingly restrictive international measures limiting the advertising and sale of products with high sugar content, it is not yet clear what specific measures the German government will take and how companies in the sector will adapt.
'Consumer Spending Power'	Consumer spending power is a key driver of product demand and pricing strategies in the confectionery sector (Hayes 2023a). In particular, favorable economic conditions and an upward trend in household purchasing power have contributed to moderate market growth from 2016 to 2021 (MarketLine 2022). In other words, the more money people have at their disposal, the more likely they are to buy more expensive goods, including premium dark chocolate (Choudhury 2022; MarkWide Research 2023). As a result, monitoring changes in disposable income and the evolution of consumer preferences is essential to understanding the evolving dynamics of the market. Although a slight increase in confectionery consumption is expected in Germany with projections of an average of 24.6 kilos consumed per capita by 2026, there is increasing uncertainty around consumer purchasing power, as evidenced by the escalation observed in the consumer price index (Statista 2023b, 2023c).
'Global Economic Stability'	Economic fluctuations and global financial crises can significantly alter consumption patterns and affect the overall performance of the confectionery industry (Adrian 2021). These fluctuations often lead to a recalibration of consumers' discretionary spending and and a reduction in non-essential consumption, including confectionery. Globally, 53% of consumers are actively trying to reduce their spending on food and drink (Confectionery Production 2023b). The growing financial pressures on German confectionery companies, which influence their operational decisions, are unpredictable and increasingly recurring, as are armed conflicts, pandemics and extremist political forces, whose impact on the economy is difficult to anticipate (Confectionery Production 2023b; Euromonitor 2023). Furthermore, the stability and prospects of the industry will continue to be severely impacted by location-related burdens such as labor costs, taxes, and administrative complexity (Myers 2023c).

Uncertainty	Description
'Stability of Supply Chain'	Supply chain disruptions have highlighted the vulnerability of the German confectionery industry, which relies on external suppliers for the majority of its raw materials (MarketLine 2022). However, unpredictable weather patterns and environmental changes could affect the availability and quality of these resources, increasing pressure on the industry's production capacity. The nuances of the supply chain are further complicated by recent upheavals in the global geopolitical landscape, such as the Russia-Ukraine conflict, which has led to potential trade restrictions and logistical challenges for the industry (Myers 2022). The scarcity of critical raw materials, combined with rising energy and transport costs, has put enormous pressure on manufacturers to find alternative solutions to ensure a consistent supply of resources (Economic Times 2023). The stability of the supply chain is increasingly uncertain, with varying degrees of impact, due to these external factors that are potential sources of disruption.
'Commodity Price Volatility'	Commodity price volatility is a complex challenge with uncertain implications, characterized primarily by the unpredictability of future price levels. In recent years, disruptions in global supply chains, fluctuating demand patterns, and the complex geopolitical landscape have amplified commodity price volatility. This has significant effects on a number of industries, including consumers' daily lives (ChAI 2022). For the German confectionery industry, the impact of this volatility is evident in the significant increase in raw material prices and increased expenditure on energy, logistics, and packaging materials (Myers 2021). The confectionery sector is vulnerable to the volatility of key ingredients such as cocoa, which is affected by weather conditions, geopolitical unrest in producing regions, and changes in global demand (Zucchi 2021). Similarly, sugar price volatility is influenced by several factors, including weather patterns affecting crop yields, trade policies, and demand for alternative sweeteners (Amrouk and Heckelei 2020). Fluctuations in commodity supply and demand and climate change are unpredictable and are responsible for this uncertainty in the sector.
'E-Commerce'	Online retailing is transforming the marketing and distribution of confectionery products. In Germany, the growth of online sales has led to increased sales for manufacturers and a more diverse customer base. (Mordor Intelligence 2023). According to the German Retail Association, the online grocery business, which includes confectionery sales, secured a market share of 2.7% in 2021 (Taxfba 2022). However, the online sales in the confectionery industry in Germany, while showing promising growth, are not yet as significant as in other sectors. This is mainly because confectionery is mostly an impulse purchase for immediate consumption and consumers are not yet prepared to wait for delivery times (Livingston 2022). Although the trend toward e-commerce is clear, the extent to which it will become more relevant and how it might reshape consumer expectations and behaviors in the digital realm and thus the confectionery industry's distribution channels remain uncertain.

Uncertainty	Description
'Alternative Sweeteners and Production Methods'	The confectionery industry, driven largely by technological advances and changing consumer preferences for healthier alternatives, is undergoing significant changes in sweetening methods and production techniques (Confectionery Production 2021). Nevertheless, technological advances in the development of alternative sweeteners that can change the formulation of confectionery products are uncertain (McKenzie and Lee 2022). Confectionery manufacturers are increasingly looking for alternative sweeteners in product lines and ways to reduce sugar (Confectionery Production 2021). However, consumer preferences are constantly changing and currently favor the uptake of plant-based alternatives, which limits the development of new alternatives and it is unknown how the market would react (Foodware 365 2021).
'Climate Change Impact'	Climate change is undeniable, and its effects are increasingly visible, even if they remain uncertain. The main problem the German confectionery industry is facing is that it heavily depends on natural raw materials sourced exclusively from regions classified as climate-vulnerable (Umweltbundesamt 2021). This could lead to import risks for German companies, especially for raw materials found exclusively in these countries (Nieburg 2017). The confectionery industry's dependence on specific regions (cocoa only grows in what is known as the "chocolate belt") for raw material supplies increases its vulnerability to weather-related disruptions, leaving manufacturers vulnerable to supply chain constraints and price fluctuations (Mccarthy 2018). This ambiguity makes it difficult for the industry to anticipate future impacts on the availability and quality of key raw materials, leading to ongoing difficulties in predicting potential disruptions and price changes in the supply chain.
'Packaging Innovations'	The confectionery industry is facing a period of uncertainty as it navigates the evolving trends in packaging innovation, driven by both government regulations and consumer preferences. Environmentally friendly packaging materials such as paper and bioplastics are becoming increasing (Sutaria 2023). However, it is not yet clear whether most packaging will be paper, as it is disposable. At the same time, there is still uncertainty as to whether the reuse and refilling of packaging can be made legally compulsory in Germany, as is already the case in EU countries such as France (Carbinato, Deryckere, and Shiran 2023). Convenience packaging, such as returnable and portion-controlled packaging, is also gaining in popularity, with consumers looking for on-the-go snacking options. However, the integration of these new alternatives is still unclear, mainly due to the higher costs they represent for confectionery companies (Sutaria 2023). Packaging innovation is being driven in an unknown direction by doubts about what confectionery products will look like in the future or about new packaging regulations for these food products.

Uncertainty	Description
'Food Labeling Laws'	The industry is navigating this uncertainty with a strong focus on adapting to evolving food labeling rules and requirements, particularly those related to health claims and nutritional information (BMEL 2023). The lack of mandatory rules common to all EU Member States means that there are wide variations in product labeling (Confectionery Production 2022). As a result of pressure from various industries, particularly the German confectionery sector, the European Commission's Farm to Fork Strategy has emerged, proposing mandatory and harmonized front-of-pack nutrition labeling to help consumers make informed and healthier food choices (European Commission 2023; Myers 2023b). Despite this progress, the implementation and impact of it is still unknown, new labels may emerge in response to changes and new consumer demands for healthier and more sustainable products, so it is still difficult to see how food labelling laws will evolve.

Appendix 3 – Survey: Uncertainties in the Confectionery Industry

The following text was used to introduce participants to the topic:

"Umfrage: Unsicherheiten in der Süßwarenindustrie

Liebe Teilnehmer, Liebe Teilnehmerinnen,

wir sind eine Gruppe von Studenten der Nova School of Business & Economics in Lissabon. Im Rahmen unserer Masterarbeit beschäftigen wir uns mit der möglichen Entwicklung der Süßwarenindustrie in Deutschland. Um ein möglichst holistisches Bild der Zukunft bilden zu können, werden vier mögliche Szenarien für das Jahr 2030 entwickelt.

Die Entwicklung der vier Szenarien basiert auf zwei Faktoren, welche den höchsten Einfluss auf die Entwicklung der Süßwarenindustrie haben und deren zukünftige Entwicklung noch nicht absehbar ist. (Bsp. Werden sich Verbraucherpräferenzen und -verhalten bezogen auf Süßwaren ändern?)

Gerne möchten wir Sie bitten, an dieser Umfrage teilzunehmen, um uns zu helfen, die potenziellen Faktoren zu bewerten und zu priorisieren. Die Umfrage besteht aus einer Liste von Faktoren, die nach deren Einfluss auf die Süßwarenindustrie bis zum Jahr 2030 und deren Unsicherheit bewerten werden sollen.

Die Bewertung des Einflusses und der Unsicherheit erfolgt jeweils anhand einer Skala von 1 bis 10:

- *Einfluss: 1 – „Sehr geringer Einfluss" bis 10 – „Sehr hoher Einfluss"*
- *Wahrscheinlichkeit des Eintritts: 1 – „Sehr geringe Wahrscheinlichkeit" bis 10 – „Sehr hohe Wahrscheinlichkeit"*

Die Umfrage dauert etwa 7 Minuten. Ihre Antworten werden anonym behandelt und werden ausschließlich im Rahmen dieser Masterarbeit verwendet.

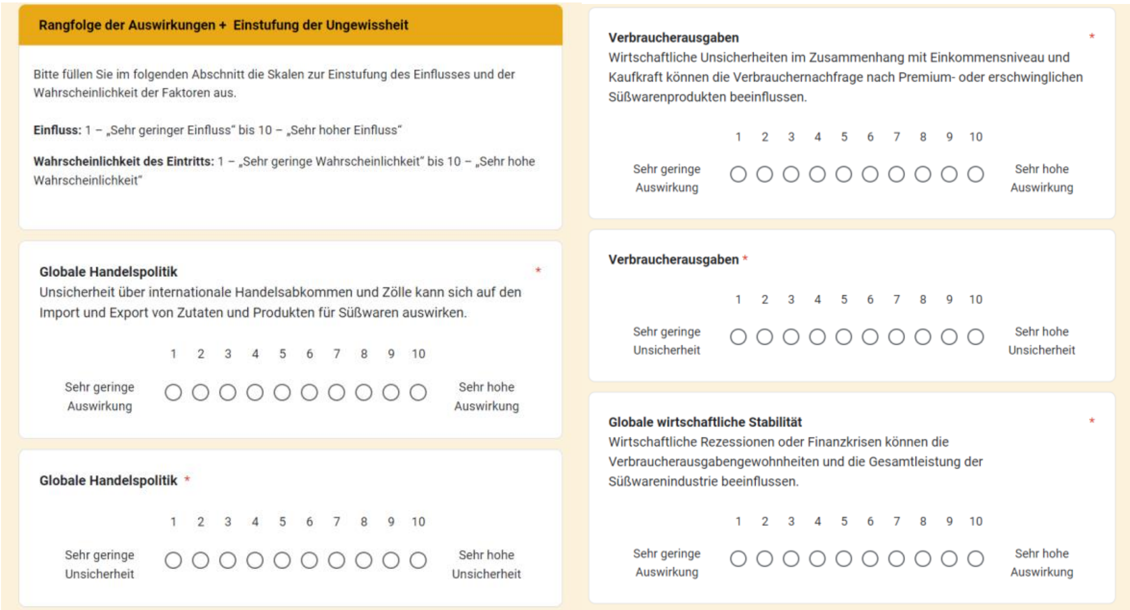
Ihre Meinung ist für uns sehr wichtig und wird uns helfen realistische und relevante Szenarien zu entwickeln!

Vielen Dank für Ihre Teilnahme an unserer Umfrage. Sollten Sie Fragen oder Anmerkungen haben, können Sie uns gerne unter 55899@novasbe.pt kontaktieren.

Beste Grüße,

Max, Rita, Franceso, Chantal, Janis"

The survey was conducted in German. The uncertainties considered in this form are those set out in Table 2: Uncertainties | Source: Own Creation.



Rangfolge der Auswirkungen + Einstufung der Ungewissheit

Bitte füllen Sie im folgenden Abschnitt die Skalen zur Einstufung des Einflusses und der Wahrscheinlichkeit der Faktoren aus.

Einfluss: 1 – „Sehr geringer Einfluss" bis 10 – „Sehr hoher Einfluss"

Wahrscheinlichkeit des Eintritts: 1 – „Sehr geringe Wahrscheinlichkeit" bis 10 – „Sehr hohe Wahrscheinlichkeit"

Globale Handelspolitik *

Unsicherheit über internationale Handelsabkommen und Zölle kann sich auf den Import und Export von Zutaten und Produkten für Süßwaren auswirken.

1 2 3 4 5 6 7 8 9 10

Sehr geringe Auswirkung – Sehr hohe Auswirkung

Globale Handelspolitik *

1 2 3 4 5 6 7 8 9 10

Sehr geringe Unsicherheit – Sehr hohe Unsicherheit

Verbraucherausgaben *

Wirtschaftliche Unsicherheiten im Zusammenhang mit Einkommensniveau und Kaufkraft können die Verbrauchernachfrage nach Premium- oder erschwinglichen Süßwarenprodukten beeinflussen.

1 2 3 4 5 6 7 8 9 10

Sehr geringe Auswirkung – Sehr hohe Auswirkung

Verbraucherausgaben *

1 2 3 4 5 6 7 8 9 10

Sehr geringe Unsicherheit – Sehr hohe Unsicherheit

Globale wirtschaftliche Stabilität *

Wirtschaftliche Rezessionen oder Finanzkrisen können die Verbraucherausgabengewohnheiten und die Gesamtleistung der Süßwarenindustrie beeinflussen.

1 2 3 4 5 6 7 8 9 10

Sehr geringe Auswirkung – Sehr hohe Auswirkung

Figure 18: Overview of the Survey | Source: Own Creation

														14:42	Average
Impact	Globale Handelspolitik	7	6	10	8	6	8	8	7	9	8	8	8	7	8	7.71
Uncertainty	Globale Handelspolitik	6	8	7	8	4	8	6	6	9	6	3	8	7	6	6.57
Impact	**Gesundheitsvorschriften**	**8**	**9**	**10**	**10**	**3**	**8**	**10**	**8**	**5**	**7**	**10**	**9**	**8**	**9**	**8.14**
Uncertainty	**Gesundheitsvorschriften**	**9**	**10**	**10**	**10**	**8**	**8**	**8**	**7**	**7**	**9**	**6**	**10**	**7**	**7**	**8.29**
Impact	Verbraucherausgaben	8	3	9	7	6	9	4	4	8	8	9	8	8	6	6.93
Uncertainty	Verbraucherausgaben	8	5	9	7	6	9	4	4	7	4	5	8	8	4	6.29
Impact	Globale wirtschaftliche Stabilität	9	3	9	8	4	9	5	5	7	5	6	9	8	6	6.64
Uncertainty	Globale wirtschaftliche Stabilität	9	8	9	8	7	9	5	6	7	6	5	9	8	5	7.21
Impact	**Störungen in der Lieferkette**	**10**	**10**	**7**	**10**	**9**	**9**	**9**	**8**	**9**	**7**	**8**	**10**	**5**	**8**	**8.50**
Uncertainty	**Störungen in der Lieferkette**	**10**	**7**	**7**	**10**	**9**	**9**	**8**	**6**	**8**	**3**	**5**	**10**	**6**	**8**	**7.57**
Impact	**Preisvolatilität bei Rohstoffen**	**9**	**7**	**8**	**10**	**7**	**9**	**10**	**7**	**9**	**8**	**9**	**8**	**7**	**8**	**8.29**
Uncertainty	**Preisvolatilität bei Rohstoffen**	**9**	**7**	**8**	**10**	**7**	**9**	**10**	**6**	**7**	**5**	**6**	**8**	**8**	**8**	**7.71**
Impact	Digitalisierung des Einkaufens	3	5	3	10	7	7	10	7	3	3	6	8	9	2	5.93
Uncertainty	Digitalisierung des Einkaufens	3	3	3	10	9	7	10	5	3	1	4	10	10	1	5.64
Impact	Alternative Süßstoffe und Produktionsmethoden	5	3	6	2	7	6	5	4	5	8	9	7	6	7	5.71
Uncertainty	Alternative Süßstoffe und Produktionsmethoden	5	3	5	2	3	6	9	3	5	5	3	7	6	7	4.93
Impact	**Klimawandel-Auswirkungen**	**10**	**6**	**8**	**10**	**10**	**9**	**9**	**9**	**6**	**8**	**9**	**8**	**8**	**6**	**8.29**
Uncertainty	**Klimawandel-Auswirkungen**	**10**	**4**	**8**	**10**	**9**	**9**	**9**	**7**	**7**	**5**	**7**	**8**	**8**	**6**	**7.64**
Impact	Verpackungsinnovationen	8	6	3	8	3	8	6	6	4	7	9	9	7	8	6.57
Uncertainty	Verpackungsinnovationen	8	3	3	8	2	8	10	3	4	5	6	9	6	8	5.93
Impact	Lebensmittelkennzeichnungsgesetze	8	6	4	8	3	8	8	8	3	5	10	10	7	5	6.64
Uncertainty	Lebensmittelkennzeichnungsgesetze	8	7	2	8	6	8	8	3	3	5	5	10	7	4	6.00

Figure 19: Results of the survey | Source:Own Creation

Appendix 4 - Expert Interviews

INTERVIEW 1

Interview date: 15.11.2023 I Interviewer: Chantal Weber

1. CONTEXT: PERSON & BACKGROUND

Name: Thomas Elfinger

Role: Deloitte Germany Consultant, before: Supply Chain Manager at different German Retailers

Connection with the topic:

- Focus Areas: Forecast & Replenishment, Supply Chain Management
- >7 years of work experience with different German retail/wholesale companies; Deponent and an analyst in the supply chain management for sweets & beverages

2. MARKET DYNAMICS & TRENDS

What do you think are the most relevant market dynamics and trends in the confectionery industry now and in 7 years?

The confectionery market has been constantly changing, so I would start with:

- Inflation
- Corona and everything around it
- Independence in distribution channels and so forth, which has intensified even more. This includes how many rely on their own logistics and how much external logistics are needed.
- Companies are asking themselves, 'How can I broaden my horizons?'
  - The confectionery industry is not growing much anymore, meaning the price competition and such will continue to increase. There's a push to gain market share.
  - People themselves, I believe it's proven, will not eat much more sweets. So, the question and new focus is how you present the sweets and create an experience for consumers so that they buy from you and get a cool feeling.
  - Two sides: creating an experience through advertising pressure vs. cost pressure (producing as efficiently as possible).
  - On the other hand, you must manage to produce as efficiently as possible and deliver good quality and sustainability, and that's the challenge.
  - Especially non-refrigerated products are easier in terms of efficiency.

Classic confectionery manufacturers are increasingly moving toward healthy snacks and expanding their product portfolio. Do you see that too?

- Yes, it's happening slowly. They're trying to establish a second line of business, but as of now, it's not efficient enough, not covering costs. No profit is being made, so the old products are still the cash cows.
- The assortment must be broadened in the next 3 to 10 years.
- As I said, sales are down, and other products will decline, so there's a need to broaden the range, especially due to challenges like rising costs.

- Many small retailers will not survive but will be bought out by larger ones, as is common elsewhere.

Do you think that in 7 years, classic sweets, like Ferrero's chocolate, will still be the big cash cow, or do you think healthy snacks will have caught up and become the big money-makers?

- I can't imagine much will have changed in 7 years. I'd be very surprised if it happened quickly; the industry is not that fast-moving.
- Maybe in 20 years.
- It depends on what happens with external factors, such as government incentives, to push products and achieve climate goals. Cost increases are also relevant here.
- Currently, everything is delivered by truck. I'm sure that will still be the case in 7 years, but politics will try to increase costs to create alternatives. Everyone has to think about this, but I believe we will see little change in the next 7 years because there is no alternative yet.

3. SCENARIO VALIDATION

[Presentation of the scenario matrix and the key uncertainties.]

Does our comparison make sense to you?

Of course, it's completely correct to think in this direction. With these 4 anchor points, it's right, but I believe it only shows that the challenges and requirements will grow, and more bureaucratic effort will come. But I think there will still be enough loopholes next year. Products must be expanded and respond to customer preferences. But no huge changes will come within the next 7 years.

Scenario 1: *What could the supply chain look like in 7 years? Which raw materials might be most affected by something like climate change? Resource scarcity – where could there be difficulties?*

- Small companies must ensure they secure capital, as rising interest rates are currently a big problem. Then it will probably only be possible through takeover or acquisition.
- Small companies can especially benefit if they are taken over by an international company. With regionalism and sustainability, they can differentiate themselves.
- I believe that's a big opportunity for the market, to focus on more regional and healthier products in the next 7 years. Own cultivation and therefore not having to import and being self-sufficient. This works with pooling, acquisition, and capital formation. Attempts are also being made to produce products through only one company and in-house to significantly reduce import paths and move toward sustainability. Independence, that's the key.

Can you imagine that in the next 7 years, especially since you say transport paths should be reduced, there will be an attempt to source more locally?

- Definitely! That works, but of course, only if the price-performance level is right, and that is currently the biggest problem and challenge.
- It's necessary to create mass through acquisitions first, and as I have said, it will stay with trucks for the next 7 years but hopefully more within Germany instead of Europe.

You say that prices are a big problem because otherwise, more local sourcing would be done. Do you think the EU or the German government could somehow support this?

- Yes, we need investments that increasingly promote regional products.
- For example, toll fees, and tariffs for Asia/USA could be increased to create more incentives.

INTERVIEW 2

Interview date: 15.11.2023 I Interviewer: Chantal Weber

1. CONTEXT: PERSON & BACKGROUND

Name: Adnana Osmanbašić

Role: Deloitte Germany Consultant from Norway

Connection with the topic:

- Forecasting and Management Reporting Experience
- Consulting project with a leading Norwegian confectionery & snacks manufacturer
    - Project**:** Development of a dynamic planning tool, capable of accommodating multiple drivers that impact various planning scenarios and KPIs. Tool for best- and worst-case scenarios

2. MARKET DYNAMICS & TRENDS

What do you consider to be the most relevant market dynamics and trends in the confectionery industry? (now, in 7 years)

- The company focused on innovation in the past
- However, Profits come from a few winning products
- The products that are selling and account for most of the profits are the rather unhealthy traditional products - focus on them rather than the whole portfolio
- Strategy to move from innovative products to winning products
- Focus on Sustainability (especially in packaging), as consumer awareness and regulations are getting stricter
- Business strategy is not promoting healthy products even though health awareness is increasing

What does the current legislative//environmental landscape look like in Norway?

- Sugar tax - changes sometimes they have it sometimes not (depends on the political party)
- Regulations on ingredients and proportions
- No regulations on advertisement
- High quality in production required
- Huge focus on sustainable packaging and waste management
- Recycling is important and they get fines for throwing food in the wrong bin

3. SCENARIO VALIDATION

In the next step, we would like to dive deeper into future scenarios of how the confectionery market might evolve. In Scenario 1 we have health regulations similar to today and a smooth supply chain.

What do you think will be the product consumers will demand in Scenario 1?

- The market for these healthy products (fruit bars, organic/plant-based confectionery) is not yet mature
- Norwegian confectionery manufacturers do not significantly tap into these niche markets because:
    - Snacks such as granola bars are also getting hated because they have a lot of sugar
    - The competition in these niche markets is intense
    - In the past they invested a lot in innovation and it did not pay off
    - Traditional confectionery products make up for the majority of their profits, so they feel like there is no direct need to tap into these new markets
- Consumers demand healthier products which is why companies go with this trend but they still focus on the traditional product lines
- Manufacturers are not targeting health-conscious consumers exclusively as they are either cutting out chocolate altogether or eliminating it from their diets.

Which marketing channels are presently used and will become more important in the confectionery market in the future?

- There are currently a lot of TV and social media advertisements. Both of these channels will also still be very important in 7 years. Also, confectionery manufacturers will increasingly use influencers

How will market dynamics and the innovative ecosystem look like in Norway?

- There is no need for big players to cooperate with start-ups as they have an established R&D and testing laboratory. Thus, they can do it themselves in a quick and agile way
- They are able and strong enough to invest in a new product themselves without the help of a partner

INTERVIEW 3

Interview date: 20.11.2023 I Interviewer: Max Lohmann

1. CONTEXT: PERSON & BACKGROUND

Name: Carsten Simon
Role: Managing Director, Mars GmbH
Connection with the topic:

- Managing the second largest player, Mars Germany, in the German confecionery market
- Over 20 years of industry experience

2. SCENARIO VALIDATION

Presentation of the scenario matrix with key uncertainties. Assessment of each scenario after the other.

***Scenario 1**: Existing health regulations, only minimal or no disruptions in the supply chain, and consumer preferences favoring health trends continue. How do you assess the impact of this scenario on the industry, trade, and consumers?*

- Consumer-Driven Change:
  - The scenario is primarily influenced by changes driven by consumer preferences over the long term.
  - Consumers adapt their behavior, leading to shifts in demand based on their preferences.
- Moderate Consumer Behavior Shift:
  - Despite changes in consumer behavior, the scenario envisions a gradual and moderate shift, avoiding drastic and disruptive changes.
  - Consumer preferences evolve over time, influencing product demands, but without causing destructive upheavals.
- Growth in Healthy Snacking:
  - Within the evolving consumer landscape, the sector of healthy snacking is anticipated to experience continued growth.
  - Comparisons with the well-established healthy snacking market in the USA provide insights into potential market shares and shifts.
- Limited Impact on Traditional Chocolate:
  - Traditional chocolate remains largely unaffected, maintaining its status quo in the scenario.
  - The pace of change in consumer behavior does not lead to significant disruptions in the traditional chocolate segment.
- Trade Adjustments to Consumer Shifts:
  - The trade sector responds to evolving consumer preferences by adjusting its strategies and product offerings.
  - The scenario sees a strategic alignment between trade practices and changing consumer behaviors.
- Stable Industry Landscape:

    - Overall, the scenario foresees a stable industry landscape with no major disruptive changes.
    - While there may be a slight decrease in the number of startups, the industry remains resilient, adapting to shifts in consumer demands.
- Consolidation of Start-ups:
    - The scenario predicts a phase of consolidation among startups in the industry.
    - The current abundance of startups is expected to reduce over time as the industry matures and stabilizes.

Scenario 2*: Existing health regulations, disruptions in the supply chain, and consumer preferences favoring health trends continue. How do you assess the impact of this scenario on the industry, trade, and consumers?*

- Disrupted Supply Chain as Scarcity:
    - A disrupted supply chain is viewed as a form of scarcity, initially leading to price increases, as observed in the current context.
    - Over time, this scenario is expected to result in premiumization and consumer restraint due to sustained scarcity.
- Premiumization and Consumer Restraint:
    - The foreseen price increases, stemming from scarcity, would drive premiumization strategies in the industry.
    - Consumers, faced with higher prices and potential scarcity, may exhibit restraint in their consumption patterns.
- Resilience of the Confectionery Category:
    - Despite the challenges, the confectionery category is acknowledged as resilient against price increases.
    - However, if this trend continues until 2030, factors like climate change may further impact key raw materials, contributing to scarcity.
- Impact of Climate Change on Raw Materials:
    - A prolonged scenario of disrupted supply chains due to climate change may lead to shortages in key raw materials.
    - The slow adaptation to alternatives during this period contributes to scarcity in the industry.
- Industry Initiates Price Increases and Premiumization:
    - In response to scarcity, the industry is expected to initiate price increases and premiumization strategies.
    - This could trigger pricing conflicts with the trade sector, leading to challenges in pricing negotiations.
- Trade Sector Engages in Price Disputes:
    - As the industry raises prices and pursues premiumization, conflicts with the trade sector over pricing are anticipated.
    - The scenario envisions escalating disputes over pricing between the industry and the trade sector.
- Consumer Backlash and Purchase Restraint:
    - In the long term, sustained scarcity and premiumization may lead to a consumer backlash.
    - Consumers, concerned about the environmental impact and scarcity, may exercise restraint in purchasing products linked to these challenges.

- Potential Shift in Consumer Attitudes:
    - A perceived threat from climate change to raw materials could prompt consumers to reevaluate their attitudes toward products contributing to environmental challenges.
    - The scenario suggests a potential shift in consumer perceptions and behaviors related to the environmental impact of their consumption choices.

We identified cocoa as most vulnerable point in supply chain. What options are there to substitute or replace cocoa?

- Shift Away from Cocoa in Chocolate:
    - The core focus is on cocoa as a key ingredient, implying a scenario where traditional chocolate, by definition, might not contain enough cocoa to be classified as such.
    - The scenario envisions the emergence of alternative chocolate-like products that may lack the required cocoa content but still possess chocolate-like qualities.
- Introduction of Cocoa Alternatives:
    - In response to cocoa scarcity, the industry explores alternatives that serve as replacements for cocoa.
    - This could involve the development of products that retain a chocolatey or cocoa-like essence without relying on traditional cocoa sources.
- Complete Cocoa Replacement:
    - The scenario considers the possibility of a complete replacement of cocoa in chocolate products.
    - This suggests a fundamental transformation in the composition of chocolate, using substitutes or alternatives for cocoa.
- Pressure on Chocolate Industry:
    - The chocolate industry faces challenges not only due to cocoa scarcity but also because of the increasing demand for vegan products.
    - As climate change intensifies, animal-based products, including milk in chocolate, come under scrutiny, contributing to industry pressure.
- Vegan Requirement for Chocolate:
    - The scenario suggests a growing expectation that chocolate products must meet vegan standards.
    - Climate change concerns contribute to an increased emphasis on plant-based and vegan alternatives in the chocolate industry.
- Environmental Impact on Animal Products:
    - With the aggravation of climate change, there is a broader recognition that all animal-based products, including milk in chocolate, face environmental challenges.
    - The environmental impact prompts a reevaluation of the sustainability and viability of using animal-derived ingredients in chocolate.

***Scenario 3**: Severe health regulations, only minimal or no disruptions in the supply chain, and consumer preferences favoring health trends continue. How do you assess the impact of this scenario on the industry, trade, and consumers?*

- Advertising Restrictions and Market Dynamics:
  - If advertising restrictions impact the entire category, it could result in market share being somewhat fixed.
  - This may pose challenges for startups and healthier alternatives, making it harder for them to gain traction in the market.
- Complex Consumer Behavior:
  - Consumer reactions may not align with intended outcomes, and reformulated or healthier products might struggle to gain market share.
  - The difficulty lies in promoting products as healthy enough to be advertised, potentially limiting their market penetration.
- Challenges for Healthier Alternatives:
  - Market dynamics, including sugar taxes and associated VAT, could lead to premiumization or consumer restraint.
  - Premiumization might be less likely due to concerns about absolute price points and potential limitations on consumer spending.
- Impact of Sugar and VAT Taxes:
  - Sugar and VAT taxes are expected to contribute to either premiumization or reduced consumer purchasing.
  - Absolute price points may pose challenges, making it essential for the industry to strategize around maintaining accustomed consumption levels.
- Market Attractiveness and Industry Consolidation:
  - The German market may become less attractive for the chocolate industry due to potential challenges.
  - This could lead to further industry consolidation as companies grapple with excess capacities and changing market dynamics.

How would you deal with a sugar-tax?

- Limited Reformulation Due to Sugar Tax:
  - The expectation is that reformulating recipes specifically due to a sugar tax will likely be the exception rather than the norm.
  - Existing recipes may not undergo significant changes, especially in mainstream chocolate products.
- Segment-Specific Impact of Sugar Tax:
  - Certain market segments, such as protein bars or other health-focused categories, could benefit from a sugar tax.
  - Products in these segments might become relatively more affordable as they contain a lower percentage of sugar.
- Relative Affordability in Specific Segments:
  - The impact of a sugar tax might manifest in certain market segments where products become relatively cheaper due to lower sugar content.
  - Rather than a broad reformulation, this scenario envisions a shift in the competitive landscape within specific product categories.

- Challenges Despite Tax Benefits:
    - Despite potential benefits in specific segments, the overall landscape includes challenges like advertising restrictions and a 19% VAT rate.
    - These factors contribute to an environment where products become more expensive, even with the potential benefits of a sugar tax.
- Portfolio Re-Engineering for Price Maintenance:
    - To maintain absolute price points, companies might engage in portfolio re-engineering.
    - This involves adjusting product portfolios to navigate the impact of various factors, including advertising restrictions and tax rates.

Scenario 4*: Severe health regulations, disruptions in the supply chain, and consumer preferences favoring health trends continue. How do you assess the impact of this scenario on the industry, trade, and consumers?*

- Convergence of Market Trends:
    - The scenario envisions a convergence of two trends – the scarcity and increased cost of traditional chocolate, and negative perceptions associated with factors like climate change and health concerns.
- Impact on Traditional Chocolate:
    - Traditional chocolate faces challenges of scarcity, significant price hikes, and negative public perception due to environmental and health issues.
- Influence on Consumer Behavior:
    - Over time, these factors are anticipated to influence consumer habits, prompting a shift toward healthier alternatives perceived as more sustainable and cost-effective.
- Shift to Healthier Alternatives:
    - A potential outcome is a consumer shift toward healthier alternatives, driven by perceptions of their safety, relative affordability, and a desire for more sustainable options.
- Role of Retailers in Driving Trends:
    - Retailers are expected to play a crucial role in accelerating these trends, actively promoting healthier portfolios and scaling back on traditional products.
- Strategic Portfolio Adjustments:
    - In response to changing consumer preferences and market dynamics, retailers may strategically expand healthier product lines and reduce traditional offerings to maintain profitability.
- Acceleration of Trends by Retailers:
    - Retailers would likely seek to expedite these trends within the market, leveraging their influence to shape consumer choices and adapt to the evolving landscape.
- Adaptation for Sustained Profitability:
    - To sustain profitability in this evolving environment, retailers may prioritize the promotion of healthier alternatives and actively respond to changing consumer preferences.

3. GENERAL QUESTIONS

What other uncertainties do you see besides health regulations and supply chain issues?

- Global Standing of Germany:
  - While Germany is currently viewed as an attractive location, its importance within the global landscape is expected to diminish by 2030.
- European Context:
  - Within Europe, Germany might face challenges, attributed partly to its heavy reliance on heavy industry and manufacturing, potentially making it less competitive.
- Shift in Global Importance:
  - Europe, as a whole, is projected to become less significant globally, and within Europe, Germany's prominence might decrease due to economic structure challenges.
- Impact on Employment:
  - Potential job losses, both from traditional industries and those affected by AI, could lead to macroeconomic transformations and workforce-related challenges.
- Labor Market and Immigration:
  - Existing difficulties in finding skilled labor could intensify, and addressing this gap might require increased immigration, a societal challenge that may not gather widespread support.
- Macroeconomic Transformation:
  - Macro-economic issues, including workforce-related challenges and the need for immigration, could become more pronounced, affecting both the industry and trade sectors.
- Global Investment Attractiveness:
  - If Germany becomes less attractive due to these challenges, there could be a decline in investments, making it less appealing for spending money on solutions to uncertainties.
- Impact on Industrial Attractiveness:
  - Germany's attractiveness for industries could decrease, especially if addressing the uncertainties mentioned involves significant financial investments.

If one says these are uncertainties or if one also says there will be health-related regulations, and we don't yet know to what extent, how are you developing your product portfolio?

- Research and Development Focus:
  - Mars is actively engaged in Research and Development, with a focus on addressing uncertainties, especially in response to potential health-related regulations.
- Investment in Innovation:
  - The company is investing significantly in innovation, exploring ways to enhance both the brand and the overall chocolate-eating experience.
- Strategic Acquisitions:
  - Mars is strategically acquiring startups that complement and enhance different aspects of its portfolio, whether through unique brand experiences or by adding healthier options.
- Premiumization of Offerings:
  - Acquisitions of brands align with Mars' strategy to premiumize its portfolio,

providing diverse and appealing choices to consumers.

- Adaptation to Changing Trends:
  - Mars acknowledges the evolving trend toward healthier snacking and is actively adapting its portfolio to align with consumer preferences.
- Organic and Inorganic Growth:
  - The company's approach involves both organic growth through internal efforts and inorganic growth through strategic acquisitions to stay competitive in the evolving market.

What do you think about Carob? Does Mars already use it?

- Current Non-Use of Carob:
  - Mars does not currently use carob in its products.
- Emphasis on Enjoyment:
  - Chocolate is fundamentally viewed as a pleasure product, and Mars recognizes the importance of taste in consumer preferences.
- Consideration for Vegan Options:
  - The company acknowledges the growing market for vegan chocolate but emphasizes the importance of maintaining a delicious taste profile.
- Focus on Consumer Preferences:
  - Mars appears to prioritize consumer enjoyment, indicating a reluctance to incorporate ingredients that might compromise the taste experience.
- Market Dynamics:
  - The response suggests a market-driven approach, where the appeal and flavor of chocolate products remain central to decision-making.

What are alternatives to confectioneries?

- Consumer Behavior in Response to Price Increases:
  - Acknowledgment that consumers, if faced with significant price hikes in chocolate, may shift toward other indulgent products.
- Consideration of Health Perception:
  - Products perceived as healthier alternatives, with reduced critical ingredients such as cocoa or animal-derived components, could attract consumer attention.
- Emphasis on Lower Sugar Content:
  - Products with substantially lower sugar content are highlighted as an appealing option, aligning with the trend toward healthier choices.
- Snacking Habit as a Key Factor:
  - Recognizing snacking as a habitual behavior, Mars suggests that their products are interchangeable with other snacking options like yogurt or alternative snacks.
- Adaptability to Consumer Preferences:
  - The response reflects a strategic awareness of potential consumer shifts and a willingness to adapt product offerings accordingly.

Appendix 5 – Workshops with Ferrero Deutschland GmbH

WORKSHOP 1

Workshop date: 16.11.2023

1. Participants

Table 3: Workshop Participants - 16.11.2023 | Source: Own Creation

Name:	First Name:	Company
Behle	Tobias	Ferrero Deutschland GmbH
Drescher	Janis Nikolai	Nova SBE Work Project Team
Du Petit	Annamaria	Ferrero Deutschland GmbH
Gomes Mendes	Rita	Nova SBE Work Project Team
Lohmann	Max Friedrich	Nova SBE Work Project Team
Rosskopf	Thomas	Ferrero Deutschland GmbH
Schwenk	Volkmar	Ferrero Deutschland GmbH
Serra	Fabio	Ferrero Deutschland GmbH
Weber	Chantal	Nova SBE Work Project Team

2. Workshop Materials:

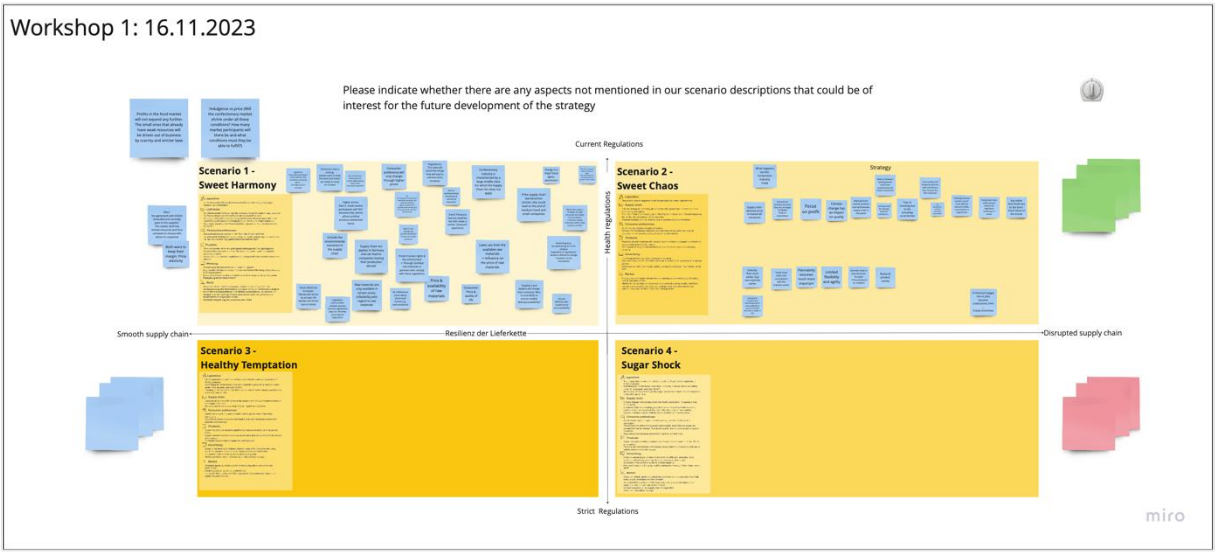


Figure 20: Miro Board for Workshop 1 | Source: Own Creation

WORKSHOP 2

Workshop date: 23.11.2023

1. Participants

Table 4: Workshop Participants - 23.11.2023 | Source: Own Creation

Name:	First Name:	Company
Behle	Tobias	Ferrero Deutschland GmbH
Drescher	Janis Nikolai	Nova SBE Work Project Team
Du Petit	Annamaria	Ferrero Deutschland GmbH
Gomes Mendes	Rita	Nova SBE Work Project Team
Lohmann	Max Friedrich	Nova SBE Work Project Team
Schwenk	Volkmar	Ferrero Deutschland GmbH
Serra	Fabio	Ferrero Deutschland GmbH
Weber	Chantal	Nova SBE Work Project Team

2. Workshop Materials:

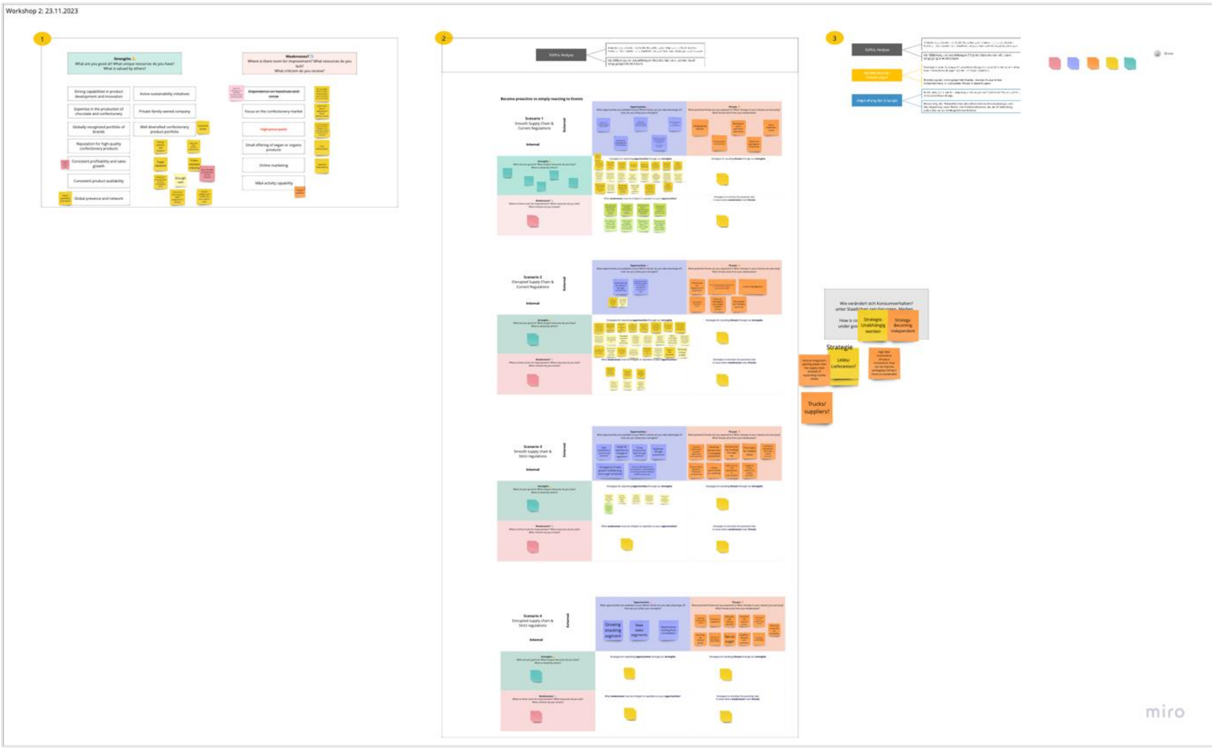


Figure 21: Miro Board for Workshop 2 | Source: Own Creation

Appendix 6 - Financial Simulation

To forecast the financial impact of the different scenarios the research team decided to consider three main factors: market revenue (EUR), volumes associated to this market size and the subsequent price per kg. Assumption supported by research will be made to quantify the impact of the key uncertainties on the market sizing.
All the different effect on price increase caused by supply chain disruptions and/or stricter regulatory framework will be added on top of the price increase of 1.98% highlighted in the baseline scenario (‘*Sweet Symphony’*).

Supply chain disruption impact on price has been calculated through the subsequent steps:

- It was simulated the cost increase from 2023 to 2030 of the key raw materials used in the confectionery industry:
    - Sugar → assumed an increase of 19 % by 2030 based on the trend of last year (Trading Economics 2023b).
    - Wheat → assumed an increase of 17 % based on the trend of last the 5 years (Trading Economics 2023c) because it wouldn’t be accurate to consider the beginning of this year because the price of wheat has been deeply affected by the Russian-Ukranian started at the beginning of 2022.
    - Cocoa → since year-to-date cocoa price increased by roughly 70% (Trading Economics 2023a) due to drought we assume that by 2030 the price will increase at least by double, mainly due to climate change effects, resulting in a 140% increase.
    - Others → assumed a general 15% increase.
- It was then assumed that all these numbers will likely to happen by 2030
- The weight (in %) of each of these ingredients was calculated in the total volumes used in the confectionery industry in Germany (BDSI 2023).
- Each of the assumed price increase of the raw materials (%) was then multiplied by the weight (%) and they were then summed up together to have a weighted average of the impact of each price increase on the overall industry → 38.9%.
- This number was then multiplied and applied directly to the general gross margin of the food industry (30%) (CSI Market 2023) to get the final price effect of the cost increase of the raw materials → assuming that the costs will be passed on its entirety to the consumer → final raw materials number of 11.7%.

- To this number it was added a 5% of price increase that is the impact of supply chain disruption on the EBITDA margin if the whole supply chain breaks down for one month (Baumgartner, Malik, and Padhi 2020) reaching a final comprehensive price increase 16.7 % by 2030.
- It was later assumed that the impact of supply chain disruptions on the confectionery market will not be visible from the first year but will fully take place by 2030.
- Based on this final number a CAGR applicable to each year from 2023 to 2030 was obtained in order to reach that final number of 16.7% that is a 2.23% CAGR on the price.

To calculate the impact of the **strict regulatory framework** impact three main drivers were considered: the impact of sugar tax and VAT increase on the price and the advertisement ban impact on demand.

- Based on research (Gonçalves 2022), regarding the sugar tax it was assumed a 10% price increase that will be passed wholly to the consumer causing a 10% increase in price in 2024.
- In Germany, in the baseline scenario the confectionery products are considered essential and primary products with a reduced VAT of 7% (Bundesministerium der Justiz 2006) but in the scenarios with the stricter regulations, it was assumed that the confectionery products will be considered not as essential seeing an increase of the VAT to 19% (the general VAT applied in Germany). Hence, it was presumed that this VAT increase of 12% would be passed on its entirety to the consumer.
- The last assumption is that the advertisement ban will impact the demand for confectionery products causing a decrease of 7% in the demand in the first year based on research on potato chips and HFSS foods in general (Dubois, Griffith, and O'Connell 2018; Yau et al. 2022).

To sum up, the total price increase caused by the sugar tax and VAT increase is estimated to be 22% and the demand decrease induced by the advertisement ban is assumed to be 7%. Excluding the first baseline scenario, once calculated the price increase from the present year and the evolution of the aforementioned price in the time horizon, the volumes and the market revenue were calculated using the **price elasticity** of -1.35 obtained as an average of the price elasticity of four confectionery companies in the US that are also the largest in Germany (Lindt, Ferrero, Mondelez and Mars) (UBS Evidence Lab and Nielsen 2019).

Summary of the impact on each scenario (Table 5):

- *'Sweet Symphony'*: scenario in line with the market forecast.
    - Volume CAGR 2023-2030 → 1.1% → 1,215 m kg
    - Market size CAGR 2023-2030 → 3.1% → 13,448 m EUR
    - Price CAGR 2023-2030 → 1.98% → 11.07 EUR/kg
- *'Sweet Chaos'* (disrupted supply chain affects the price)
    - Price CAGR 2023-2030 → 4.2% (baseline price increase of 1.98% + 2.23% of price increase linked to the supply chain disruptions) → 12.88 EUR/kg
    - Volume 2030 → calculated via price elasticity → 983 m kg
    - Market size 2030 →calculated multiplying price by volume → 12,664 m EUR
- *'Healthy Temptation'* (strict regulatory framework affects price and demand)
    - Volume CAGR 2023-2024 → -7% caused by advertisement ban
    - Price CAGR 2023-2024 → 23.98% (baseline price increase of 1.98% + 22% price increase caused by Sugar Tax and VAT increase)
    - Volume 2024 was obtained by applying the price elasticity to the already-reduced volumes.
    - Price CAGR 2024-2030 → baseline price increase of 1.98% → 13.46 EUR/kg
    - Volume 2030 → calculated via price elasticity → 773 m kg
    - Market size 2030 → calculated multiplying price by volume →10,402 m EUR
- *'Sugar Shock'* (disrupted supply chain and strict regulatory framework affect price and demand)
    - Volume CAGR 2023-2024 → -7% caused by advertisement ban
    - Price CAGR 2023-2024 → 26.20% (baseline price increase of 1.98% + 22% price increase caused by Sugar Tax and VAT increase + 2.23% increase caused by disrupted supply chain)
    - Volume 2024 obtained applying the price elasticity to the already-reduced volumes.
    - Price CAGR 2024-2030 →4.2% (baseline price increase of 1.98% + disrupted supply chain CAGR) → 15.60 EUR/kg
    - Volume 2030 → calculated via price elasticity → 615 m kg
    - Market size 2030 → calculated multiplying price by volume → 9,588 m EUR

Table 5: Financial Simulation | Source: Own Calculation

Price Effect			Weighted impact on gross margin	Gross margin	Weighted avergae price increase
Supply chain					
Raw materials	11,7%		12%	30%	39%
Supply chain disruption	5,0%				
Total	**16,7%**				
Health regulations					
Sugar Tax	10,0%				
VAT increase	12,0%				
Demand effect					
Advertis. Ban	-7,00%				
Price elasticity	-135%				

	Sugar	Cocoa	Wheats	Other	Total
Increase	19%	140%	17%	15%	
MT	750000	430000	450000	785000	2415000
Weight	31%	18%	19%	33%	

Sweet symphony	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020	Actual 2021	Estimate 2022	Estimate 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Variance % 2023-2030
Market Size in m EUR	9.404,10	9.604,10	9.897,90	10.138,60	9.991,00	10.217,30	10.534,04	10.860,59	11.197,27	11.544,39	11.902,26	12.271,23	12.651,64	13.043,84	13.448,20	24%
Volume in m kg	1.089,70	1.103,40	1.115,70	1.126,40	1.094,60	1.100,80	1.112,91	1.125,15	1.137,53	1.150,04	1.162,69	1.175,48	1.188,41	1.201,48	1.214,70	8%
Price in EUR/kg	8,63	8,70	8,87	9,00	9,13	9,28	9,47	9,65	9,84	10,04	10,24	10,44	10,65	10,86	11,07	15%
Price increase		0,86%	1,92%	1,46%	1,41%	1,69%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	
		2,1%	3,1%	2,4%	-1,5%	2,3%	3,1%	3,1%	3,1%	3,1%	3,1%	3,1%	3,1%	3,1%	3,1%	
		1,3%	1,1%	1,0%	-2,8%	0,6%	1,1%	1,1%	1,1%	1,1%	1,1%	1,1%	1,1%	1,1%	1,1%	

Sweet chaos	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020	Actual 2021	Estimate 2022	Estimate 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Variance % 2023-2030
Market Size in m EUR	9.404,10	9.604,10	9.897,90	10.138,60	9.991,00	10.217,30	10.534,04	10.860,59	11.101,60	11.347,95	11.599,77	11.857,18	12.120,29	12.389,25	12.664,18	17%
Volume in m kg	1.089,70	1.103,40	1.115,70	1.126,40	1.094,60	1.100,80	1.112,91	1.125,15	1.103,7	1.082,7	1.062,1	1.041,8	1.022,0	1.002,5	983,4	-13%
Price in EUR/kg	8,63	8,70	8,87	9,00	9,13	9,28	9,47	9,65	10,06	10,48	10,92	11,38	11,86	12,36	12,88	33%
Total Price increase		0,86%	1,92%	1,46%	1,41%	1,69%	1,98%	1,98%	4,20%	4,20%	4,20%	4,20%	4,20%	4,20%	4,20%	
Baseline price increase							1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	
Price effect of supply chain									2,23%	2,23%	2,23%	2,23%	2,23%	2,23%	2,23%	

Healthy temptation	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020	Actual 2021	Estimate 2022	Estimate 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Variance % 2023-2030
Market Size in m EUR	9.404,10	9.604,10	9.897,90	10.138,60	9.991,00	10.217,30	10.534,04	10.860,59	8.660,94	8.929,43	9.206,25	9.491,64	9.785,88	10.089,24	10.402,01	-4%
Volume in m kg	1.089,70	1.103,40	1.115,70	1.126,40	1.094,60	1.100,80	1.112,91	1.125,15	723,73	731,69	739,74	747,88	756,10	764,42	772,83	-31%
Price in EUR/kg	8,63	8,70	8,87	9,00	9,13	9,28	9,47	9,65	11,97	12,20	12,45	12,69	12,94	13,20	13,46	39%
Total Price increase		0,86%	1,92%	1,46%	1,41%	1,69%	1,98%	1,98%	23,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	
Baseline price increase							1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	
Price effect of health regulations									22%							

Sugar shock	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020	Actual 2021	Estimate 2022	Estimate 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Variance % 2023-2030
Market Size in m EUR	9.404,10	9.604,10	9.897,90	10.138,60	9.991,00	10.217,30	10.534,04	10.860,59	8.404,56	8.591,07	8.781,71	8.976,58	9.175,78	9.379,39	9.587,53	-12%
Volume in m kg	1.089,70	1.103,40	1.115,70	1.126,40	1.094,60	1.100,80	1.112,91	1.125,15	689,9	676,8	663,9	651,2	638,8	626,7	614,7	-45%
Price in EUR/kg	8,63	8,70	8,87	9,00	9,13	9,28	9,47	9,65	12,18	12,69	13,23	13,78	14,36	14,97	15,60	62%
Total Price increase		0,86%	1,92%	1,46%	1,41%	1,69%	1,98%	1,98%	26,20%	4,20%	4,20%	4,20%	4,20%	4,20%	4,20%	
Baseline price increase							1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	1,98%	
Price effect of supply chain									2,23%	2,23%	2,23%	2,23%	2,23%	2,23%	2,23%	
Price effect of health regulations									22%							

Appendix 7 - Ferrero Deutschland GmbH’s Strengths and Weaknesses

Table 6: Ferrero Strengths | Source: Own Creation based on (Behle et al. 2023)

Strength	Description
Brand recognition and loyalty	Ferrero has a strong brand recognition and loyalty, which has helped it to maintain a competitive edge in the market. The company’s flagship product, Nutella, is a household name and has a cult following around the world. Ferrero has also been successful in creating a strong brand identity for its other products, such as Ferrero Rocher and Kinder.
Global presence and network	Ferrero Deutschland GmbH is one of the international subsidiaries of the Italian parent company. This network provides a variety of experiences, partners, suppliers, and market knowledge. This extensive expertise can be utilized in the German market and has the potential to be a valuable resource for addressing supply challenges or developing new, attractive products based on international experience.
Private company	The German subsidiary of Ferrero SpA, a family-owned company in Italy, operates as a private business. This allows Ferrero Deutschland GmbH to make decisions without the constraints of short-term results often found in public ownership. Additionally, operating profits can be allocated toward long-term plans without being influenced by the reactions of capital markets.
Market position with retailers	The strong and cordial relationships with retailers are a notable strength of Ferrero Germany. These relationships foster collaboration and facilitate effective distribution channels, ultimately enhancing market penetration. Ferrero's ability to cultivate robust ties with retailers ensures not only optimal product placement and visibility, but also contributes to a favorable retail environment that fosters brand loyalty and consumer engagement. Strong relationships with retailers play a crucial role in maintaining the sustained market presence and competitive advantage of Ferrero Germany in the confectionery industry.
Capabilities in product development and innovation	There are two main objectives of Ferrero's product research and development. The first is to develop new products, while the second is to improve existing products with a focus on reducing production costs (Workshop). These strong capabilities are reflected in the successful launch of innovative products such as Nutella to go.
Operational excellence in manufacturing	One of Ferrero's key competencies in the confectionery industry is its ability to produce a wide variety of confectionery products of superior quality and consistent availability. This proficiency establishes the basis for numerous other strengths. In addition, when adjusting for new products or dealing with raw material supply constraints, production experience is an advantage.

Table 7: Ferrero Weaknesses | Source: Own Creation based on (Behle et al. 2023)

Weaknesses	Description
Strong focus on traditional confectionery	The current product portfolio of Ferrero Germany is focused on traditional confectionery products. Vegan and organic options or versions of popular products are currently not available, leaving Ferrero missing on growing markets and aligning with shifting customer demand.
Level of Digitalization	Digitalization is a key success factor for companies across all industries and plays a vital role in all business units from marketing to supply. Ferrero Deutschland GmbH identified its status of digitalization as being not on the level they are aiming at. For their marketing activities they assess a focus on conventional channels like TV and only small shares of the budget used for online marketing also showcasing a lower level of digitalization.
M&A activity and capabilities in German market	Ferrero’s low M&A activity in Germany may indicate a lack of strategic focus or resources dedicated to this market. This could limit their growth potential and competitive positioning in the German confectionery and food industry.
Dependence on specific ingredients	Ferrero is mainly focusing on the production and distribution of products that contain chocolate and/or nuts like the worldwide recognized Nutella, Ferrero Rocher and Kinder Riegel. This dependence on ingredients could result in vast impact on production if shortages for one of these ingredients occurs.
Incorporation of trends	In the confectionery industry, new trends constantly arise, some of which are short-lived, providing a source of new opportunities. During the November 30 workshop, Ferrero's experts noted that the company is too hesitant and not agile enough in picking up on these trends. This inadequate approach poses a risk of falling behind in growth markets.

Appendix 8 – Forecast of Antidiabetic Drug Use in Germany

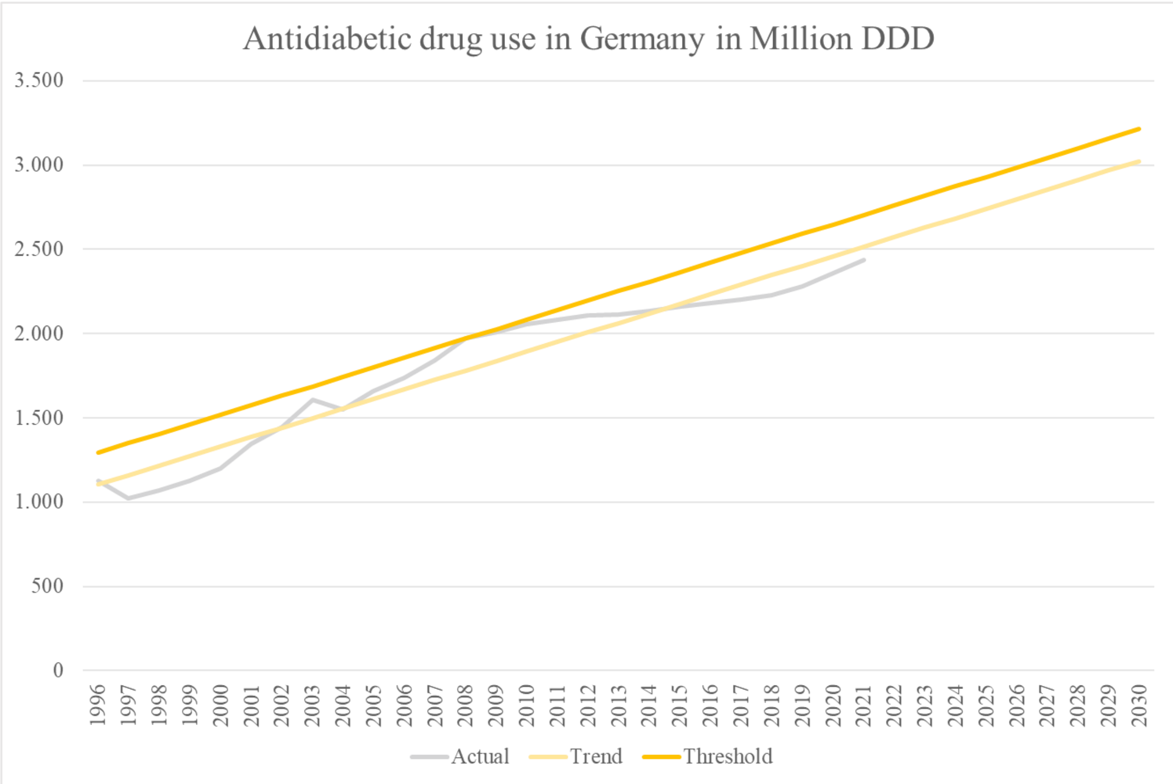


Figure 22: Forecast of Antidiabetic Drug Use in Germany | Source: Own Calculations based on IGES (2023)

Appendix 9 – Forecast of Health Expenditure in Germany

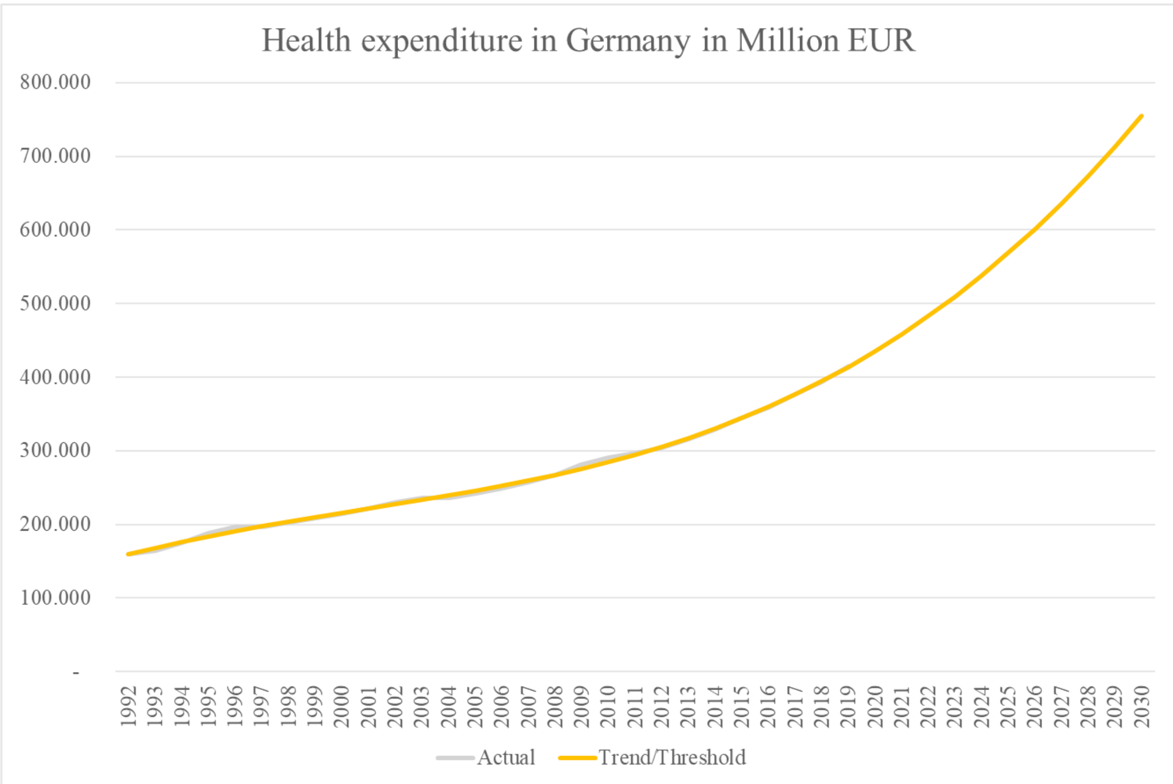


Figure 23: Forecast of Health Expenditure in Germany | Source: Own Calculations based on Statistisches Bundesamt (2023b)

Appendix 10 – Federal Assembly Poll Results [2013-2023]

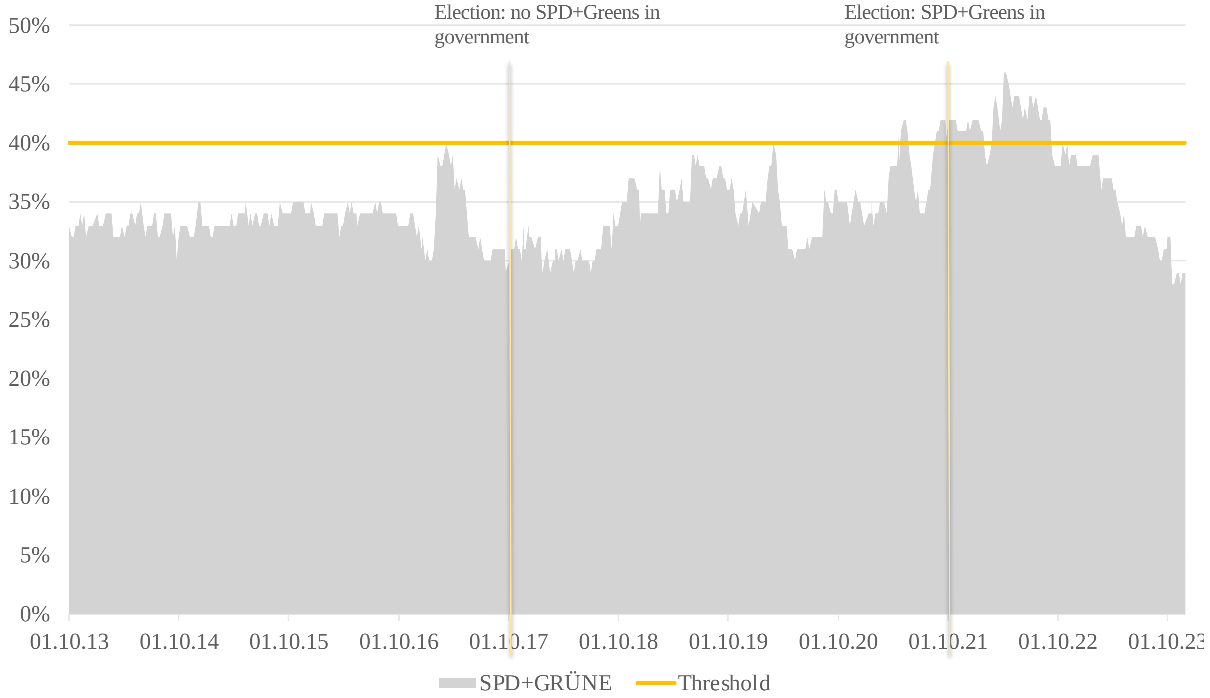


Figure 24: Federal Assembly Poll Results [2013-2023] | Source: Own Creation based on Forsa (2023)

Appendix 11 – Temperature Forecast for Ghana, Côte d'Ivoire and Nigeria

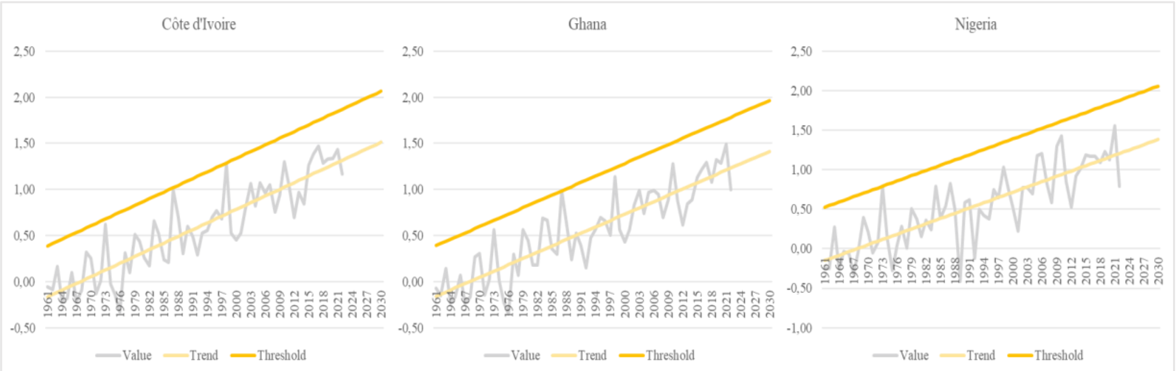


Figure 25: Temperature Forecast for Côte d'Ivoire, Ghana and Nigeria | Source: Own Calculation based on Food and Agriculture Organization of the United Nations (2023)

Appendix 12 – Forecast of Cocoa Price Index

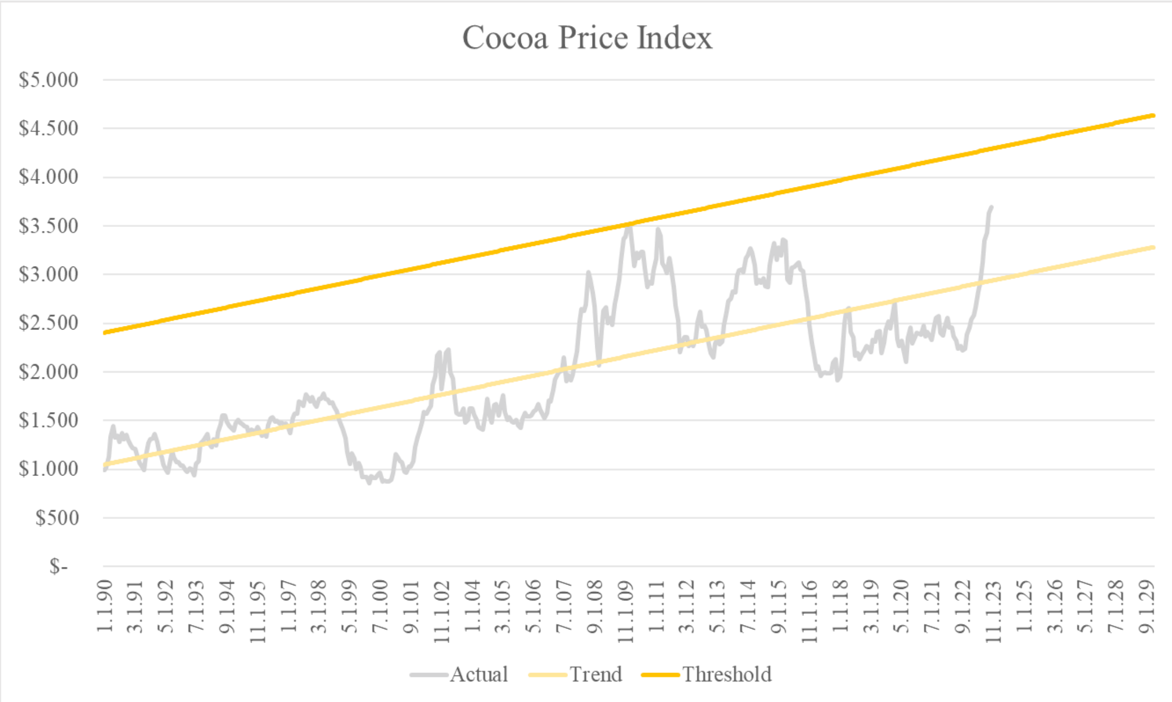


Figure 26: Forecast of Cocoa Price Index | Source: Own Calculation based on International Monetary Fund (2023)