

ID Cover Page

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Work Project, presented as part of the requirements for the Award of a Master's degree in
Management from the Nova School of Business and Economics.

STRATEGIC BUSINESS MODELS IN THE ONLINE FOOD DELIVERY INDUSTRY IN
EUROPE

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17/12/2024

Abstract

This research provides an overview of the food delivery industry, focusing on the key traits of traditional and contemporary business models. The thesis includes an in-depth analysis of the Hybrid Delivery Model, which exists within the OGD field and leverages the advantages of Brick-and-Mortar establishments along with the flexibility of Pure-Play Online platforms. Additionally, it assesses both strengths and weaknesses. The paper proposes strategic recommendations to tackle current challenges and leverage opportunities in the OGD sector, specifically examining how hybrid business models can successfully merge various elements to improve customer experience, operational efficiency, and ultimately, profitability.

Keywords

Strategic Business Models, Online Food Delivery, Online Grocery Delivery, Hybrid Delivery Model, Strategic Recommendations

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

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List of Abbreviations

AI – Artificial Intelligence	D2C – Direct-to-Consumer
API – Application Programming Interface	IT – Information Technology
BM – Business Model	OFD – Online Food Delivery
BMI – Business Model Innovation	OFP – Order Fulfillment Process
CVP – Customer Value Proposition	OGD – Online Grocery Delivery
	POS – Point of Sale

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1. Introduction

Food delivery has existed for numerous years; however, it is not an exaggeration to claim that it underwent a significant transformation during the pandemic. An industry already progressing swiftly due to technological advancements faced considerable pressure as new opportunities emerged during the COVID-19 pandemic. The pandemic, in conjunction with technological advancements, profoundly influenced customers' lifestyles, preferences, and purchasing behaviors. The food industry experienced a revolution during the lockdown, as customers were unable to visit restaurants and supermarkets, thus creating new, previously unrecognized needs. To face this, online food delivery (OFD) played a crucial role in maintaining a sense of normality for consumers by allowing them to enjoy the restaurant experience from the comfort of their homes, reminiscent of pre-pandemic dining. Or by conveniently bringing groceries into their home. Fueled by the maturation of a generation that grew up with the Internet of Things and are tech adopters – Gen Z and Millennials –the OFD industry has broadened its customer base and grown in value (Mason 2019, 365). Once a niche market, OGD has seen rapid expansion in recent years, driven by evolving consumer behaviors and needs (Hübner, Kuhn, and Wollenburg 2016). This promising market is projected to experience a steady growth rate of 10.05% annually (CAGR 2024-2029), resulting in a market volume of €137.40bn by 2029. The Grocery Delivery market in Europe is expected to generate a revenue of €85.80bn by 2024, with Retail Delivery as the main revenue driver with €72.18bn (Statista 2024e).

This thesis aims to showcase the main features of the most widely adopted business models in the OFD sector, developing strategic recommendations for the Hybrid Model, after evaluating strengths and vulnerabilities. Firstly, it presents a conceptualization of the business model

definition and frameworks, followed by a review and composition of the methodology used to develop this work. Next, the size and configurations of this industry are assessed followed by the evolution over the last 40 years of the different business models. Furthermore, the different business models are defined and explained comprising the meal and grocery delivery segments. This thesis provides an in-depth analysis of the Hybrid Retail business. This research narrows its focus to the Hybrid Model, which is characterized by a partnership between Pure-Play and Brick-and-Mortar platforms. This emerging business model will play a pivotal role in transforming the entire grocery industry, facilitating the shift from the traditional routine of visiting supermarkets to a more technology-driven approach while providing European consumers the familiarity of supermarkets' products. The advantages and vulnerabilities of this BM are evaluated, forming the initial basis for recommendations. This work provides further insights into the OFD literature with a practical-oriented approach, identifying drivers of change in this environment and market trends among consumers which will shape how BMs operate in the future. The strategic recommendations outlined in this report aim to eliminate entry barriers for non-users, tailoring the process to meet consumer needs while enhancing business profitability.

The macro-factors depend on geographical choice, for which the research focuses on the European market, where significant differences in market maturity and penetration rates are evident. The UK, France, and the Netherlands are considered more advanced online grocery markets, with higher penetration rates compared to countries such as Portugal, Italy, and Spain (Caine and Koetter 2018). The UK, a pioneer in e-grocery, saw major supermarket chains adopt online shopping as early as 2006, resulting in a more mature and developed market with established players and sophisticated logistics networks. Consequently, each recommendation provided in this study

should be viewed as a guideline and tailored to the specific characteristics and needs of the market where it is to be implemented (Saskia, Mareï, and Blanquart 2016).

Moreover, although the market's significance and growth have been previously discussed, the authors are very interested in new technologies and the industry's adaptation to such a competitive landscape. The inherent difficulties of slim margins and limited revenue streams have further fueled the authors' interest in this topic. The diversification of business models and the different nuances within each of them was an interesting topic to study, learning about how companies uniquely harness and develop specialized technological competencies. Additionally, grasping the reasons behind the limited adoption of the OFD concept in Europe was vital for crafting recommendations to develop a superior business model. While it may be hard to envision a world without food delivery services, change is always necessary to thrive and remain competitive.

2. Strategic Business Models Conceptualization

To compare various business models, it is essential to first grasp the concept of a business model itself. In the mid-1990s, the term “business models” entered management discussions, leading to a swift evolution in its definition, resulting in over 500 related articles by 2000 (Shafer, Smith, and Linder 2005, 200). Strategist Michael Porter described business models as part of the “Internet's destructive lexicon” (Michael Porter 2000 cited in Shafer, Smith, and Linder 2005, 200). However, most management scholars disagree, considering it to be a valuable tool in corporate management and innovation. The concept of a business model lacks a universally accepted definition, with interpretations varying across different business perspectives (Shafer, Smith, and Linder 2005, 200). According to Afuah (2014), a business model serves as a framework or blueprint for revenue generation by creating and capturing value. Magretta (2002) describes business models as “stories

that explain how enterprises work,” which outline the target customer, the value offered, and how this value is delivered. Osterwalder and Pigneur (2010) define a business model as the foundational logic by which organizations create, deliver, and capture value. While the terminology surrounding business models may differ, existing literature agrees that a business model reflects the operational logic of a firm without explicitly addressing market competition – this is the role of strategy. It portrays the core logic behind a firm’s strategic choices for value creation and capture within a value network (Shafer, Smith, and Linder 2005, 202). This representation can be developed in various manners based on different frameworks. Numerous analytical frameworks have been developed for studying and evaluating business models, each emphasizing distinct key components. Notable frameworks include the Business Model Canvas (Osterwalder and Pigneur 2010), which consists of nine elements, and Amit and Zott’s (2012) Why, What, Who, and How Framework. Afuah’s (2014) framework simplifies the components into five core building blocks: Customer Value Proposition, Market Segment, Revenue Model, Growth Model, and Capabilities, which will be utilized in this thesis. Generally, these frameworks’ components are consolidated into four main themes as shown in Figure 1.

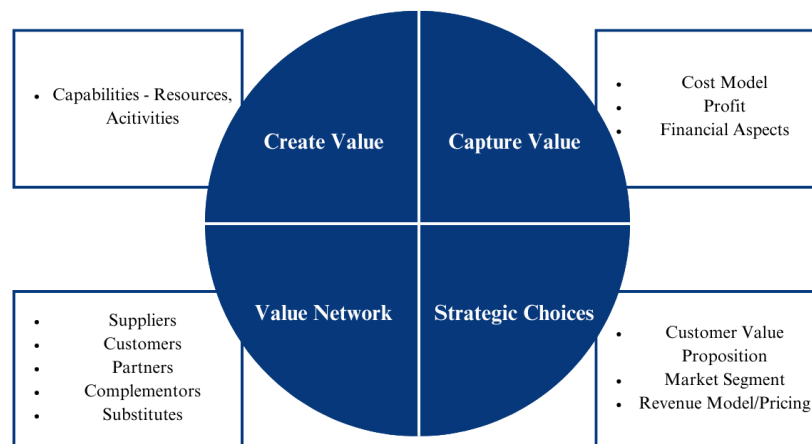


Figure 1 – Clustering Business Model Components (Adapted from Shafer, Smith, and Linder 2005)

BMs delineate how firms create value by differentiating from competitors and leveraging capabilities, resources, and potential advantages. They also illustrate how companies capture a share of this value creation through revenues. Moreover, both processes depend on a value network comprising partners, customers, distribution channels, and suppliers (Shafer, Smith, and Linder 2005, 202).

It is important to note that strategy and business model are not synonymous. As Michael Porter (1996) states, the “essence of strategy is choosing to perform activities differently than competitors,” which aims to create and sustain a competitive advantage. Conversely, the business model aids in analysing, testing, and validating strategic choices, while reflecting their impact on operations. It helps illustrate cause-and-effect relationships between strategy and company operations. For instance, when constructing a house, there are numerous decisions related to design, floors, furniture, etc. These choices are strategic; the business model emerges from these decisions as a detailed floor plan created by the architect. The integration of strategy and business models helps explain the varying profitability of companies. Both aspects are necessary for maintaining competitive advantages by tailoring their customer value propositions, establishing mechanisms for delivering that value, and defining isolating mechanisms to protect the strategy from being compromised (Teece 2010). Taking this into account, a strategic business model comprises what should change in the BM to remain competitive in the future, considering drivers of change and its impact on the future environment of its value network (Betz 2002).

Business model innovation (BMI) is crucial for success. According to Afuah (2014), innovation often stems from disruptions to conventional practices and arises through the alteration of established norms. BMI can be obtained by designing a new BM or by reconfiguring an existing one (Massa and Tucci 2013). The main point that distinguishes the BMI types is the nature of the

challenges faced. BM reconfiguration faces challenges that are idiosyncratic to businesses such as management processes, modes of organizational learning, and organizational inertia which new BMs do not face (Massa and Tucci 2013). BM design requires the creation and elaboration of the content, structure, and governance of how a company operates (Amit and Zott 2001 cited in Massa and Tucci 2013). According to Afuah (2014), BMI is commonly linked to product or service features. However, it usually pertains to identifying and leveraging opportunities that enhance value creation or capture (Afuah 2014). It can be obtained by being the first mover in changing the rules or by coming in later but employing a better business model. Innovations often focus on changing the customer value proposition, influencing customer preference for one firm over another. Additionally, it can be derived from how firms interact with the market, particularly in sales or revenue models. During the innovation process, it's important to assess which elements to modify and how these modifications influence other components. As mentioned earlier, the business model operates within an external environment shaped by both industry and macro factors. Innovation typically stems from capitalizing on the opportunities and threats present in these environments. This thesis will provide strategic recommendations for BM reconfiguration aimed at leveraging macro and micro-opportunities while minimizing vulnerabilities within the analysis of BM.

3. Methodology

This thesis presents a qualitative examination of strategic business models in the OFD sector. A comprehensive review of academic literature, industry reports, company websites, media sources, and journal articles was performed to clarify the distinctions among various business models and draw insights from industry size and configuration. To analyze the different BMs, Afuah's (2014) academic book "Business Model Innovation: Concepts, Analysis, and Cases," was used to identify

and define the different BMs in this industry. Afuah (2014) categorizes BMs into five fundamental components: Customer Value Proposition, Market Segments, Revenue Model, Growth Model, and Capabilities. Afuah's (2014) framework serves as a streamlined version of the business model canvas, presenting components that are more precise and easier to grasp. In this analysis, the growth model correlates with the cost model, recognizing that OFD BMs frequently operate on slender profit margins, often lacking profitability. Thus, the focus shifted toward understanding operating costs.

Afuah's framework was employed to highlight essential characteristics of relevant BMs in OFD as well as drawing advantages and disadvantages from the identified BMs – Aggregator Model, Direct-to-Consumer Model, Full Stack Model, Pure Online Player, Brick-and-Mortar, and Hybrid Model. Additionally, it is the framework used for the in-depth analysis of the Hybrid Delivery BM. To gather further insights into industry trends and the current landscape of different BMs, a survey (Survey_1) was conducted (Appendix 1). It aimed to evaluate general customer behavior in the OFD industry, gathering 146 responses. Collecting primary data is crucial for generating in-depth analyzes and strategic recommendations, supplementing insights from secondary data. Two primary data types were used to establish a strong foundation of findings for the in-depth analysis. Firstly, interviews were conducted with six industry experts from various companies and roles (refer to Appendix 2). Participants were recruited through personal networks and the professional networking platform LinkedIn. The interviews lasted between 45 minutes to one hour following a pre-established plan consisting of three primary sections: the first aimed to grasp how they define the industry and their general vision about its dynamic, the second explored BM elements concerning customer value propositions, revenue models, resources and capabilities, market segments, and cost structures, and the final part included open-ended questions about industry

opportunities and challenges, fostering brainstorming for potential innovations and changes in the BM. This method aimed to promote unbiased opinions and innovative ideas grounded in participants' expertise rather than explicit suggestions. Furthermore, targeted questions regarding potential recommendations were posed to assess their viability.

Secondly, a survey (Survey_2) specifically regarding OGD was developed to gain a nuanced understanding of consumer behavior and preferences regarding OGD, encompassing both users and non-users of the services (Appendix 1). For users, purchase behaviors, pain points, and service preferences were examined, while non-users provided insights on their reasons for non-adoption and future usage possibilities. For both groups, questions addressed areas for improvement, the likelihood of adopting future recommendations, and suggestions through open-ended queries.

Upon these insights, the strengths and vulnerabilities of the hybrid delivery BM were identified. To compose actionable and suitable recommendations, macro and micro trends were identified and key drivers of change were evaluated. According to Afuah (2014), BM's performance depends on the external environment and strategic BMs are an adaptation of current BM into the foreseen future, so scenario planning tool was elaborated. Scenario planning tool is crucial to improve strategic decision-making and align recommendations with the most probable and plausible scenario by analysing drivers of change and understanding what the future of OGD might be. After comprehending the critical uncertainties in the environment along with insights from experts, the information base for the recommendations was supported by two additional sources of primary data. Due to Europe's low levels of OGD adoption, 20 customer interviews were conducted to explore in detail the needs, concerns, perceptions, and preferences of individuals who do not regularly use e-grocery services (Appendix 1). Furthermore, a dynamic focus group session with

e-grocery users to interact with each other and derive key insights (Appendix 1). Promoting interaction among participants—viewing the focus group as more than just a group interview—proved effective in facilitating idea exchange and ensuring a smooth discussion flow. By comparing and integrating insights from user interviews with findings from non-user interviews, we sought to identify both differences and similarities that will inform robust strategic recommendations to assist companies in attracting new customers, enhancing retention rates, and improving the overall customer experience. The combination of insights from customers, industry experts, and environment drivers allowed for the development of strategic recommendations that not only align with customer demands and expectations but also anticipate adaptation to potential shifts in macro factors. To evaluate the relevance of these recommendations, the DVF framework was applied to analyze each recommendation's desirability, viability and feasibility. These were rated on a Likert scale from 1 (very low) to 5 (very high) to prioritize the recommendations with the highest scores. Finally, the impact of each recommendation on every component of the BM was assessed.

4. Strategic Business Models in the Online Food Delivery Industry

Convenience, speed, variety, and ease of order became imperative when discussing the food industry (Ahuja et al. 2021). COVID-19 was a pioneer in changing the landscape of the strategic BMs in this industry. The need for ultra-fast and ultra-convenience has shaped the last few years (Ahuja et al. 2021). OFD consists of ordering groceries or ready-to-eat meals through an app or website from restaurants, supermarkets, or local markets with variable delivery times from scheduled to instant (Statista 2024d). Platforms can either deliver ready-to-eat meals for direct consumption (Meal Delivery) or non-prepared food and beverage products, household, and

personal care products (Grocery Delivery) from supermarkets or retailers (Statista 2024d). All BMs feature the same customer journey, which consists of six key touchpoints as depicted in Figure 2. This journey begins with the initial step: the recognition of a need for fast and convenient food delivery.

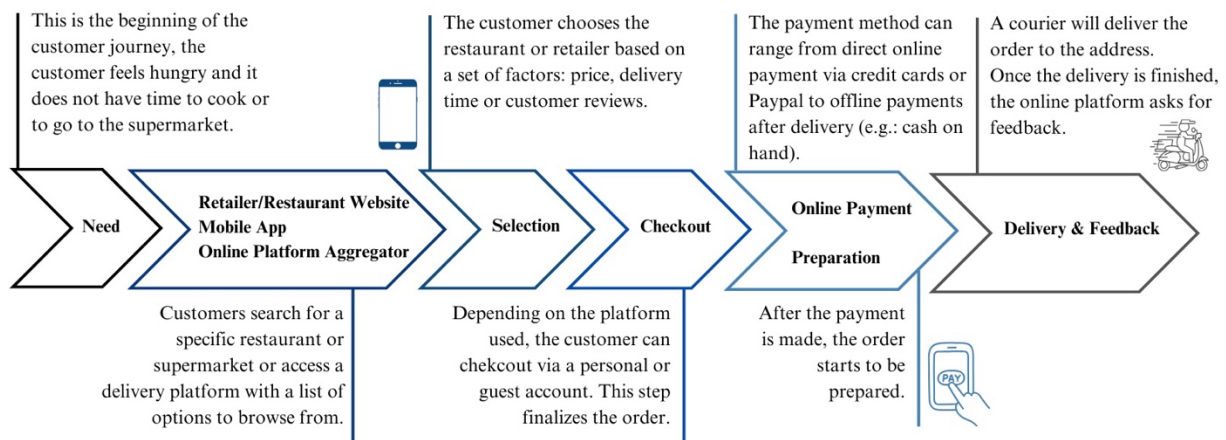


Figure 2 - Customer journey in the OFD industry (Adapted from Statista 2024d)

Tong et al. (2020) defined OFD platforms as a system “that connects not only merchants and drivers but also customers and merchants, which we name as a dyadic two-sided market structure”. The industry functions in a two-sided market, requiring a balance between meeting the needs of both end consumers and restaurant or retail partners. The Country Manager of Mercado (2024) even classifies it as a three-sided market, adding the courier as a stakeholder. This creates intricate challenges in managing networks and ensuring satisfaction across the three sides (Eisenmann, Parker, and Alstyne 2006). Christopher Payne, the chief operating officer of DoorDash, mentioned to the *Wall Street Journal* that OFD business is a “cost-intensive business that is low-margin and scale driven.” (Ahuja et al. 2021). As players act as intermediaries between these three agents, their profit margins remain minimal, making it challenging to develop differentiation strategies that require substantial investment capital.

4.1. Market Size

Over the years, Europeans have increasingly adopted technologies to promote convenience and ease in daily life (Ahuja et al. 2021). To accurately assess the market prospects of the OFD industry, it is essential to analyze its positioning within related industries, such as e-commerce and food tech. The OFD sector leverages advancements from these industries to foster its growth and technological progress. The OFD industry is a subset of the e-commerce sector, specifically focusing on the online ordering and delivery of food and beverages. As the largest segment within the food-tech industry, OFD integrates digital technologies to enhance food delivery services.

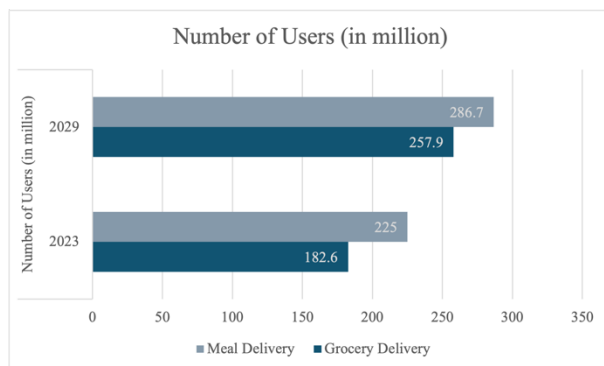
Firstly, OFD is deeply connected to the e-commerce ecosystem, relying heavily on technology and mobile apps to manage orders and deliveries, process payments, and connect platforms with couriers and clients. This connection allows for more streamlined operations, optimized last-mile logistics, and personalized customer experiences through data-driven insights. It has been growing over the years through digitalization and globalization and is supported by Millennials and Gen Z, who are very comfortable with the use of technology (Hirschberg et al. 2016). In Europe, the e-commerce sector was valued at US\$566.08 billion in 2023. This sector is expected to grow by 9.09% (CAGR 2024-2029) (Statista 2024a). The anticipated expansion of the e-commerce sector, alongside the innovative omnichannel strategies employed by major players such as e-commerce leader Amazon, is expected to further drive the adoption of online services. These advancements will shape the future of the industry by improving logistics efficiency and enhancing the personalization of customer experiences, leading to unforeseen developments that will continue to redefine consumer expectations and service delivery (Caine and Koetter 2018).

Furthermore, the food tech industry is the result of the emergence and adoption of innovations in the food industry. It comprises companies that use technologies to turn agri-food into a modern

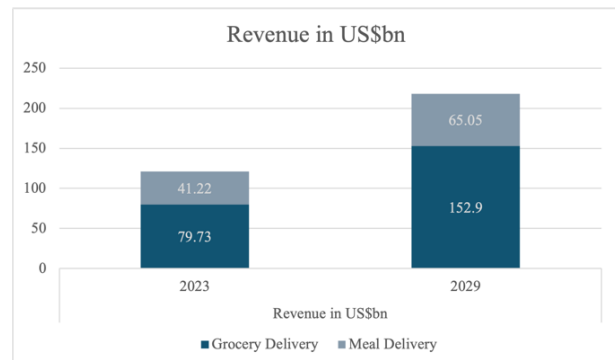
sector, from production to distribution (Iberdrola 2024). In 2022, the sector within the European food tech industry with the largest venture capital investment was food delivery, with US\$3.2bn, followed by online supermarkets, with US\$1.7bn (Statista 2024c). This reveals that in the upcoming years, the industry will grow based on investment in innovation and efficiency. It will become an even more relevant sector in consumers' lifestyles, reaching a wider base of customers by answering emerging concerns and issues.

The OFD industry is growing rapidly, reaching a market size of US\$1.02 trillion worldwide in 2023. In 2024, the largest country consumer of online delivery is Asia with 63.85% of worldwide users followed by Europe with 12.30% (Statista 2024d). The United Kingdom is ranked third worldwide in terms of revenue, generating US\$44.76 billion in 2024 (Statista 2024d).

Their dominance is attributed to their early adoption of food delivery services and the establishment of major industry players. The European OFD market reached a value of US\$120.95bn in market share in 2023 (Statista 2024b). It is expected to have an annual growth rate of 8.78% (CAGR 2024-2029) and is projected to reach a market volume of US\$217.95bn by 2029 (Statista 2024b). The OFD market comprises grocery and meal delivery with the key data insights regarding segment value and penetration rate displayed in Graphs 1 and 2.



Graph 1 - Number of Users in million per segment (Adapted from Statista 2024b)



Graph 2 - Revenue in US\$bn per segment (Adapted from Statista 2024b)

The grocery delivery segment comprises retail delivery, quick commerce, and meal kit delivery (Statista 2024b). It is an important part of OFD growth in Europe, with a projected revenue growth of 15.40% by 2025, fueling market growth (Statista 2024b). The leading countries in European grocery delivery share in 2021 were the United Kingdom (12.0%), followed by France (8.6%), The Netherlands (7.5%), and Sweden (7.3%) (Simmons et al. 2022a). Meal delivery includes platform delivery, such as Uber Eats, and restaurant delivery, such as Domino's Pizza. This segment has remained stable over the years, being the one with a higher penetration rate. These numbers reflect that the grocery segment is growing and forecasts the biggest innovation opportunity with higher revenues but also more complexities in adoption rates, still being a future adoption for certain market segments. Additionally, Simmons et al. (2022a) state that “fueled by evolving customer expectations, increased competition, and technological advancements, OGD could account for up to 18 to 30 percent of the food-at-home market in some leading European countries by 2030”.

4.2. Multi-sided Market

The OFD industry can be considered as a three-sided market, where network interactions occur between the three main participants: customers, suppliers, and drivers. Unlike traditional single-sided markets, multi-sided markets exhibit cross-side effects, meaning the value each participant derives is influenced by the active involvement of all sides. The utility of customers, suppliers, and drivers is interconnected (Bahrami et al. 2023). For instance, customers benefit from a wider range of options when there are many suppliers, suppliers can fulfill more orders when there are more customers, and drivers can complete more deliveries, thus earning more when the demand for orders is high. Customers pay a delivery fee, suppliers pay a fee to list themselves on the platforms,

and drivers earn a wage for each completed delivery. Furthermore, platforms can adjust these fees to influence the market dynamics (Bahrami et al. 2023).

The industry is dominated by a few well-established players, that are associated with widely recognized restaurants, brands, and supermarkets, making it difficult for new entrants to compete. Entering the industry requires significant capital investment in the development and maintenance of the online platform, as the sector is heavily reliant on IT expertise (Shetty 2023). Securing and retaining personnel may also pose a challenge, as workers tend to prefer companies offering higher compensations, which is only possible in big players due to their higher margins. A potential advantage for new entrants is the low brand loyalty among end-customers in this industry, that switch between platforms easily. Given the high number of available choices, customers can choose the provider that offers the lowest price and the highest quality. This behavior is facilitated by the lack of significant differentiation among industry players, allowing consumers to switch providers without incurring additional costs. To improve customer retention, companies have responded by high spending in marketing and offering discounts or subscription models (such as Delivery Plus or Glovo Prime) to reduce delivery fees. Different players have applied different business strategies, such as Glovo endorsing a low-price strategy and charging lower fees to capture a low-end market segment (Head of South of Portugal at Glovo 2024). Despite fierce competition among big players, local and regional players compete effectively by serving niche markets or specific needs of customers such as Thuisbezorgd in The Netherlands (Statista 2024b). The points of differentiation include the delivery speed and the range of suppliers affiliated with the delivery app (Shetty 2023).

4.3. Evolution of Business Models

Food delivery has been drastically evolving for the past 40 years. Its history goes back to 1950 with the rise of suburban culture and the popularity of televisions, following the Great Depression in 1929 and World War II, which spurred the expansion of meal take-out in the United Kingdom (Jackson 2021). The concept first emerged in the United States with the post-economic boom, combined with increased urbanization and automotive evolution, customers could place orders by phone and receive food via car delivery (Jackson 2021). During the 1980s, Pizza Hut started to expand to Europe, bringing the concept of pizza delivery as the most common meal. This concept was introduced to suburban areas. Local restaurants were responsible for receiving orders and handling deliveries, mainly pizzerias and Chinese restaurants (Jackson 2021).

By 1994, OFD emerged with the launch of Pizzanet by Pizza Hut, which was the first website on the internet allowing consumers to order food within a specific region in the US (Jackson 2021). In 1995, Waiter.com revolutionized the industry by introducing a website that aggregated multiple restaurants, creating an intermediary platform to seamlessly connect customers with dining establishments (Jackson 2021). This concept reached Europe in the 2000s, with Just Eat being founded in 2001 and Hungryhouse following in 2003, fueled by the rise in smartphone adoption and Internet penetration (McNamara 2024). Grocery delivery emerged by the late 20th century; in 1997, in the UK, Tesco launched its “Tesco Direct” program, marking one of the earliest brick-and-mortar chains to go digital (Waters 2020).

Moving from the aggregator websites, food delivery apps became dominant. Customers could conveniently order from online menus using their phones or from their work desks, making the process faster and more efficient. These companies acted as aggregators, offering a variety of restaurants beyond just pizza and Chinese food, thus expanding customer choice. However, the

delivery process was still handled by restaurants, leading to inconsistent delivery times (Jackson 2021). Throughout the 2000s, many new players entered the market, specializing in specific types of restaurants, such as high-end or low-end establishments (Jackson 2021). Online grocery stores such as Leshop in 1997 and Ocado in 2000, emerged with a wider inventory portfolio and higher delivery capacity by using pilot deliveries. These two were pure-play BMs without physical stores, using their own warehouses and customer fulfillment centers (McNamara 2024).

The aggregator BM was revolutionized in the 2010s when companies such as Deliveroo, founded in 2013, and Uber Eats, established in 2014, addressed inconvenient delivery times by implementing logistics-focused platforms responsible for managing and delivering orders. It was no longer the restaurants' responsibility to deliver the items, creating a more efficient and reliable service. The gig economy sustains this BM with independent and on-demand drivers providing flexibility and speed on delivery to platforms (Ahuja et al. 2021). This model has faced some problems with regulations in Europe, especially Deliveroo, concerning wage fairness. By offering third-party delivery services, all restaurants could employ delivery services, including the ones that previously did not have them. They introduced GPS tracking, apps with real-time order updates and electronic payments (Ahuja et al. 2021). By this time, meal kits and ready-made meals were introduced with the foundation of HelloFresh in 2011. It consists of delivering fresh ingredients with recipe cards to customers who want to test their cooking skills and eat healthy prepared meals (Jackson 2021). Platforms began to diversify their offer to fulfill the increased demand for these services. Delivery Hero (Germany) emerged in 2017 and Glovo (Spain) in 2015 broadening the scope of delivery services. They incorporated grocery and household items into their offerings through hybrid models. In 2018, Glovo introduced "SuperGlovo," the first dark supermarket designed to deliver essential items such as beverages and toilet paper within 20 minutes (Lewin

2018). To expand its product range, Glovo formed partnerships with major supermarket chains such as Carrefour in France, integrating a broader array of groceries into its delivery ecosystem (Carrefour 2019). Deliveroo created Deliveroo Editions in 2017 with the dark kitchen concept, allowing restaurants to increase their customer base without a brick-and-mortar location (Deliveroo 2022). In the same year, the subscription concept emerged with Deliveroo introducing Deliveroo Plus, which offered free deliveries for a monthly fee (Ahuja et al. 2021).

The COVID-19 pandemic shaped the 2020s. 2020 was marked by the government's widespread public health mandates that required individuals to stay at home, which posed a significant threat to the restaurant industry, which was already facing issues (Ahuja et al. 2021). Between March to May 2020, the OFD market experienced an increase in demand, which highlights the reliance on digital platforms to acquire food during that period. As a result of the circumstances, only establishments that adapted to the situation by offering online delivery services could increase revenues (Ahuja et al. 2021). During the pandemic, Millennial's preference for prepared meals and fast delivery created the opportunity for the Quick commerce model (Ahuja et al. 2021). Gorillas was created in 2020 and delivered groceries on a 30-minute time window while charging supermarket prices, becoming the fastest German company to reach a \$1 billion valuation (Curry 2022). Other platforms, such as Glovo, opened B2B quick commerce divisions in 2020 to leverage ultra-fast deliveries to improve the grocery experience (Gonzalez 2023). Restaurants sought to innovate and adapt their BMs to the ongoing pandemic and to the changes in market dynamics. Due to this, the players in the OFD industry grew and M&A operations were performed such as Just Eat and Takeaway.com to face the competition in Europe against Uber Eats and Deliveroo (Lunden 2019). Additionally, grocery delivery became a major need during the pandemic, whereas full-stack platforms such as Uber Eats started partnering with supermarkets. For example, Uber

Eats partnered with Carrefour in France and focused on delivering fast and small baskets (Seay 2022).

This increasing trend has persisted to the present, as proved by the example of Just Eats – the largest online food distributor – with a revenue record of €2.4 billion in November 2021, with an increase of 54% when compared to 2020 (Retail Economics 2022). Furthermore, the large influence of Millennials and Generation Z, who prioritize convenience and timesaving, has adopted these platforms and contributed to the industry's growth and the increase in the number and variety of players. The distinguishing easiness in browsing the menus, ordering, choosing delivery windows and tracking the deliveries shapes their economic decisions (Seay 2022). Dark kitchens are growing in interest as they are more featured in the platform's apps due to their lower overhead costs and higher affordability to pay commissions (Ahuja et al 2021).

The industry landscape, which includes companies such as Glovo, Uber Eats, Delivery Hero, Just Eat, and Deliveroo has also expanded significantly, moving beyond traditional takeout to a wide range of platform-consumer services, including grocery and retail items (Makortoff 2024). The value proposition is evolving to deliver everything that fits in a courier backpack (Head of South of Portugal at Glovo 2024). This has allowed an increase in revenue of billions of dollars and was facilitated by strategic acquisition. An example is Just Eat acquisition of Hungry House in the UK and Pyszne.pl in Poland, 10bis in Israel, and Lieferheld and Foodora in Germany (Just Eat Takeaway 2021). Such movements strengthened Just Eat market position. However, market positioning is not ensured as market dynamics and legal and regulatory issues shape the environment.

4.4. Current Landscape: Variation of Business Models

The OFD industry is structured into BMs tailored for its two segments – meal and grocery delivery as illustrated in Table 1. The meal delivery industry has been continuously adapting to changing consumer preferences and technological advancements. With the rise of digital platforms, the industry has evolved from traditional takeout services to more sophisticated aggregator, full-stack, and direct-to-consumer models. In parallel, the grocery delivery sector has also seen significant growth, driven by the demand for convenience and the expansion of e-commerce. The traditional brick-and-mortar grocery stores are now complemented by pure-play online services and hybrid models that blend online ordering with physical store benefits.

Business Model	Meal Delivery			Grocery Delivery		
	Aggregator Model	Full-Stack Model	Direct-to-Consumer	Pure Play Online	Brick-and-Mortar	Hybrid Model
Description	Connects customers with restaurants through a platform, with restaurants handling both food preparation and delivery.	The platform manages the entire delivery process, including order handling, food preparation, and delivery logistics.	Restaurants manage their own order processing, preparation, and delivery, bypassing third-party platforms.	Offers a completely digital shopping experience with direct delivery from warehouses or distribution centers, without physical stores.	Traditional grocery stores provide online ordering with store-based order fulfillment and delivery.	Combines online ordering platforms with physical store operations to leverage the advantages of both digital and traditional retail.
Who is responsible for each phase?						
Ordering Phase	Platform	Platform	Restaurant	Platform	Supermarket	Platform
Inventory Management	Not Applicable	Not Applicable	Not Applicable	Platform	Supermarket	Supermarket
Order Preparation	Restaurant	Restaurant	Restaurant	Platform	Supermarket	Platform/Supermarket
Last-Mile Delivery	Restaurant	Platform	Restaurant	Platform	Supermarket	Platform

Table 1 - Strategic Business Models Variation in OFD industry (Authors' illustration)

4.4.1. Meal Delivery

4.4.1.1. Aggregator Model

The Aggregator Model offers consumers a platform where they can choose a restaurant from which they would like to order without any additional cost. The platform connects the customer and the restaurant, and the latter handles the delivery. The platform collects a fixed margin on each order,

paid for by the restaurant. These platforms operate under an asset-light model and often command attractive profit margins - 40 to 50% (Hirschberg et al. 2016). The value proposition of such platforms lies in the fact that they offer a single platform where customers can browse the menus and compare options from a variety of different restaurants, which makes them a convenient option. When it comes to the restaurant, it provides the opportunity to reach a wider audience by using the platforms' reach without the need to have internal online ordering systems in place. It helps restaurants optimize unused capacity, potentially boosting revenue and expanding their takeaway operations (Erickson 2023; Hirschberg et al. 2016). Aggregator platforms generate profit on each delivery by charging fees to the restaurants. They typically charge a fee between 15% and 25% on each order (Hasan et al. 2020). The commissions could be reduced or increased for certain establishments hence some variation might exist (Erickson 2023). The variation arises due to the specific characteristics the restaurants present, such as size, frequency of orders and location as well as the competitive landscape in the city (Hasan et al. 2020). The marketing within the app is also an important component. Studies suggest that restaurants should pay attention to digital marketing through these platforms as it is an important driver of users purchasing intent (Gautama et al. 2023). This BM undoubtedly features several strengths. Since this is an asset-light model, it offers scalability to the extent that there is no need for investment in physical infrastructure, which facilitates the expansion into different geographies (Hirschberg et al. 2016). On the other hand, several weaknesses can also be highlighted. There is a significant reliance on the restaurant when it comes to customer satisfaction since most of the process is handled by the restaurant. This could have an impact on the platform's reputation even though it has no direct control over it. However, the restaurants may also face challenges when using such platforms. The commission fees can be a significant burden on many restaurants. To offset this issue, some restaurants resorted to tactics

such as having higher menu prices on the aggregator app as opposed to onsite, while others decided, during the COVID-19 pandemic, to act as delivery and pick-up restaurants only, compromising their onsite diners (Erickson 2023). This showcases that restaurant, when using an OFD platform, often need to strike a balance between their online operations and offline operations as each option has its advantages and drawbacks.

4.4.1.2. Direct- to- Consumer Model

Another model that is significant to this industry is the Direct-to-Consumer (D2C) model. In contrast to traditional models that involve third-party platforms, D2C empowers restaurants to manage their own delivery operations, eliminating the need for intermediaries as they handle both the ordering and the delivery part. This eliminates the need to rely on third parties and leaves full control over quality of the entire process, from making the product to delivery (Trainer 2022). This approach offers restaurants greater control over their brand, customer experience, and profits. It is a model with significant potential that also saw significant growth during COVID-19 (Reilly 2022). The revenue streams will depend on the type of operating model that the business adopts. Many big players in this model, including Pizza Hut, Domino's, McDonald's or KFC utilize the franchising model. This means that they operate more as a supply chain and consumer marketing firm and most of their revenue comes from franchise royalties and renting (Ganti 2024; Trainer 2022). For the restaurant itself the core source of revenue comes from direct sale to consumers and under this model the company does not have to pay fees to third parties, although they also have more complex and expensive logistics (Nycz 2023). D2C food brand websites typically tend to present higher conversion rates, with the added advantage of lower costs through direct sales it shows potential for higher profit (Nycz 2023). The advertising is quite different, as companies tend to rely on expensive advertising programs such as, total price reductions and feature ads,

when selling through third parties, with the goal of creating brand awareness and driving trial without a guarantee that it will lead to a successful purchase. When using this model, companies track other metrics such as web traffic and conversions and have more control over the process with less expensive advertising campaigns. At the same time, it offers increased control over advertising budgeting in general and more flexibility to adapt to peak demand and high conversion rates on certain products or adjust their spending if there is lower product availability. At the same time, the different nature of D2C advertising might challenge less experienced businesses by presenting a significant learning curve. It is thus also important to build a robust IT infrastructure to be able to offer a service similar to that of the major retailers (Nycz 2023; Reilly 2022). When food brands sell directly, they have more leverage over the data they can collect from the customer, they can use that data to adapt their offer, innovate and predict future market developments (Nycz 2023). Managing the logistics process can be expensive, and despite offering more control over the customer experience, it might be costly and challenging to ensure the smooth operation of the delivery services, the costs might be more noticeable when the delivery is done individually. Additionally, food brands may face additional costs if the product is not in great condition. Last-mile delivery is the part that accounts for most of the shipping costs and is often the most challenging for businesses transitioning into a D2C BM. Thus, companies need to make sure they have the right partners and that they put a great focus on the logistics to leverage new technologies and make it efficient, which is fundamental to ensure a great customer experience in an era where customers are accustomed to speedy deliveries (Gray 2021; Nycz 2023; Reilly 2022). Lastly, this BM offers fewer partnership opportunities to the extent that the supply chain network is smaller, which can leave the company more isolated when navigating the developments within the industry and the overall market (Nycz 2023).

4.4.1.3. Full-Stack Model

The third model is an iteration of the previous Aggregator Model to which many aggregators transitioned over the years. These platforms operate in a similar way to aggregators, but they also handle the logistic process. This gives the option of delivering food to restaurants that do not own any delivery services (Hirschberg et al. 2016). The value proposition of full-stack platforms goes beyond simply offering a solution where customers can browse many options, and a restaurant is able to expand its reach. For the consumer, the value proposition remains virtually the same. But for the restaurants, there is a significant shift since the delivery is now completely handled by the platform. This is important since many establishments, especially smaller ones, do not possess the capacity to have an efficient delivery system. So, they can access all the delivery infrastructure of the platform without any significant initial investment that an in-house solution would require. This may also be relevant in the context of volume since these platforms offer the potential for a high volume of orders and can thus help restaurants fill their spare capacity (Moroney 2024; Sandle 2019). The full-stack platforms operate by communicating the orders that are placed to the restaurant, the restaurant needs to make the meal in time while the driver fleet and all the delivery infrastructure are managed by the full-stack platform, as well as the post-purchase experience (Deliveroo n.d.). In this context, restaurant partnerships are still a very valuable asset for creating network effects (Zhu and Iansiti 2019). The customer can often get an enhanced experience since these platforms specialize in the specific area of OFD and may have more developed capabilities and infrastructure, especially when compared to smaller food chains. Aside from a wide selection of restaurants and convenience, the order tracking options as well as potentially faster and more efficient delivery, make this BM stand out. Nonetheless, the customer self-pick-up option is also available if they prefer to pick it up themselves at the restaurant. The platforms also handle the

delivery experience and have access to data, which can enhance the delivery experience further with the potential of creating a loyal customer base (Erickson 2023; Uber Eats n.d.a; Uber Eats n.d.b). When it comes to revenue generation, these platforms collect a fixed margin on the order and a small flat fee from the consumers. Despite incurring costs associated with paying drivers, they continue to maintain attractive EBITDA margins (over 30%) (Hirschberg et al. 2016). The commission fees for restaurants typically range from 15% to 30%. Customers pay the delivery fee as well as a service fee (a surcharge of up to 15%) (Ahuja et al. 2021). Many of these platforms allow for advertisement on their platform for a highlighted appearance for the food brands. This also includes post-purchase advertising. Advertising is a significant revenue stream as, for instance, one-third of Instacart's revenue comes from advertising on the platform. Lastly, customers have the option to leave tips which, despite going directly to the drivers, are essentially helping platforms to fund their operations (Ahuja et al. 2021; Eley and McMorro 2020). Under this BM, platforms also face several challenges. They must develop a sophisticated system to ensure that orders are delivered promptly so that they are able to effectively manage the delivery routes and have an attractive proposition for customers and restaurants. Many of them are tapping into AI and machine learning to improve their marketing and optimize delivery routes, which is also possible due to the data the platform collects, including historical data about the restaurants (Aleksandrowicz and Nostro 2024; Amin et al. 2018). This is also a very competitive market, with many platforms fighting over the same restaurants with similar offers. Operating efficiency is one of the most relevant criteria for success in this market and leveraging existing capabilities can be a significant asset (Chiang et al. 2024; Sterling and Russ 2022). At the same time, restaurant acquisition and retention is also a significant point of contention. Platforms may offer more attractive fees to restaurants that are more attractive to have on the platform. Being able to secure exclusive deals

with restaurants may also lead to a significant advantage in the market. Platforms often do it by offering more attractive fees for exclusive partners. Despite the stronger position that exclusive deals give, it is also worth noting that there is legislation in place against anti-competitive practices. For instance, Delivery Hero had to terminate the exclusive partnerships it had with restaurants in Norway and was prevented from charging them higher fees if they used other platforms. The decision was put in place for 3 years, as per the settlement with the country's competition authorities stating that they were feeding into Delivery Hero's dominant position in the country and ending them may lead to better service for customers (Keane 2022).

4.4.2. Grocery Delivery

4.4.2.1. Pure-Player Model

Pure-play online grocery platforms, such as Ocado and Picnic, have pioneered grocery delivery by offering an entirely digital shopping experience without physical store locations. These platforms negotiate exclusive partnerships with grocery items brands, having stock in fulfillment centers or warehouses. Furthermore, the platform organizes a courier to deliver the order to the customer's location. Such BM relies heavily on advanced logistics and efficient fulfillment centers to meet consumer demand. For example, Ocado created a unique fulfillment technology by employing robots to pick and pack orders – they can pick up 50 items in 5 minutes (Ocado Group n.d.c). While this BM offers several advantages, such as greater control over order fulfillment quality, the use of robots, and ownership of warehouses, pure-play companies also face significant challenges. These include high customer acquisition costs, particularly among more traditional consumers, and the constant need to invest in advanced technology to stay competitive (Ocado Group 2022).

Within the Pure-Player BM, some business strategies have emerged. The Quick Commerce business strategy is among these, characterized by a value proposition centered on ultra-fast delivery, with companies competing intensely to achieve the fastest delivery times, as this one has proven to be one of the major considered factors by customers (Bradshaw and Lee 2021; Keane 2020). Companies have created smaller centralized centers and networks, through which drivers work to deliver the orders within 30 minutes. It is mainly focused on the way the delivery is made and the logistics process, which is localized on the warehouses or “dark stores” (Talabat 2021; Bradshaw 2022a). Considering the fast delivery times, this model is very local and focuses on each area or neighborhood (Nair 2021). The COVID-19 pandemic boosted this BM, caused by the growing trend for ultra-fast delivery, and companies needed to make changes to remain competitive. For instance, Glovo tackled this opportunity and established partnerships with major food brands and supermarket chains while also investing in their own “dark stores” which allow to ensure fast delivery times (Keane 2020). Even though the concept looked quite promising, many of the Q-commerce platforms ceased to exist over time, and by 2022 less than half of those that emerged earlier were still in the market, as many smaller players in Europe were overtaken by larger companies. In 2022, Getir acquired Weezy, DoorDash invested in Flink, and Gorillas acquired Frichi. Bigger players under this model also had to rethink their expansion plans (Bradshaw 2022a; Bradshaw 2022b). Large sums were invested into these start-ups, many of which emerged during the pandemic. Investors believed that ultra-fast delivery would revolutionize everyday shopping but, over time, they were not satisfied with the profitability levels. Paradoxically, large players were having heavy losses and questions arose about whether this BM could even be profitable. Illustrated by Getir, which had no real path to profitability (Bradshaw and Lee 2021; Bradshaw 2022a; Bradshaw 2022b; Ludmir 2023). The understanding of the value added

might have been greatly exaggerated and these companies were never worth that much to begin with (Clogan 2022).

Another strategy falling in this BM is the meal kit delivery, which consists of “pre-packaged boxes of ingredients and recipes that are delivered to customers' homes”. Each kit includes all the ingredients needed to make a specific meal, along with step-by-step instructions for preparing the dish” (Statista 2024b). Meal kits are focused on convenience and customization. They allow customers to save time on cooking and grocery shopping, providing them with meals that fit their dietary restrictions. Meal kit companies are attributing great importance to their commitment to sustainability. A good example is HelloFresh, one of the biggest players in the market which has made significant strides toward sustainability that are not limited to reducing food waste, but also to sourcing products locally and ethically, using recyclable and compostable packaging, and becoming the first global carbon-neutral meal kit company (HelloFresh 2024). Meal kit providers are widely characterized by their use of subscription models, emphasizing their commitment to convenience. A key benefit of these subscription models is the generation of recurring revenues, representing the primary revenue stream for meal kit businesses. Additionally, many services offer add-ons or premium options for an extra charge, such as exclusive ingredients or additional ones. This allows customers to personalize their meal kits as much as possible, further enhancing their experience and boosting revenues (Horton 2024).

4.4.2.2. Brick-and-Mortar Model

Initially, traditional brick-and-mortar retailers were reluctant to enter the e-grocery market. However, the demonstrated success of pure-players prompted these retailers to reassess their strategies. Their primary objective became ensuring customer satisfaction, across all available distribution channels (Head of E-commerce of Continente 2024). To achieve this, the initial approach adopted was the click-and-collect. This method gives customers the flexibility of shopping online through a dedicated platform, and complete the payment through an online payment system. Afterwards, the customer picks the order at the store, or opt for home delivery (Hays et al. 2005). A commission or service fee is typically charged by the supermarket to cover delivery or pick-up service associated costs. The preparation of orders, utilizing the in-store inventory, is managed by the brick-and-mortar staff, adhering to an in-house logistics approach. Brick-and-mortar players entering the e-grocery industry can leverage significant advantages but also face several challenges. They bring an established customer base and brand recognition into the online space, which can help reduce customer acquisition and marketing costs. Additionally, by utilizing their existing facilities, these players can significantly lower the initial capital required to enter the e-grocery market. These traditional retailers can increase operational efficiency by integrating their online and offline activities (Sawall et al. 2024). This integration optimizes operations such as inventory management and last-mile delivery and provides a more comprehensive overview of consumer habits (Hays, Keskinocak, and de López 2005). However, the challenges for brick-and-mortar stores include high operational costs, especially in last-mile delivery and order picking, which can be mitigated by offering various fulfillment options, such as in-store pickup, home delivery, and click-and-collect (Caine and Koetter 2018). Although leveraging existing infrastructure offers an advantage, significant investments in technology and

personnel are necessary to manage an effective online grocery operation (Hübner, Kuhn, and Wollenburg 2016). Furthermore, brick-and-mortar players compete with well-established online grocers who have already optimized their e-commerce platforms and logistics networks (Caine and Koetter 2018). There is also a risk of cannibalizing sales from their physical stores, as customers may shift to online shopping, potentially reducing the profitability of their traditional operations (Ankar, Walden, and Jelassi 2002). Additionally, adapting to the fast-evolving expectations of online customers, who demand convenience, speed, and a wide range of products, requires significant adaptability and flexibility (Eriksson and Stenius 2023).

4.4.2.3. Hybrid Model

Partnerships or mergers between pure-play online retailers and brick-and-mortar supermarkets are gaining prevalence (Jubilee 2024). Brick-and-mortar supermarkets benefit from a large, loyal customer base and an efficient logistics system, enabling them to generate profits in a narrow profit margin business (Hays, Keskinocak, and de López 2005). These players typically have robust brand recognition and substantial financial resources, which enables them to explore various channels to attract new customers, while having to spend lower marketing and advertising expenses for customer acquisition (Simmons et al. 2022a). For example, partnerships such as Mercadão with Pingo Doce in Portugal, or Carrefour with Uber Eats in France, have demonstrated how these collaborations can create a more extensive service offering, gaining the trust of more traditional customers and reducing the need for heavy investments in new infrastructure (Sawall et al. 2024). Third-party logistics characterizes the BM, as supermarkets collaborate either with a specific platform (e.g. Pingo Doce and Mercadão) or with classic delivery platforms (e.g. Pingo Doce and Glovo). The third-party logistics choice depends on the order size, whereas Glovo delivers low-size baskets due to their limited space in the mean of transport used, and Mercadão delivers big-

size baskets by car. However, managing partnerships between brick-and-mortar pure-players can present a significant degree of complexity, requiring careful alignment of business goals, operational processes, and revenue-sharing models. This can lead to channel conflict, particularly if pricing, promotions, and product offerings differ between online and offline channels, potentially confusing or alienating customers (Liashenko and Yakymchuk 2023). Another existing challenge consists of integrating an online platform with existing retail systems, particularly for inventory management and point-of-sale. This integration might require significant technological investment and expertise. Although this investment might be lower than setting up an entirely new system, it still should be considered (Hays, Keskinocak, and de López 2005).

5. In-Depth Hybrid Delivery Model Analysis

The importance of Grocery Delivery within the OFD Industry has been increasing throughout the last decade, with no signs of slowing down. According to Statista (2024b), Grocery Delivery's penetration rate is forecasted to grow with an average CAGR of approximately 3.65% per year between 2024 and 2027, compared with an average CAGR of 1.43% per year within the same period for Meal Delivery. The European Retail Delivery market is expected to generate a revenue of US\$78.65bn by 2024. With an anticipated annual growth rate (CAGR 2024-2029) of 10.56%, the market is projected to reach a volume of US\$129.90 billion by 2029. Due to the presented reasons and insights from industry experts, the Hybrid BM was chosen for further study.

5.1. Business Model Innovation

The next section will apply Afuah's (2014) framework to analyze the Hybrid Delivery Model. The Methodology section has previously described this framework, while the growth model component

has been modified to align with the cost model, as attaining profitability poses significant challenges (as illustrated in Figure 3).

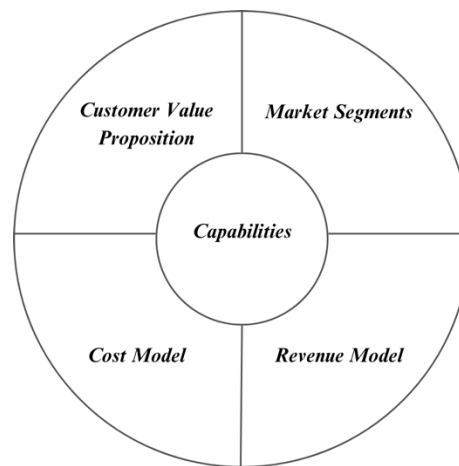


Figure 3 – In-depth business model framework (Adapted from Afuah 2014)

5.1.1. Customer Value Proposition

According to Afuah (2014), customer value proposition describes “how a firm's products or services can effectively address customers' problems or needs more successfully than those of competitors”. It comprises what a firm offers to attract customers and how customers perceive these products/services as valuable. Companies shape needs and online delivery is a prime example of a need customers might not have recognized before the pandemic. The pandemic shaped customer preferences and value perceptions towards low prices, convenience, fast delivery, fresh products, easy access to a wide range of products, and access to discounts or promotions (Survey_2 2024). The creation of value in grocery delivery is very peculiar and different from meal delivery due to its product nature. Groceries are mainly classified as experience products instead of search products, where customers obtain product information by consuming/experimenting (Kervenoael et al. 2006). Grocery shopping is part of every household routine and demands a full-sensory experience. This experience includes odor, touch, and physical appearance of fruits/vegetables and meat products, as well as the feeling of immediate gratification, making the online experience

challenging (Hansen 2005). The research conducted by Hansen (2005) shows that customers who had previously bought groceries online perceive e-grocery differently from those who either had never shopped online or had only bought non-grocery items. It highlights *perceived compatibility* – the degree to which the online shopping experience is similar to their typical shopping habits – as the primary factor that distinguishes the perceptions (Hansen 2005). Another important factor highlighted by Hansen's (2005) study is the purchase as a household instead of an individual choice, meaning that customers value simple and effective order procedures that are easy to understand and do not require high skills. The hybrid model streamlines the process of searching for items, making payments, and arranging delivery, enabling customers to shop efficiently from their preferred supermarkets at any time and from any location. According to the Country Manager of Mercadão (2024), OGD provides an attractive, easy-to-try alternative for those who would prefer to avoid grocery shopping altogether. On the other hand, replicating and translating this online for those who enjoy shopping involves various key valuable factors that need to be fully exploited. Hybrid delivery enhances customer value by addressing the essential need to simplify regular and high rates of replacement purchases (Kempiak and Fox 2002). To maximize this value, it is critical to deliver a high-quality experience across all customer touchpoints. Key factors include competitive pricing, user-friendly ordering and payment systems, fast and reliable delivery, and hassle-free refund processes (Anckar, Walden, and Jelassi 2002). It solves the problem of pushing carts up and down the aisles, waiting in queues to pay, and finding parking spaces while replicating the shopping experience by partnering with supermarkets.

CVP for End Customer:

The key components of the customer value proposition for the end customer are illustrated in Figure 4.

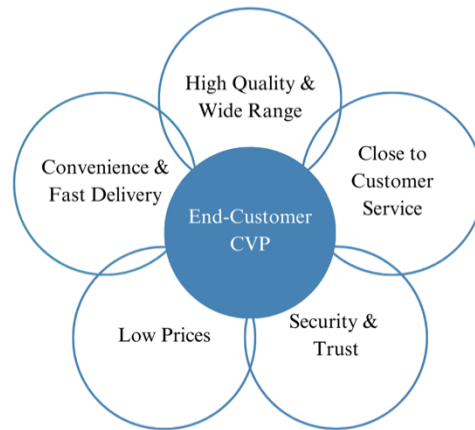


Figure 4 - Customer Value Proposition of the Hybrid Model for End-customer (Authors' illustration)

i. High Product Quality & Wide Range

The hybrid model focuses on delivering fresh and high-quality products to its customers, replicating the in-store quality. OGD often involves a significant proportion of perishable products that require careful handling due to their sensitivity to time and temperature during transit (García et al. 2022). According to the survey conducted, customers typically order packaged snacks and beverages, fresh products (vegetables, fruits), dairy products, meat, and seafood. The perishable nature of these products requires minimal storage time and controlled environments for both fresh and frozen items, creating strict constraints on delivery windows (García et al. 2022). Platforms typically break delivery schedules into one- or two-hour time slots to address these challenges, which is a method broadly preferred by customers (Survey_2 2024). Additionally, grocery orders are usually larger than non-grocery ones, which makes them more prone to logistical issues and human error, such as missing items or spoiled products (García et al. 2022). Hybrid companies address this by partnering with supermarkets for in-store, personalized grocery selection with quality control measures or dark store storage. This approach helps reduce spoilage and shortens

the time between producer and consumer, which is essential for perishable items. The quality of the products is also reinsured by reviews and ratings within the platform, which promotes a more informed shopping experience. However, this model still has room for improvement as product quality is still one of the main pain points for customers using this service (Survey_2 2024; Focus Group 2024). To ensure the delivery of high-quality products, logistics efficiency is paramount (García et al. 2022). Some hybrid companies implement weight restrictions and minimum order requirements to streamline logistics operations and enhance customer satisfaction (García et al. 2022). Hybrid models, by partnering with brick-and-mortar stores, provide a broad selection of groceries, ranging from food to personal care items and essential household goods. They also cater to specialized dietary needs, offering gluten-free, vegan, and lactose-free options (Ankar, Walden, and Jelassi 2002). For example, Continente collaborates with platforms such as Glovo and Uber Eats, enabling access to an extensive online product range of over 40,000 items (Head of E-commerce of Continente 2024). Additionally, platforms extend their partnerships to specialty stores, including pharmacies, local butchers, and organic markets, broadening their appeal and convenience for diverse customer needs (Ankar, Walden, and Jelassi 2002). With this extensive selection, customers feel confident that the online offerings match the variety and availability they would find in-store.

ii. Close to Customer Service

Service quality is a key differentiator in the hybrid model, blending the expertise and reputation of brick-and-mortar stores with advanced information insights. By collaborating with brick-and-mortar retailers, hybrid platforms create a perception of superior service quality (Head of E-commerce of Continente 2024). The experience provided on platform design and grocery shopping offered by hybrid grocery platforms is crucial. While physical supermarkets intuitively organize

products in-store with sensorial tricks, online platforms need to adapt by personalizing the service. This model enables customers to pick their typical and well-known items from brick-and-mortar stores and specify preferences (e.g.: green bananas) by employing personal shoppers trained to pick high-quality products (The University of Tennessee 2021).

Platforms try to create a personalized and unique grocery experience through personal shoppers. Some platforms use their drivers to go in-store and pick up the groceries according to specifications and then deliver them to customers' houses. If some item is missing or does not correspond to expectations, the customer can directly discuss it with the responsible person. This fosters a greater sense of responsibility in the driver and builds familiarity and trust in the customer, leading to a more satisfying experience overall (Country Manager of Mercado 2024). Establishing a personal connection and relationship between the delivery worker and the customer also plays a significant role in improving service quality. The Country Manager of Mercado (2024) said that the company tries to ensure that the same delivery person picks up and packs the groceries, fostering a sense of continuity and comfort for the customer.

iii. Convenience & Fast Delivery

Millennials and Gen-Zers deeply value ultra-simple and ultra-fast services. On-time delivery dominates customer satisfaction, and it is critical for customer choice and referral even after succeeding in product quality (Survey_2 2024). This is the biggest motivator to switch from supermarkets to online delivery. Nevertheless, meeting customer delivery expectations is one of the main problems in retail delivery when balancing fresh products and time delivery (García et al. 2022). A broad product assortment and varying temperature requirements necessitate faster deliveries, enhancing customer value by reducing wait times and making delivery slots a significant factor in customer choice (García et al. 2022). Delivery times vary by modality, including instant,

same-day, next-day, multi-day, and click-and-collect options (Aull et al. 2021). Instant delivery (within thirty minutes) is gaining popularity, with 33% of European customers in France, Germany, the Netherlands, and the UK valuing it for its ultra-convenience, as shown by Simmons et al. (2022a). Hybrid models reduce delivery times by utilizing physical stores as fulfillment centers and dark convenience stores, such as Glovo and Uber Eats, to provide express delivery (Keane 2021). For instance, Ocado offers one- to two-hour delivery, while Glovo promises deliveries of up to thirty minutes. However, such rapid service is impractical for larger orders due to distribution challenges (Simmons et al. 2022b).

Some hybrid companies, such as the partnership between Deliveroo and Aldi in 2022, offer click-and-collect services (Houlton 2024). Click-and-collect or “buy online, pick up in-store” has seen increased adoption, especially in the French market, as it allows customers to shop online and pick up in-store at their convenience (Galante, García López, and Monroe 2013). This option provides added flexibility, as it doesn’t require the extensive logistical scaling needed for same-day delivery or a wide range of delivery vehicles to handle different basket sizes. With the demands of fast-paced lifestyles, waiting at home for a delivery can be inconvenient, whereas pick-up allows customers to collect their orders at their preferred time, making it a more flexible choice for many (Galante, García López, and Monroe 2013). However, the adoption of this model is limited by supermarkets' storage capacities for click-and-collect orders, making broad implementation challenging.

iv. Low Prices

Customers have multiple forms of perceiving value in online shopping: timesaving, convenience, and competitive pricing (Mason 2019). The transparency of online platforms allows customers to easily compare prices and select the most cost-effective options, leading to increasingly price-

sensitive behavior (Mason 2019). This is especially relevant in OFD services, where many customers weigh delivery fees against personal savings in time, fuel, and effort. Palmer et al. (2000) divided customers into two segments: service seekers and price/efficiency seekers. The latter group values low prices and efficient purchasing processes, preferring options that offer the best balance of cost, time, and effort—not necessarily the lowest delivery fees, but the overall lowest cost. This preference is largely aligned with what the hybrid delivery model offers.

According to Aull et al. (2021), customers are generally willing to pay for convenience up to a certain point. During the COVID-19 pandemic, e-grocers promised to offer the same in-store grocery prices with low delivery fees, leveraging a circular BM connecting supermarkets, drivers, and end customers to achieve scalability (Aull et al. 2021). However, increased demand and logistical challenges led to higher operational costs. Consequently, despite the model's potential for scale, delivery fees have sometimes increased, which can frustrate customers. To maintain profitability within the customer value proposition, some e-grocers set mandatory minimum basket sizes, such as Mercadão with a minimum basket of 100€, balancing customer expectations with operational sustainability (Aull et al. 2021; Country Manager of Mercadão 2024). For instance, Glovo offers subscription models that include discounts and promotions on groceries, along with free delivery options, to enhance perceived value for customers (Head of South of Portugal at Glovo 2024).

v. Safety & Trust

Hansen's (2005) study found that customers generally do not perceive e-grocery shopping as risky and are willing to shop online. However, trust issues regarding product quality and the purchasing experience remain a pain point (García et al. 2022). The hybrid model addresses these concerns through partnerships with renowned brick-and-mortar retailers that have strong brand awareness

and loyalty. For example, Continente is one of the most well-known supermarket brands in Portugal, with almost 100% awareness; when platforms such as Uber Eats and Glovo partner with them, it increases trust in the purchase process due to positive brand perception and familiarity (Head of E-commerce of Continente 2024). Additionally, specific platform features such as self-service access to stock information and tailored substitution offers are critical in building customer comfort and trust in the platform (Aull et al. 2021). Furthermore, after the COVID-19 pandemic, consumers have exhibited panic buying behavior, making real-time tracking essential for reducing uncertainty about order statuses (Kumar et al. 2023). Moreover, the hybrid model mitigates perceived security risks through in-app payments with contactless payments, e-wallets, and in-store payment choices for click-and-collect services or cash on delivery (Kumar et al. 2023). To foster customer trust in e-grocers and encourage repeat purchases, platforms offer a money-back guarantee and easy return processes at the outset of the transaction (Hübner, Kuhn, and Wollenburg 2016).

CVP for Brick-and-Mortar:

i. Network Effects

The relationship between supermarkets and platforms benefits from direct network effects in a three-sided market, as illustrated in Figure 5 (Chu and Manchanda 2016). As the number of customers, supermarkets/retailers, or couriers on the platform grows, each group experiences increased value. Platforms with a larger customer base attract more supermarkets/retailers eager to partner and boost their order volume. As the number of customers, supermarkets/retailers, or couriers on the platform grows, each group experiences increased value. Platforms with a larger customer base attract more supermarkets/retailers eager to partner and boost their order volume. Higher order volumes, in turn, create more delivery opportunities, drawing more couriers to the

platform. Similarly, when supermarkets' products meet customer demand on the platform, it attracts even more customers, reinforcing the cycle of growth for all stakeholders (Strategy and Operations Manager of Bolt 2024). As the utility of the platform increases by all stakeholders, the value of the service and the willingness to pay increases. The attractiveness of the platform increases, which increases its network size, bringing volume sales potential for the partner (supermarkets/retailers).



Figure 5 - Network Effect Cycle on Hybrid Delivery Model (Authors' illustration)

ii. Digital Efficiency & Long-term Sustainability

Platform partnerships empower brick-and-mortar stores to attain digital efficiency and scalability by leveraging the logistics established by these platforms. They manage crucial operational tasks, particularly the last mile of logistics, which encompasses route and fleet management, utilizing their sophisticated delivery software systems and expertise. Platforms represent a more cost-effective solution for supermarkets looking to expand their online presence without heavy investments in digital infrastructure, logistics, or hiring delivery personnel (Kamel et al. 2022). Additionally, this collaboration helps supermarkets broaden their customer base and reach younger consumers, particularly Gen Z, who are adept at using these platforms and favor online shopping. By being present on platforms favored by this generation, brick-and-mortar stores can foster customer loyalty within this emerging market segment (Food Delivery Consultant 2024).

Although brick-and-mortar stores will always maintain a physical presence, it is vital to adapt to shifting market trends. Pure-play online platforms are growing rapidly and capitalizing on grocery opportunities by improving customer experiences (Kamel et al. 2022). By partnering with these platforms for last-mile delivery, brick-and-mortar stores can stay competitive, enjoy better profit margins, and increase scalability. This partnership addresses the challenges of entering the quick-commerce space, where speed and efficiency are paramount. By utilizing advanced logistics from platforms such as Glovo or Uber Eats, supermarkets can effectively respond to the soaring demand for ultra-fast delivery services, positioning themselves to excel in the quickly expanding quick-commerce sector (Kamel et al 2022).

5.1.2. Market Segment

The market segment of a BM focuses on identifying the distinct groups of customers a company serves or aims to serve, as well as understanding the size of these groups, their willingness to pay, and the appeal of each segment (Afuah 2014). Figure 6 summarizes the market segments identified.

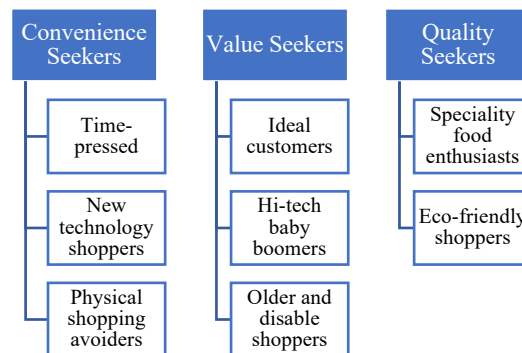


Figure 6 - Market Segments of the Hybrid Delivery Model (Authors' illustration)

The Covid-19 pandemic has broadened the customer base for OGD. Previously, OGD customers were mainly young, urban, and affluent families looking for the convenience of having large-basket deliveries brought to their homes. Today, the service has expanded to cater to a more diverse range of segments (Simmons et al. 2022b). The first market segment was identified: “convenience

seekers” – the set of customers who purchased groceries online before the pandemic. These are customers who value speed, ease, and flexibility in their shopping experience. Typically, younger, urban, and tech users. This group prioritizes fast delivery services and is often willing to pay a premium for this benefit. Within this broader category of “convenience seekers”, three subcategories emerge. The first is the “time-pressed” consumers, who are relatively insensitive to price changes because they prioritize saving time (Bauerová and Zapletalová 2023). This group is largely made up of busy professionals juggling work, family, and social obligations. Due to their hectic schedules, they frequently use such services and prefer same-day delivery services for moderate to large grocery orders. Another subcategory consists of “new technology shoppers”, typically younger individuals who are highly comfortable with digital platforms (Bauerová and Zapletalová 2023). They often opt for subscription-based services or meal kits, with regular deliveries of moderately sized grocery orders. Finally, there are the “physical shopping avoiders” who prefer to avoid visiting supermarkets in person (Bauerová and Zapletalová 2023). Instead, they seek services that offer ultra-fast delivery options or convenient pick-up alternatives. Another key customer segment is comprised of “value seekers”, individuals who are highly price-conscious and focus on budgeting. This group tends to include older, suburban, and family-oriented shoppers who make purchases frequently and often plan their shopping in advance. Their willingness to pay is generally lower, so they actively seek deals, discounts, and rewards, such as coupons and loyalty programs. The primary subcategory within this segment is referred to as the “ideal customer”, typically representing suburban families with dual incomes and at least one child (Bauerová and Zapletalová 2023). However, elderly shoppers also increasingly benefit from and engage with these services. They fall into two distinct subcategories: “hi-tech baby boomers” and “older and disabled shoppers” (Bauerová and Zapletalová 2023). The first one is drawn to online grocery services for

the convenience of shopping from home and, in some cases, for the novelty of using such technology. On the other hand, the second category of older shoppers is characterized by lower incomes and often living alone. Their primary motivation for using these services stems from health-related challenges that make traditional in-store shopping more difficult (Bauerová and Zapletalová 2023). Disabled shoppers are people who rely on the assistance of home-helpers for daily tasks and use online platforms for the convenience of the service (Heikkila et al. 1998 cited by Anckar et al. 2002). The last category encompasses the “quality seekers,” who are quality-conscious and health-oriented customers. Their demographics include middle-aged, high-income, and educated consumers. They are loyal to the brands and stores they trust and look for quality, freshness, and sustainability. They have preferences over delivery and are willing to pay a premium to enjoy quality and variety. The first subcategory is called “specialty food enthusiasts”, who are consumers who seek unique and specialty foods and may purchase moderate to large baskets only from niche grocery retailers. The “eco-friendly shoppers” are the second subcategory and incorporate customers who prioritize sustainable and ethical practices, such as rescuing surplus, reducing food waste and supporting ethical sourcing practices, that are delivered at their homes frequently.

In summary, segmentation is going towards psychology and behavioral factors, disregarding demographic factors. Purchasing from OGD platforms divides customers into three factors such as converted to the online purchases, benefit-focused (due to the easiness, convenience, and timesaving of purchasing their groceries online), and fearful (Bauerová and Zapletalová 2023).

5.1.3. Revenue Model

The revenue model comprises how many customers get to pay, how much for what products/services, when and how. It is about reaching the maximum number of customers who like the customer value proposition enough to pay a price close to their willingness to pay (Afuah 2014). The grocery delivery sector operates with thin profit margins, making it essential for hybrid models to carefully balance and optimize both revenue and expenses by seeking reliable revenue sources. Hybrid models derive income from two main customer tiers: end customers and brick-and-mortar (partners) as showcased in Table 2.

End Customer					Brick-and-Mortar		
Delivery Fees			Service Fees		Commission Fee		In-App Advertising
Distance	Basket Size	Speed	Personal Shoppers	Couriers	Average Ticket Price	Volume of Orders	Level of Visibility Ad Type
Per-Order Model			Subscription Model		Revenue-Sharing Model	Exclusive Partnership Deals	Tiered Listing Fees

Table 2- Revenue Sources of the Delivery Model according to Customer Tier (Authors' illustration)

End Customers fees

As previously stated, customers are willing to pay for convenience until a certain point, being very price-sensitive regarding delivery fees (Galante, García López, and Monroe 2013). This sensitivity often leads consumers to compare platforms and select the one offering the lowest overall cost (Aparicio, Metzman, and Rigobón 2023). In this hybrid model, delivery fees are a primary revenue source. According to survey results, 45.20% out of the 115 respondents indicated they are willing to pay between €2 and €4 per delivery transaction. With these values, profitability may seem hard to obtain. The delivery fee structure is often based on factors such as distance, basket size and availability of nearby people (speed) (Head of South of Portugal at Glovo 2024). Belavina's, Girotra's, and Kabra's (2017) study highlights the price variation on geographic distance, with

urban deliveries often being less expensive due to shorter travel distances, while suburban deliveries incur higher costs. Delivery fees also adjust according to the amount spent; smaller orders may have proportionally higher fees relative to their order value, while more expensive orders often benefit from reduced delivery fees (Head of South of Portugal at Glovo 2024). The mode of transport also influences this model: smaller orders may be delivered by motorcycles, which cost less to operate, while larger orders require cars, resulting in higher operational costs and, subsequently, higher delivery fees (Country Manager of Mercado 2024). In addition to the delivery fee, customers pay a service fee for gig drivers or personal shoppers, often ranging from 5% to 10% of the total order value (Digital Enterprise 2023). These personal shoppers are typically gig drivers who work with the platform, carefully selecting grocery items based on customer specifications (Country Manager of Mercado 2024).

The delivery fees usually comprise two different models: the *per-order model* where customers pay per usage and the *subscription model* where customers pay a membership fee monthly or annually for free home delivery or exclusively access to discounts during a given period (Belavina, Girotra, and Kabra 2017). The subscription model may also include access to exclusive discounts or prices, which increases the size of the basket by spending more monthly and purchasing more frequently, as shown in a study by Wagner, Pinto, and Amorim (2020). This represents a solid and predictable source of revenue, which companies can personalize the packages of features and benefits to cater to the different customer segments. For example, Ocado's "Smart Pass" subscription service offers two options: a midweek plan, covering deliveries only from Tuesday to Thursday, and an anytime plan, which includes delivering during weekends. Subscription fees range from \$3.99 to \$8.99 per month, aligning with the average charged by other major platforms (Ocado 2021).

Brick-and-Mortar fees

Platforms generate revenue through commissions charged to their partners, with commission rates adjusted based on factors such as order volume and average ticket size. Partners with higher order volumes and larger ticket prices often negotiate lower commission rates due to their stronger bargaining power (Head of South of Portugal at Glovo 2024). Conversely, independent and local stores generally pay higher rates. For instance, in France, Uber Eats applies lower commission fees to Carrefour supermarkets than to smaller, local businesses, reflecting Carrefour's greater negotiation leverage.

The revenue models comprise sharing revenue and exclusive deals. In the revenue-sharing model, both platforms and partners/retailers receive a percentage of the order value for each transaction through the platform (Head of South of Portugal at Glovo 2024). For each transaction, the platform receives a pre-agreed commission fee ranging from 15% to 30% of the order value (Food Delivery Consultant 2024). Additionally, platforms might charge a 6% fee for pick-up orders (Uber Eats n.d.d). This model fosters long-term relationships as both partners and the platform benefit from increased sales. Some hybrid models also use exclusive partnerships, working closely with selected retailers to create unique offerings tailored to their customers' needs. In such cases, commission structures may involve marked-up prices, but these deals offer retailers a dedicated platform presence and targeted customer engagement, which can foster stronger brand loyalty and drive higher sales (Afuah 2014). An example is Mercadão, which works exclusively with the retailer Pingo Doce, negotiating an exclusive commission fee (Country Manager of Mercadão 2024).

These delivery platforms serve as digital marketplaces for retailers, giving them increased visibility and a broader customer reach. Retailers often invest in in-app advertising or pay for premium placements on these platforms to enhance their brand awareness. Companies employed tiered

pricing to supermarkets, fomenting pricing tailored to different businesses (Afuah 2014). Platforms such as Uber Eats offer low-cost to premium packages with different delivery and advertising advantages. For example, the low-cost package includes lower delivery fees but less visibility within the app, being only visible if searched by the customers (Uber Eats n.d.d). The premium package includes higher commission fees, monthly ads, and user subscription benefits (Uber Eats n.d.d). Retailers must pay higher prices to enjoy increased visibility within the platform, fostering brand promotion. Such promotional features allow retailers to appear higher in search results, appear more frequently in advertising slots, and show up in suggestions and recommendations, which can significantly boost brand awareness and drive sales. According to the Head of South of Portugal at Glovo (2024), this kind of exposure is becoming a critical revenue stream for delivery platforms, reflecting a broader trend where platforms capitalize on their marketplace status by offering prioritized visibility to retailers who are willing to pay.

Pricing Strategies

According to Afuah (2014), a company's pricing model is essential for the definition of its revenue model. Pricing determines how much the customer will pay for the customer's value proposition. Companies need to set a price point near customers' reservation price (willingness to pay). Setting the right price is crucial to converting customer value propositions and maximizing revenues. This makes carefully structured pricing models essential to a hybrid platform's revenue strategy. Hybrid platforms elaborate delivery fee pricing models to cater to different customer segments as shown in Figure 7.

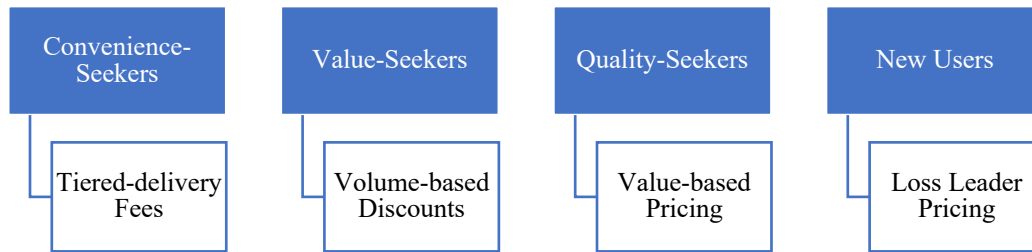


Figure 7 - Pricing Strategies according to Market Segment (Authors' illustration)

Firstly, for the convenience-seekers segment, time is critical for their value recognition. As suggested by Belavina, Girotra, and Kabra (2017, 1782), tiered delivery fees apply for this segment, with higher prices charged for instant and same-day delivery options, while lower fees are applied to less time-sensitive choices. Additionally, click-and-collect options—where customers pick up orders themselves—are often priced more affordably, representing a more sustainable delivery approach.

For the value-seekers segment, hybrid grocery platforms leverage volume-based discounts as part of their pricing strategy. This approach rewards frequent users by offering discounts and promotions for larger basket sizes, encouraging customers to increase their average spending per order. By driving higher transaction values, this model helps offset operational costs and boosts profit margins. Volume-based discounts are often integrated within subscription programs, such as Ocado's Smart Pass, which provides additional benefits and savings to customers who make frequent purchases, enhancing loyalty while supporting sustainable revenue growth (Ocado 2021). Pricing can also be tailored according to delivery zones. Price sensitivity is heterogeneous, as household price sensitivity is inversely related to the distance to the closest physical store. For instance, customers in remote areas are generally less sensitive to price changes due to the higher costs associated with in-person grocery shopping, making them more likely to accept higher delivery fees (Cebollada, Chu, and Jiang 2019). A hybrid might offer *subscription models* for

locations near dark convenience stores or fulfillment centers due to operational optimality, while for dispersed locations, the *pre-order model* is the most efficient pricing strategy, charging higher fees (Belavina, Girotra, and Kabra 2017).

For the quality seekers segment, the hybrid model includes value-based pricing applied to specialized products or services. Customers who follow a special diet and are interested in organic, vegan, or gluten-free groceries from specialty stores may be willing to pay a premium for these products (Survey_2 2024). In addition, eco-friendly shoppers can choose click-and-collect delivery with lower fees and promote green practices on delivery logistics.

To attract new users, platforms often use loss-leader pricing by offering either a discount or free delivery on the first grocery order, provided a minimum spending threshold is met (Afuah 2014; Ocado n.d.). Initially, this approach may result in losses, but by partnering with retailers, platforms can cap those losses. This strategy can effectively boost customer acquisition and foster brand loyalty.

These different revenue streams support the hybrid model by creating value for both customers and partners, increasing their willingness to pay by offering an exclusive and reliable service in which quality is ensured through partnerships. Among these, *subscription models* have emerged as a highly stable and promising revenue source for long-term business sustainability, as noted by Belavina, Girotra, and Kabra (2017). Additionally, positioning the platforms as marketplaces has become a critical revenue stream. The demand for in-app promotions and advertising will become even more relevant in this model's revenue sources as both the partner and the platform benefit from increased sales and the potential to leverage shared interests and market synergies.

5.1.4. Growth Model & Cost Structure

Companies operating within the OGD sector have found profitability challenging to achieve. While some firms have managed to reach break-even points or record modest profits, profitability remains elusive for most (Simmons et al. 2022a). The Head of E-commerce of Continente (2024) highlighted that the retail industry typically operates with very thin profit margins. When factoring in the additional operating costs required for delivery services, these margins are further reduced, creating significant challenges for profitability in the grocery e-commerce sector. Due to the reason mentioned, the further analysis is more focused on the costs companies incur, i.e., the cost structure, instead of how the companies within the BM grow profitable, i.e., the growth model. A McKinsey study further illustrates the impact of delivery on profit margins: when customers purchase groceries directly in-store and handle their own transportation, retailers achieve an approximate profit margin of US\$4 on a US\$100 grocery basket. Conversely, when the same basket is delivered to the customer's home, this profit margin shifts to a loss of around US\$13 (Simmons et al. 2022a). When delivering the goods, companies must overcome the logistical problem, which is influenced by the fluctuation in demand, that impacts the efficiency of both order picking and home delivery (Kämäräinen and Punakivi 2010): the two primary cost drivers in the e-grocery BM as referred by the Head of E-commerce of Continente (2024). Achieving cost-effectiveness in this model can be accomplished by either providing consumers with alternative methods for receiving the goods or by enhancing the efficiency of picking processes and home delivery. On the one hand, in terms of the picking process, store-based picking is not cost-efficient since the store is not designed for the picking but for sales (Kämäräinen and Punakivi 2010). However, they are an opportunity to offer the full product range to customers and to easily change the product choice when the initial one is not available (Country Manager of Mercado 2024). On the other hand, home delivery, the other

big cost driver, has been offered using different models and time windows. To address the mentioned costs, supermarkets have directed themselves to a *Team up Strategy* (Afuah 2014), increasingly pursuing strategic partnerships, acquisitions, and alliances to leverage shared resources and improve operational efficiency. This approach reflects a concerted effort to enhance the financial sustainability of OGD services. Some retailers have prioritized partnerships with companies encompassing the hybrid BM to help reduce operating costs and provide increased flexibility for both them and their customers (Rougès and Montreuil 2014).

For the companies operating within the hybrid model, although they do not incur any direct inventory or delivery costs, they lose the flexibility of setting the market prices. Their costs are minimal: warehousing and inventory expenses are outsourced to local stores, delivery costs are shifted to gig-economy workers, and transportation relies on the personal vehicles of the personal shoppers (Li, Chan and Levallet 2022). According to the Food Delivery Consultant (2024), the personal shopper or driver is the platform's largest recurring expense, receiving approximately €3 in compensation per order, based on an average order value of €30. No initial investment in physical assets is required, only in the online platform, which is the most current cost to maintain the proper functioning. However, despite these lower operational costs, revenue levels remain insufficient to offset them, resulting in low net margins for companies operating within this model. Apoorva Metha, founder of Instacart, highlighted that higher service fees were necessary to cover the significant costs of maintaining the technical infrastructures required for virtual transactions, which involve a workforce of engineers, designers, and technicians (Sorvino 2021).

5.1.5. Capabilities

Capabilities consist of both resources and activities. Every entrepreneur faces the challenge of building the right set of capabilities to take advantage of the available opportunities. This combination of resources and activities is designed to create and capture value, which is then applied to deliver an effective customer value proposition, target the appropriate market segments, support the revenue model, and enable the firm to grow profitably (Afuah 2014).

Interaction of Resources and Activities

Considering the specific context of grocery delivery, and within the companies adopting a hybrid BM, the interaction between resources and activities assumes relevance in four main areas: Technology, Data and Analytics, Logistics and Brand and Customer Relationship.

i. Technology

Technology is a crucial asset for OFD companies. The need to stay competitive through technology is underscored by the industry's high rate of digitalization. The focus on technology arises from the need to efficiently handle high transaction volumes while meeting customer expectations for convenience and reliability, through the platform (Dubosson-Torbay, Osterwalder, and Pigneur 2002). Technology enables platforms to offer a user-friendly experience, offering a wide product selection, convenient delivery options, and features such as real-time order tracking and integrated payment systems, greatly enhancing the user experience and broadening the service accessibility (Hübner, Kuhn and Wollenburg 2016). Hays, Keskinocak, and de López (2005) highlight that a key differentiator for each platform is the integration of e-commerce and logistics systems. For instance, Amazon in the UK utilizes AI and robotics to provide a smooth shopping experience, merging physical and online shopping into one cohesive platform. The partnership between the brick-and-mortar and the pure player can provide comprehensive service offerings, helping

traditional retailers to stay updated with technological advancements and gain customer trust, while minimizing the need for large-scale infrastructure investments (Chambers 2018; Short et al. 2022). For instance, as mentioned earlier, Ocado has created a distinctive AI-driven technology alongside its proprietary software and hardware (Ocado Group n.d.a). The “Ocado Smart Platform” serves as a comprehensive e-commerce solution designed to enhance efficiency in fulfilment centres, ensuring the consistent delivery of fresh products to customers (Ocado Group n.d.a). It utilizes AI and automation to navigate complex supply chains, effectively managing large volumes and perishability. For example, “Ocado Intelligence Automation” incorporates robotics that proficiently handles stock management and retrieval from storage (Ocado Group n.d.a). Since 2013, Ocado has partnered with Morrisons in the UK, providing the technology to its partner, enabling Morrisons to leverage Ocado’s fulfillment center capabilities and increase order volumes (Wright 2024).

ii. Data & Analytics

Data is a powerful resource to be collected by platforms, to ensure the correct strategic decisions and to enhance the service offerings. With the help of predictive analytics and AI, companies can forecast future demand, optimize inventory levels, and improve delivery logistics (Manyika et al. 2011). Each company can rely on two fundamental types of data: customer data and operational data. According to Chintala, Liaukonytė and Yang (2023), customer data can be categorized into three main types. The transactional data, which includes historical purchases and frequency, across both online and offline stores. This type of data provides insights into what customers buy and how often they shop. Secondly, behavioral data, collected through online platforms and loyalty programs, reveal preferences, browsing patterns, and responses to marketing campaigns, offering

a deeper understanding of customer engagement. Lastly, demographic and psychographic data provide valuable insights into customer lifestyles, needs, and motivations, helping businesses tailor their offerings to meet diverse expectations.

Operational Data provides real-time visibility into the efficiency and effectiveness of the entire supply chain (Liashenko and Yakymchuk 2023). It can consider the inventory data, consisting of real-time tracking of inventory levels across warehouses and physical stores, which is vital for effective stock management. Order flow data plays a crucial role in understanding customer behavior and preferences by analysing order volume, timing, and composition. This insight helps retailers understand demand patterns, optimize resource allocation, tailor the user interface and product selections, and improve the overall shopping experience (Pramudito et al. 2021). By leveraging the data from delivery performance, platforms can track delivery times and optimize routes, ensuring timely deliveries and managing customer expectations. Singh and Söderlund (2022) emphasize the consumer preference for home delivery, making efficient delivery performance a key factor in customer satisfaction. Lastly, financial data, keeping track of costs related to picking, packing, delivery, and returns provides better control over operational expenses and supports profitability analysis. Liashenko and Yakymchuk (2023) consider the narrow profit margins as the major financial challenge in e-grocery due to high delivery and collection costs.

In the e-grocery business, data-driven decision-making represents a golden rule to create value.

Utilizing advanced analytics helps inform decisions regarding assortment, pricing, and promotions, which can boost sales and enhance profitability (Sawall et al. 2024). Additionally, a strategic decision support system that leverages financial and operational data facilitates informed decision-making, optimizing delivery processes and further improving profitability (Liashenko and Yakymchuk 2023).

iii. Logistics Network

A strong logistics network is an essential resource for grocery delivery services. However, various strategic challenges need to be addressed to ensure smooth operations. Efficient logistics not only reduce delivery times but also reduce operational costs and their environmental impact, which are becoming increasingly critical factors in customer decisions (Boyer and Hult 2005). All the activities from the pick-up to the last-mile delivery are part of the Order Fulfilment Process (OFP), which can be observed through the strategic planning framework adapted from Hübner et al. (2016). The OFP has two key phases: Back-End Fulfilment and Last-Mile Distribution. The framework in Figure 8 emphasizes that the strategic choices made in both phases directly impact the efficiency and profitability of the business.

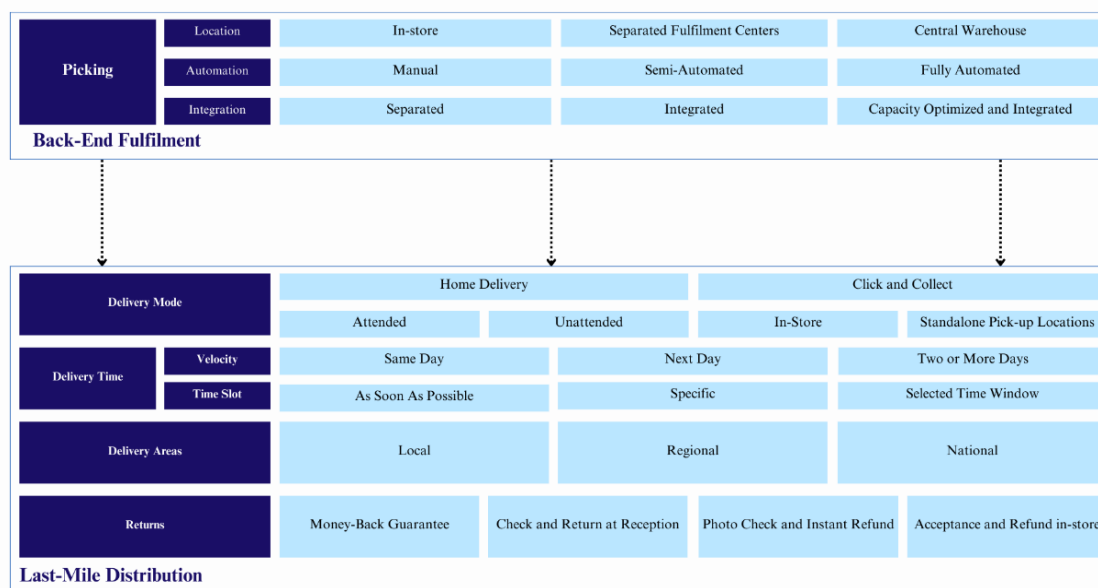


Figure 8- Order Fulfilment Process Strategic Framework (Adapted from Hübner, Kuhn, and Wollenburg 2016)

The primary challenge to which the OFP is highly relevant is the designing of the distribution network, which consists of the area each distribution center will serve and the designing infrastructures, such as stores, specialized fulfillment centers, central warehouses, or a combination of these, where online orders are fulfilled. The most straightforward and resource-efficient

approach for a brick-and-mortar retailer to enter the online grocery market is by offering a click-and-collect service. In the hybrid model, order picking at the store can either be performed by the retailer's in-house staff or outsourced to couriers who are integrated into the platform's system. To capitalize on this approach, stores adjusted their layout to facilitate in-store pickup, designating dedicated pick-up areas and fully integrating store inventory with online platforms. Existing brick-and-mortar stores serve as valuable resources for fulfilling orders and enabling customer pick-ups. However, dedicated fulfillment centers are significantly more efficient and often become essential for companies that have been operating online grocery channels for a while. These centers allow for streamlined operations, enabling scalability and sustained growth within the industry (Hübner, Kuhn, and Wollenburg 2016). Strategically locating the centers has a positive impact on transportation costs due to higher proximity to consumers' homes, with a consequent reduction in delivery time and increased customer satisfaction. Another way to leverage the warehouse network is by utilizing it for both online sales and traditional store distribution. This approach enhances efficiency through several benefits: increased opportunities for risk pooling, which lowers inventory levels and reduce stock-outs; shared resources, which cut overhead expenses; and decreased inbound transportation costs (Beamon 2001). A significant challenge of using a warehouse to manage both online and in-store orders lies in integrating the systems for handling, inventory, and storage (Hays, Keskinocak, and de López 2005). Regarding Last-Mile Distribution, the first condition to manage this phase efficiently is to optimize delivery routes and manage time windows. High demand for specific time frames, travel uncertainties due to traffic, and tight schedules further complicate the process (Hays, Keskinocak, and de López 2005). Platforms operate proprietary software that allows freelancers to register as couriers. As customers place orders, the system automatically dispatches them to available couriers, who can then choose to

accept or decline the assignment (Country Manager of Mercado 2024). With this system, the platform automatically assigns couriers to the orders. However, platforms possess a lack of control over them, which might create schedule lapses.

iv. Brand and Customer Relationship

For hybrid players in the OGD sector, their brand and customer relationships are valuable assets that can be leveraged to create and capture value in such a competitive industry. Platforms can capitalize and take advantage of brick-and-mortar's already established customer loyalty base. Furthermore, a strong brand is an essential differentiator (Caine and Koetter 2018). Such distinction can be achieved by providing a seamless and harmonious customer experience across all touchpoints, ensuring consistent brand messaging, product availability, and service levels, regardless of whether the customer interacts online or offline (Head of E-commerce of Continente 2024; Hübner, Kuhn, and Wollenburg 2016). In the competitive grocery sector, brand awareness is fundamental for attracting and retaining customers. Brand perception is one of the main drivers of customers purchasing decisions, underscoring the competitive advantage provided by a strong brand image, transcending the actual products or services offered (Afuah 2014). Brands need to maintain consistent messaging and service quality across all platforms to build trust and strengthen their image (Cocco and Demoulin 2022). Additionally, the rise of retail media as a significant revenue stream for grocery retailers highlights how powerful brand recognition can be in boosting profitability through targeted advertising and promotions (Sawall et al. 2024).

5.2. Advantages & Vulnerabilities

5.2.1. Advantages

The BM presents several key strengths that set it apart from the remaining models that were analyzed.

Market Reach and Brand Awareness

The hybrid model, as it entails a partnership between two entities, namely a marketplace and a grocery store, allows both companies to expand their reach and improve their market penetration. The combined customer base of both partners is a significant asset in the partnership as it can lead to potential cross-promotion opportunities and promotion of each other's services. The marketing activities when done jointly by both partners in the context of a partnership may help to reach a wider audience and boost sales volumes since each partner may introduce themselves to an already established audience of the other. These campaigns also prove to be effective in reaching new audiences and improving brand awareness. At the same time, brand loyalty may transfer from one company to the other, especially when they both have similar values and goals (Vitasek 2024). According to research done by Javadi et al. (2024) this is also relevant since the more awareness there is in the offline segment, the lower the necessary marketing investment when introducing online delivery.

International Expansion and SMEs

Brick-and-mortar stores already have well-developed physical infrastructure, regarding stores and distribution centers. Both partners may also have relevant insights into the local market, consumer behavior, and local regulations. This model may thus benefit geographical expansion as tapping into new markets often proves to be challenging, especially if the market is already well established. Sharing insights concerning the market and establishing a structure that will reward both partners in the long term is a highly effective way of expanding internationally (Expert Panel 2022). At the same time, smaller players could find it hard to establish an efficient online delivery system. A partnership may help to overcome these challenges. Q-commerce was in this way a significant development benefiting many SMEs (Talabat 2021).

Customer Value Proposition

The combined value proposition also becomes stronger. Omnichannel strategy is becoming increasingly important. With this approach, both partners may be able to offer a better customer experience. Customers will have the option to buy through both offline and online channels depending on their preference, or even a combination of the two (e.g. buy online and in-store pick-up option). Since the pandemic and beyond, offering an omnichannel experience has become imperative for success (Briedis et al. 2021).

The hybrid model creates the opportunity for platforms to offer a wider product range, especially if they partner with several supermarkets simultaneously. Exclusive partnerships may also contribute to a stronger position in the market. If the company can attract many grocery stores and expand the product range significantly while also having a strong customer base, it may be able to benefit from network effects and create a significant competitive advantage in the market (Mitzner 2022; Strategy and Operations Manager of Bolt 2024). The strength of the networks that platforms such as Bolt and Uber create is more significantly affected by local competition, as opposed to some other well-known network effects, for example, social media. In this way, the local markets may not be as defensible since the network is structured into several local clusters of users (Zhu and Iansiti 2019).

In this BM, there can also be significant efficiency improvements thus further boosting the customer experience. The core competencies of a technological platform and a brick-and-mortar grocery store are different. Each of them handles a different part of the value chain. This allows both partners to focus on their core competencies which can in turn improve efficiency and quality of service (Alkhatib 2017).

Improved Operational Efficiency

Following on the previous point, the concept of improved operational efficiency is also quite relevant. The OFD is a low-margin industry with high competition. In this context, optimizing the costs becomes quite important to ensure profitability. Value chain analysis suggests that outsourcing non-core activities is important for a company to utilize its resources better and focus on the area that is essential for its competitive advantage in the market. Synergies and economies of scope that partnerships can create may also be beneficial. To this extent, the hybrid model offers the possibility for each partner to work on the area they are best at. This approach helps to achieve a more beneficial cost structure and operational efficiency (Alkhatib 2017; Head of E-Commerce of Continente 2024; Tardi 2024).

Risk Sharing and Reduced Overhead Costs

The hybrid model may allow for risk sharing, thus mitigating potential threats. Partners share infrastructure and logistics capabilities, resulting in lower needs in terms of capital expenditure and operational costs for each one individually (Scott 2022). Companies may share some back-office activities such as marketing, leading to further cost savings (Marks & Spencer n.d.).

Data

Lastly, the data that both partners gather can be a significant advantage. The online approach offers the advantage of having a better overview and more data regarding the customer journey. It can help to improve inventory management concerning efficiency, forecast demand, and reduce inventory stockouts. Since groceries are often categorized as perishable products, better inventory management can significantly reduce waste, which is also important for Corporate Social Responsibility purposes (Country Manager of Mercado 2024; Marks and Spencer Group PLC & Ocado Group PLC 2019; Ocado Group 2023).

Innovation Capabilities

The hybrid model can also help with improving innovation capabilities. By partnering with a disruptor, a retailer can gain a significant advantage in the market while the disruptor will benefit from the scale that the retail partner offers. It also offers the benefit of helping both the platform and the retailer to build the capabilities needed to compete in the online space much faster than they would have been able to do organically. At the same time, it allows for flexibility, to the extent that each side gets only the capabilities it needs while also making exit costs lower if needed (Rickert and Finck, 2022).

Consultancy and Support

Many platforms such as Uber or Glovo, offer personalized support to companies in e-commerce, digital marketing, and data analytics. This can be an asset for the grocery store and foster a stronger partnership base (Head of South of Portugal at Glovo 2024; Uber n.d.a). Larger companies, such as Uber, may have dedicated consulting arms to offer personalized support to clients. A strong network of partnerships can help to build expertise in the area to make other services more attractive. For instance, Uber may benefit in the context of the consultancy services they offer with their Uber Mobility Solutions, while Ocado used the joint venture with M&S as a potential to continue improving the technological solutions they offer as part of the Ocado Smart Platform (Uber n.d.b; Marks and Spencer Group PLC & Ocado Group PLC 2019; Ocado Group n.d.b).

5.2.2. Vulnerabilities**Dependency on the partners**

Since the service involves a partnership, both partners are integral to its delivery, resulting in a higher level of dependency compared to operating independently. Consequently, neither partner

can fully control the customer experience on their own. Despite the benefits this can create, it makes room for some challenges as well. The service quality overall may be impacted by the processes that each partner has in place, regarding their operational efficiency and order-picking capabilities. Platforms such as Glovo often do not do the picking themselves, and the supermarket has dedicated personnel to handle this part. If they are inefficient or take too long, this may significantly impact the service quality. At the same time, inventory management, usually handled by the food brand, may also have a significant impact on customer satisfaction. Supply chain disruptions, including delays, issues with transportation, or labor shortages can create stockouts. If there are frequent stockouts, the customers may not receive the products they ordered. In cases where this happens, especially if it happens frequently, it will lead to customer dissatisfaction and may damage the reputation of the platform (Head of South of Portugal at Glovo 2024; Oracle Retail n.d.).

This can also be applied to the platform that handles the logistics. If they are inefficient when it comes to logistics, they may not meet the promised delivery schedules. As a result, this can also lead to customer dissatisfaction, creating the possibility of canceled orders, damaged products, and possible negative association with food brands as well (Country Manager of Mercado 2024). This is consistent with the insights gathered from the conducted focus group.

Lastly, when food brands rely on third-party platforms such as Uber Eats for the delivery process and the management of the entire customer experience cycle, customer loyalty may eventually switch from the food brands to the platforms (Erickson 2023).

High Competition and Market Saturation

As previously mentioned, this industry is often based on cost leadership and price wars. This is because price is currently the major factor that affects consumers' purchasing decisions when it comes to the grocery market in Europe. The economic downturns proved to further exacerbate this

trend, as customers may be affected by financial difficulties. Furthermore, in such a scenario, a major focus lies on costs. The delivery services imply costs regarding logistics, the technology associated with the platform or website and the last-mile delivery. These costs may often prove to be challenging for food brands to incur since they operate on very thin margins already (Delberghe et al. 2024; Head of E-Commerce of Continente 2024). The fees that some platforms charge are usually variable. They can present a significant burden, especially for smaller stores (Erickson 2023). The intense competition also means that staying outside this business usually a precarious option, so online delivery becomes another way to fight for market share despite often being an unprofitable solution (Delberghe et al. 2024; Head of E-Commerce of Continente 2024).

Technological Challenges

In the hybrid model, it is necessary to integrate different systems to function in an online setting. Being able to synchronize the data in real-time and streamlining the ordering, fulfillment and delivery processes becomes crucial in this setting to ensure accurate demand forecast and timely delivery and stockout minimization. Ensuring compatibility between the different POS (point of sale) is also crucial (Ocado Group 2023; Uber Eats n.d.c).

At the same time, the sharing of data raises cybersecurity risks. Data protection practices such as encryption of both at-rest and in-transit data (Gupta 2020). Enabling strong authentication by implementing multi-factor authentication and relying on strong authentication factors such as possession factors, which rely on the person being in possession of something or inheritance factors, which rely on biometric data, is also key to making sure that customer data is safe. This will ensure that only authorized individuals have access to the data (Malwarebytes n.d.). Compliance with data protection regulations such as GDPR is also crucial, especially in the hybrid model setting (Gupta 2020).

5.3. Drivers of Change

Companies operate in dynamic environments and their BMs are affected by ecosystems composed of industry and macro environments (Afuah 2014). Scenario planning literature of Intuitive Logics School highlights drivers of change as factors or forces not controlled by organizations that will shape dynamics and strategic focus (Amer, Daim, and Jetter 2013). These forces must be considered to tackle future opportunities and threats and generate strategic options impacting BM components. The future will result from the interaction of multiple factors, including trends with low uncertainty but high impact across stakeholders, weak signals that are early-stage developments without a defined impact and structural uncertainties that will shape the scenarios (Amer, Daim, and Jetter 2013).

The macro-environment plays a vital role in a company's growth and success, but it also comes with challenges that need to be addressed. While external factors influence company operations, these influences are beyond direct control, requiring businesses to adapt their models and strategies to face external threats. Conversely, they can also discover and leverage opportunities for innovation (Afuah 2014). Appendix 3 contains the extensive PESTN analysis of the OFD environment. The main impactful trends include technology with artificial intelligence shaping new personalized experiences online, enabling the optimization of routes, and real-time tracking, which offers customers increased security and satisfaction (Costa 2024). Allied with the evolution of big data, Europe's industries and services can be transformed by using analytics and transforming data into innovative and complete products that can fulfill customer needs (European Commission 2024). Another wildcard is automated delivery, either through drones or vehicles starting to emerge among players such as *Amazon Prime Air*. This system consists of individual packages' autonomous delivery within 30 minutes (Lok 2017). In 2024, Bolt, in partnership with

Starship Technologies, launched autonomous robots that deliver groceries in Tallinn within a 3km radius of stores (Bolt 2024). This aligns with environmental and legal factors regarding the usage of green technologies as renewable energy sources and reducing single-use plastics (European Commission 2019). Another critical trend noted by all experts is the attempted regulation of gig economy workers. The approval of regulations that require the recognition of freelancers as employees would significantly increase fixed costs and the current BM of OFD platforms will become unsustainable, as they cannot cover courier wages and effectively manage the complexities of such large fleets. Furthermore, the cultural and shopping habits differences in Europe create major market opportunities in less developed and mature regions. Understanding their preferences might push OFD for a more blended experience of online and in-store (Head of E-Commerce of Continente 2024). Due to the lower disposable income and slower wage growth, price has become a critical point in purchasing behavior (McDougall 2024; Romei 2024). Consumers are increasingly downtrading and seeking promotions to ease budget pressures, positioning discount stores as a more attractive option. This shift negatively impacts large-basket retailers such as Mercadão, as shoppers now prefer to make smaller and more frequent purchases. Omnichannel shopping is becoming the norm, with European consumers using both online and offline channels to find the best options thus, the success of OGD will also depend on how well they can sustain attractive prices in the long run (Purta et al. n.d.). Current trends among Gen Z emphasize health, sustainability, and the influence of social media. This generation shows a strong willingness to pay a premium for healthier and more sustainable products (Adams, Alldrege, and Kohli 2024). Additionally, social media plays a dominant role in shaping their purchasing decisions, serving as the most influential factor when choosing what to buy (Haan 2024).

Lastly, extreme weather conditions can cause significant disruptions to supply chains, which are increasingly interconnected on a global scale. A disruption in one region can trigger cascading effects across other parts of the world, impacting costs and operations. Given the growing frequency of such events in recent years, supply chain resilience has become a critical concern (Wang 2024). Businesses must adapt to the growing demands by looking into renewable energy sources and reducing the dependency on fossil fuels. This way, companies can ensure they are good corporate institutions and play an active role in ensuring long-term sustainability for the planet (Ordorica 2024).

Regarding market trends, Appendix 4 provides a summary of the findings derived from primary data sources, including surveys, a focus group, and customer interviews. Understanding customer needs is crucial for developing strategic recommendations. While customers have different motivations for shopping online, it is vital to consider the two segments: users and non-users of the service. For both groups, the primary factors influencing platform choice are delivery fees—many prefer free or low-cost delivery options – along with discounts, promotions, and fast delivery. Customers typically purchase perishable goods, which makes them hesitant to use this service. Users have highlighted several pain points, including inaccuracies in product delivery, challenges with the refund process, and complications during the purchasing process substitutions. Overall, the insights reflect lower customer trust in the quality of these platforms and higher sensitivity to prices.

5.4. Scenario Planning

5.4.1. Uncertainties & Ranking of Key Uncertainties

To explore the future of OGD and how businesses can successfully adjust in this competitive market, it is crucial to pinpoint the key uncertainties influencing this future. After identifying the

main trends and factors that will shape the environment, the focus lies on understanding the underlying patterns and driving key uncertainties. Based on the analysis above, Appendix 5 was built. It outlines the uncertainties and associates two contrasting configurations with them. The level of uncertainty and the level of impact on the OFD environment were used to prioritize the uncertainties on a scale from 1 to 5. Subsequently, they were plotted on a 2x2 matrix (Appendix 6). The key uncertainties that showcase the highest levels of impact and uncertainty and that are not correlated with each other (*ceteris paribus*) were selected and grouped into “technology evolution & adoption” and “customer behavior and preferences”. Technology plays a pivotal role in this BM as it is the main base of it and is constantly evolving, considering its changes is critical to remain competitive. Customer behavior reflects the current needs and demands regarding digital shopping adoption and preference for standardization or personalization.

5.4.2. Scenarios

Exploring the potential changes of the two main key uncertainties identified earlier, the following scenario planning matrix was created:

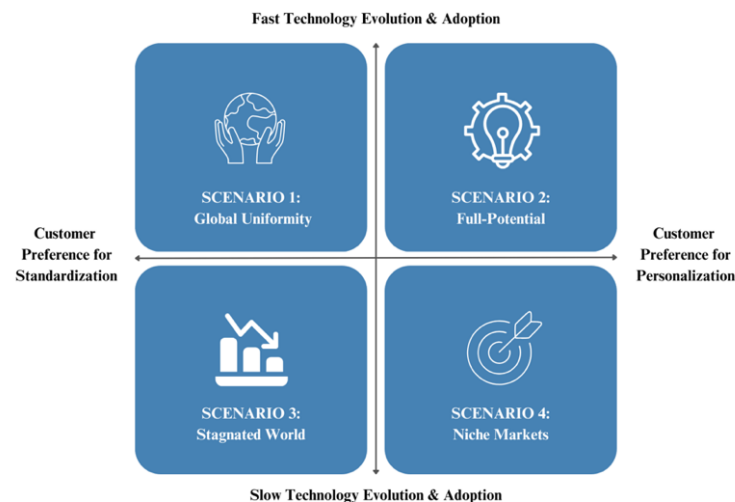


Figure 9 - Scenario Planning Matrix (Authors' illustration)

Scenario 1: Global Uniformity

Companies operating in the grocery delivery industry are increasingly integrating advanced technologies into the platforms, which are suffering rapid innovations. Customers' preferences are for standardization and simplicity. Since the customers choices do not demand innovations, platforms face problems in making unique experiences for them.

Scenario 2: Full-Potential

A scenario where customers have the opportunity to live personalized experiences, as the industry is characterized by rapid technological innovation, with possibilities for personalization. Customers wish unique experiences, and companies use data and algorithms, as artificial intelligence, and machine learning, to customize their experiences. However, data privacy transparency and digital inequality concerns might arise.

Scenario 3: Stagnated World

Technology advances at a slow rate and customers seek standardization. Companies do not innovate nor seek to change their operating BM's, profits are obtained from stable customer experiences and from economies of scale. This scenario is very stable, with the market becoming stagnant.

Scenario 4: Niche Markets

A world characterized by slow technological innovation where customers demand personalized experiences. Companies struggle to meet customer demands, but niche innovative businesses emerge to cater specific unserved customer segments, that seek personalization.

6. Hybrid Business Model Recommendations

6.1. Relevance and Approach

Considering insights from primary data – including expert interviews, customer interviews and a focus group – as early indicators of scenario development, scenario 2, “Full-Potential” is regarded as the most probable and plausible for long-term development. Aligned with further developments on the macro and microenvironment as well as strengths and vulnerabilities of the hybrid BM, this information provides strategic insights to guide innovation in the future. Galante, García López, and Monroe (2013) suggest platforms should prioritize profit optimization and consider making significant strategic investments to succeed in this market. In every scenario, enhancing financial performance is vital for sustainable growth, especially as the market rapidly evolves in response to external factors and changing customer preferences. To boost profits, platforms need to raise average order values and conversion rates while cultivating customer retention and loyalty. The instability of platforms arises from fluctuating demand; inadequate supply negatively affects demand, and vice versa. While the trend of online shopping continues to grow, 32% of 69 surveyed individuals expressed that they are "very likely" to start using OGD services, assuming improvements should be made to the offerings. To boost demand, platforms must tackle significant obstacles preventing customers from using their services more regularly. Customers are particularly sensitive to delivery pricing; when asked about the top factors influencing their choice of grocery delivery services, 21 out of 49 respondents identified "price" as the most important, followed by “delivery speed” (second), “product variety” (third), and “quality of products” (fourth). A hybrid model must maintain competitive pricing while enhancing the customer value proposition. To enhance customer adoption and satisfaction as well as profit maximization,

recommendations encompassing customer experience and logistics and operations were elaborated, as seen in Figure 10.

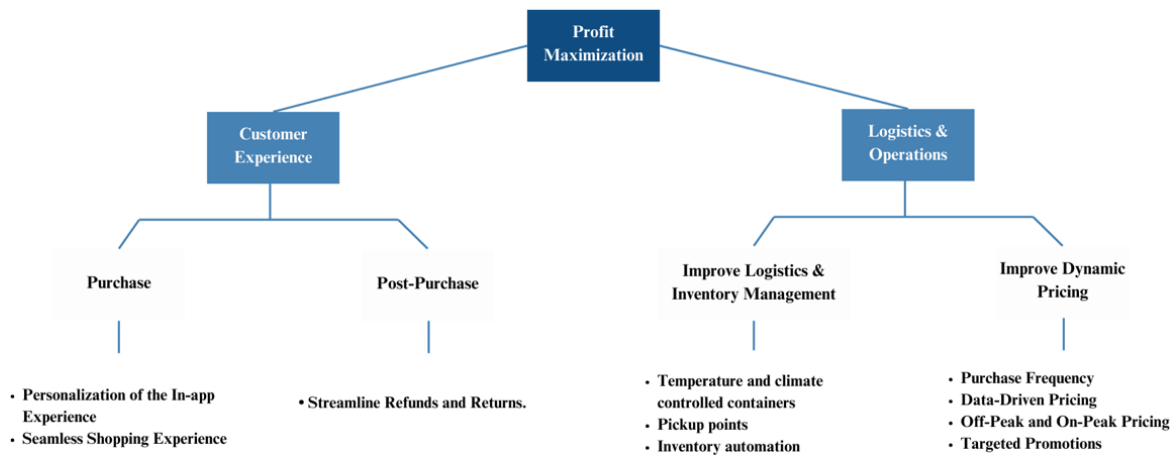


Figure 10 - Summary of Strategic Recommendations (Authors' illustration)

6.2. Recommendations

6.2.1. Improvement of Customer Experience

The customer experience was identified as a key area for innovation and improvement, with 5 out of 6 industry experts emphasizing its importance. Additionally, both users and non-users highlighted it as the critical factor for enhancing satisfaction and driving greater adoption of this type of service. In an era marked by dynamic shifts in consumer preferences where quicker, faster, simpler and freer are desired, enhanced customer experience has become a vital component of the customer value proposition in online grocery delivery (Mason 2019). Hybrid delivery can enhance customer value by addressing the essential need to simplify regular, often routine purchases. To maximize this value, it's critical to deliver a high-quality experience across all customer touchpoints. Key factors include personalized service, user-friendly ordering systems, fast and reliable delivery, and hassle-free refund processes (Anckar, Walden, and Jelassi 2002).

Action 1: Personalize the In-app Experience

This personalized value remains largely untapped. There is significant potential for online grocery platforms to create even greater value by harnessing data insights more effectively to understand and anticipate customer preferences (Simmons et al. 2022a). Fully personalized platforms, shaped by behavioral data, could enhance customer satisfaction by delivering a unique and individualized shopping experience, setting online services apart from in-store competitors in ways that go beyond mere convenience and speed (Simmons et al. 2022a).

The strategy of Personalized Content aims to boost customer value by leveraging an existing resource—the online platform—and customizing it to enrich the shopping experience. This approach can draw in more customers who have previously shied away from online grocery shopping, potentially changing their buying intentions with the new features introduced. Additionally, feedback from the focus group underscored the importance of a personalized experience as a vital factor for the long-term engagement of customers' platforms. One conceivable way of enhancing the platform's personalization is addressing key customer pain points identified on surveys and the focus group such as limited product selection, poor product quality, lack of personalization in recommendations, and a slow, non-automated ordering process.

Hybrid platforms benefit from both online and in-store partner experience, and they possess a significant competitive advantage over traditional stores, yet many fail to fully utilize this advantage. Galante, García López, and Monroe (2013) highlighted a missed opportunity in not offering contextual product recommendations, based on customers' purchase history, or enabling users to repeat previous orders with just one click. The success of e-grocery platforms relies significantly on the user interface, referring to the interactivity, look, and feel of a product screen or web page, and user experience (Figma 2023). The user experience can be enhanced by providing

each customer with a personalized experience, tailored through advanced analytics. According to Sulikowski et al. (2021), incorporating advanced intelligence into platforms helps proactively deliver personalized content by identifying user interests and understanding the motivations behind their purchasing decisions. This approach enables companies to adapt and respond dynamically to customer needs and preferences. Moreover, industry experts, including the Strategic and Operations Manager of Bolt (2024), have pointed out that this level of personalization not only enhances customer value but also boosts sales (Galante, García López, and Monroe 2013). Furthermore, the Country Manager of Mercadão (2024) highlighted that online transactions yield a wealth of data that should be exploited by incorporating AI algorithms into the platforms to develop uniquely tailored shopping experiences. By examining purchasing patterns, these algorithms present products that align closely with each customer's preferences. Once data is collected and analyzed, the platform can create a customer profile based on their preferences and history, suggesting a specific basket delivery without requiring the customer to navigate the platform. For instance, if a customer orders a basket of fresh products every two weeks, the platform could automatically propose this basket for re-ordering two weeks later. This feature would be highly valued by customers, as indicated in the survey conducted. Of the 113 respondents surveyed, 68% declared a willingness or tendency to pay more for premium services that ensure product quality. The concern about the quality of fresh products was shared by both users and non-users of e-grocery services (Customer Interviews and Focus Group 2024). A possible solution would be to introduce a 360° viewing feature to improve product visualization, giving customers a comprehensive view, and boosting their confidence in purchase decisions. This technological advancement proved particularly true for younger consumers (Torres 2020). Additionally, integrating a chat feature could address any situation in which the 360° camera would not be

enough. This would allow customers to interact in real-time with a personal shopper who can provide any required detail and take pictures of the products, ensuring they meet the customer's standards before purchase, enhancing overall satisfaction and increasing retention rate. Platforms could implement this by developing similar software they use to connect orders and couriers, but instead connect customers with couriers. Finally, implementing a section within the app with a social media-style feed could enhance personalization and address the need for inspiration, a major concern among brick-and-mortar store users regarding e-grocery (Customer Interviews 2024). In this section, users could view and share recipes and ideas with friends, nutritionists, influencers, or chefs and share their own purchases (Head of South of Portugal at Glovo 2024). If a customer interacts with a recipe, the platform could automatically suggest adding the necessary ingredients to their shopping cart to replicate the dish. This functionality would not only foster a sense of community and boost engagement but also, as users can interact and be influenced by the shared insights, leading to increased visibility and sales of products.

Action 2: Seamless Omnichannel Experience

Partnerships between brick-and-mortar and pure players allow businesses to grow without substantial initial investments. As a result, companies can adopt strategies that enhance sales for both sides while sharing investment costs. Hansen's (2005) findings suggest that e-grocers should focus on creating an experience that is as seamless and familiar as in-store shopping, to cater to a broader customer segment rather than relying solely on the adoption of technology-savvy customers. Survey 2 indicates that 76% of participants prefer in-person shopping, while 20% prefer a hybrid approach depending on the situation. Key reasons for choosing in-store shopping include the personal selection of products, a broader array of options, in-store promotions or discounts, and

the overall enjoyment of shopping (Survey_2 2024). In-store shopping continues to thrive, offering a complete sensory experience that caters to consumers who take pleasure in the shopping journey. The rise of omnichannel strategies is fueled by the extensive availability of retail technologies (Lazaris and Vrechopoulos 2014). Furthermore, cultural differences in Europe suggest that grocery shopping is often a family activity on weekends. Therefore, a purely online method might not resonate with many European customers as effectively as it does in the US or Asia. Hence, adopting an omnichannel strategy proves to be the most effective for attracting and retaining European clients while increasing OGD usage.

Supermarkets can improve the shopping experience using QR codes. These matrix barcodes provide various product details, including nutritional facts, stock availability, promotions, ratings, and reviews. Customers can scan these QR codes with their smartphones within the app, seamlessly adding items to their virtual shopping carts. This feature caters to consumers who enjoy in-store shopping and want to discover new products by scanning items. Users can pay through the app and choose a convenient delivery time (Caine and Koetter 2018). Shoppers can wander the aisles and scan products without the need to push a cart. For instance, the Korean retailer Emart features QR codes on in-store products, enabling customers to scan items to their app, process payments, and schedule deliveries. They also offer QR codes for exclusive promotions and discounts, showcasing innovative retail technology (Caine and Koetter 2018). When a product is unavailable in-store, the QR code will recommend alternatives that have comparable nutritional value or meet similar purchasing preferences. Customers can also reorder previous purchases since the products scanned in-store will be retained. This approach allows platforms to meet consumer demands for product visualization, exclusive in-app promotions, and the ease of future delivery. According to survey_2, 66.25% of customers expressed interest in or willingness to try an option where they select fresh

items in-store while having other products delivered later. Additionally, 70% of respondents showed some likelihood of utilizing this type of system.

Action 3: Streamline Returns and Refunds

The focus group found the complexity of the refunding process a major pain point in OGD. They consider refund processes unclear or complicated with no immediate reporting options. The need for refunding may originate from product quality issues and delivery inaccuracies, which are major challenges in grocery delivery that deter customers from shopping online. A news report by Fonseca (2024) highlights that Mercadão received 30 complaints in a single month concerning product quality at delivery, including spoiled fruits. The platform failed to respond to refund requests promptly; when responses occur, they typically seek explanations for the issue. This undermines customer trust in the platform, discouraging future purchases and significantly reducing the likelihood of repeat orders. Thereby, the ability to offer a simplified refund process significantly impacts a platform's profitability and customer retention. Research by Li, Li, and Gharehgozli (2022) shows that consumers' decisions to purchase online depend on product pricing, the likelihood of dissatisfaction, and the effectiveness of return and refund policies. Therefore, to attract more customers, streamlined refund policies must be established.

Refunds comprise complaints such as inaccurate delivery times, incorrect product selection, missing products, and spoiled/defective products. The survey revealed that the most popular items purchased include 'fresh products' such as fruits and vegetables at 36% and “dairy products” at 38%, which compose perishable goods with higher complaint rates. Hybrid models can define partnership agreements with brick-and-mortar stores, reducing refund costs and enabling tailored solutions for perishable items. According to the Country Manager of Mercadão (2024), the

platform assumes full refund in case of product defect caused by delivery or missing products, and problems concerning quality are reimbursed by the brick-and-mortar.

Li, Li, and Gharehgozli's (2022) study also indicates that refund types should correspond to profit margins, suggesting that full refunds are appropriate for high-margin perishable items. Additionally, full refunds should be considered for expensive groceries with low return rates to mitigate consumer uncertainties and boost demand. For products with either high prices or high return rates, partial refunds are advisable. Refund policies must be thoroughly reviewed and adjusted to avoid excessive costs and profit reductions. Furthermore, platforms could provide return options at physical stores or collecting at customer houses, allowing them to return spoiled or defective items, thus building trust. As such, refund and return policies should match product categories; instant refunds should be provided for perishables without requiring a return, while larger grocery items may necessitate returns for refunds (Li, Li, and Gharehgozli 2022). Based on the insights gained from the focus group, platforms should streamline and automate their refund processes as shown in Appendix 7. When customers receive their orders, they will interact with an AI support assistant to rate their experience and, if needed, request a refund. After clicking the refund button, they must choose a reason and submit proof of any defect or missing item. The AI will analyze the provided image and process the refund automatically and promptly. For instance, the focus group noted Uber's refund policy as being both automated and straightforward, supporting the suggested approach. Additionally, refunds could be converted into in-app credits to promote future purchases and enhance consumer satisfaction while encouraging continued engagement, not differently from strategies used in other retail sectors. Platforms might also provide free delivery for customers who choose to use in-app credits, making this a requirement for their next purchase.

6.2.2. Logistics and Operations

Logistics and distribution are another potential area for improvement in OGD. According to research conducted by Oracle Retail for 2020 (n.d.), nearly 3/4 of consumers who order groceries online opt for home delivery, while the remaining 27% prefer either in-store or curbside delivery. Those are the main options that most supermarkets in Europe offer. However, the online ordering experience for home deliveries still has significant flaws, one of them being timely delivery, according to the insights from the focus group conducted. Hence a great opportunity exists for improvement which could create higher customer satisfaction and an increased usage rate. Platforms such as Mercadão work with freelancers meaning that it is often challenging to manage the deliveries to make sure that the products are delivered at the exact same time slot, and late deliveries are sometimes inevitable (Country Manager at Mercadão 2024). Moreover, the focus group highlighted that having to be available for an extensive period to pick up the order is a major downside for online delivery.

Action 4: Implement Temperature-controlled Containers and Pickup Points

To find a solution that would allow groceries to be delivered to a person's garage, home or office unattended, temperature and climate-controlled containers should be considered. Based on the type of products to be delivered, the appropriate container would be chosen. This would allow higher flexibility for the customer (Ladd 2020). These containers could also be placed inside the supermarket. Home delivery is a more costly and harder-to-scale delivery mode, so click-and-collect is usually the preferred way for e-grocers to sell their products online. At the same time, last-mile delivery may involve significant costs and offering the pickup in-store option or curbside pickup has proven to be a great way to minimize costs. However, these options may involve costly labor as well since employees need to be available to deliver the groceries either in-store or outside

directly into the customer's car. This becomes especially challenging during peak hours. If the allocated personnel are not enough to ensure speedy packing, customers may have to wait additional amounts of time which can significantly impact their experience. These containers could be used as one of the solutions to fix this challenge by providing a self-service option, potentially allowing for saved time and reduced costs (Tveraabak 2022).

Another potential suggestion would involve the use of dedicated pickup points in areas with a higher population density. For instance, Carrefour initially created pick-up for pedestrians near their supermarkets in 2018 (Publications Checkout 2018). In 2022 they expanded this concept by partnering with La Poste, which is a postal service company in France, to significantly increase their network of pickup points in the country (Carrefour 2021). This allows consumers to pick up different kinds of non-food purchases they made online and now they can also pick up their groceries. It also increases the practicality and convenience for supermarket customers. It is also a secure solution as the lockers where the deliveries are stored can only be opened by the customer. By leveraging the postal service network in Paris, Carrefour was able to significantly expand its delivery offer (Carrefour 2021; Das 2021). A similar concept was introduced in Belgium by Colruyt. The chain created pickup points exclusively for pedestrians and cyclists in convenient locations. Drive-through deliveries are more suitable for the outskirts of large cities where customers will often go by car. When looking at high-density central areas this type of pickup is often preferred. At the same time, it is also seen as a more sustainable travel solution and Colruyt itself also established recycling points at the pickup center while the deliveries from the store are made by bicycle couriers (Neerman 2022). It is thus visible that this is a promising concept for high-density areas and some firms can use it to improve their sustainability practices as well. Since most supermarkets only offer in-store or near-the-store pickup options we suggest this type of

pickup as a potential way to increase customer satisfaction and demand for online purchases in more densely populated areas.

Action 5: Implement Automation in Operations

Automation is a highly relevant topic in OGD. The popularity of buying groceries online is increasing worldwide, including in Europe. Many large chains have experimented with automation but ultimately reverted to manual methods as automation usually involves highly complex processes and concepts that may be hard to understand and implement. This is usually true for large chains for which it would require a reorganization of an already complex system. Ocado, on the other hand, entered the market with an automated model from the beginning and started to license its technology in 2014 (Eley and McMorro 2020).

The manual method has been working for a long time, where there are dedicated pickers that then fill the trucks or other transportation methods and deliver the order to customers' homes. However, it is far from being an efficient method. It is costly since it may require extensive personnel especially for many orders. The number of orders that can be fulfilled is also limited since the stores that also have many customers can usually fulfill no more than 100-200 orders per day. Moreover, the pricing strategies that grocery brands tend to use online exacerbate the costs since they often focus on discounts, coupons and reduction/elimination of delivery fees. This forces many supermarkets to operate their online deliveries with negative profit margins (Chandra et al. 2022; Eley and McMorro 2020). To solve these issues, automation may be used as a potential solution. As previously mentioned, building such processes may be highly complex and require significant capital expenditures. To understand which fulfillment method is the most appropriate, a McKinsey study conducted by Chandra et al. (2022) suggests that the choice of fulfillment option should be based on geographic area and urban density, as well as the needed speed of delivery and

the desired range of products. In-store picking and dedicated in-store warehouses for order assembly can serve as cost-effective solutions for less densely populated areas while maintaining a wide assortment of products. However, these approaches rely heavily on manual processes, resulting in slower picking speeds compared to more automated options. Dark stores and traditional warehouses require higher investment but can also handle more orders and can be applicable to moderate areas in terms of urban density. Dark stores are the ideal solution for moderate-density areas since they offer an optimized solution for manual picking and allow for speedier deliveries since traditional warehouses are often located far from the consumers which can compromise the delivery speed. Lastly, robotic micro fulfillment centers and highly automated warehouses are the most suited for high-density areas. Robotic micro fulfillment centers swap the manual pickers with robots and can thus greatly increase capacity and decrease operating costs while also allowing for speedy deliveries since the picking is much faster and they are often located close to consumers, but the product range might be more limited. A highly automated warehouse, in turn, introduces automation into all aspects and is also able to offer a broader product range, which makes it suitable for the general consumer (Chandra et al. 2022). By taking the mentioned approach and performing this analysis, a supermarket may understand which options suit it best, and the platform that provides the delivery may also be able to understand which picking options work best depending on the specific needs. This may help both partners to ensure that the customer experience is done in the best possible way and increase the competitiveness in the e-commerce segment. Highly automated solutions may create several benefits for the grocery brand. It can help to create a much more seamless experience with the use of AI. It can be used to track website traffic and make better predictions on demand to control stockouts to ensure better customer acquisition and retention. Machine learning is also used to ensure precise and accurate order picking and coordination in the

warehouses. In a time where sustainability is also becoming as relevant as ever, automated solutions can also improve the ability to track close-to-expiration date products and aid the grocery brand in its donations. This aspect, providing higher picking accuracy as opposed to manual picking can help to significantly reduce food waste. AI capabilities and machine learning can also be used to significantly improve customer experience and fraud detection (Marr 2020; Ocado Group 2023).

Action 6: Improve Dynamic Pricing

Technology enables platforms to increase their revenue by extracting greater consumer surplus – charging higher prices to consumers who are willing to pay more. Price sensitivity is a key factor influencing consumer choice of grocery delivery platforms, particularly regarding delivery fees.

Focus group findings further reveal that consumers dislike additional delivery fees and prefer smaller, more frequent purchases over large, single transactions—a trend evident in Southern Europe. To solve this problem, improving the current subscription models would be important for customer retention. Subscription models, although implemented by some platforms, show mixed results when weighing their benefits against operational costs. Research by Wagner, Pinto, and Amorim (2020) highlights that subscribers spend €107 more per month and order 1.56 times more often than non-subscribers. However, these customers typically purchase 13 fewer items and spend €23 less per order, which increases delivery costs per transaction and reduces overall efficiency.

One viable strategy could involve subscription plans, promoted and targeted to specific customer segments, who purchase higher volumes per order and more frequently, instead of indiscriminate targeting. Furthermore, the plan should offer free delivery but require a higher minimum basket value. As shown in the survey, for 82% of correspondents, having free or low-cost delivery fees would increase the likelihood of using grocery delivery. This approach encourages larger orders while mitigating the operational cost burden associated with frequent, low-value deliveries.

Additionally, platforms could optimize dynamic pricing strategies by tailoring delivery fees based on two key variables: customer profile and usage frequency, as well as off-peak and on-peak periods. As Kamel et al. (2022) suggest, loyal customers could benefit from progressively lower delivery fees, encouraging more frequent purchases and deepening customer engagement. It should also consider price elasticity and sensitivity. For customers less sensitive to price and willing to pay for value-added services, platforms could implement higher delivery fees, reflecting the enhanced experience. Platforms should also consider tailoring delivery fees for off-peak and on-peak times by offering exclusive promotions or reduced fees during less busy periods. For instance, Korean Emart successfully implemented this strategy with lunch-time exclusive promotions (SpringWise 2012). Similarly, reducing delivery fees for off-peak slots or for time slots closer to the existing delivery route can optimize delivery efficiency. This approach not only improves route planning but also supports green practices by minimizing traffic and environmental impact (Koch and Klein 2020).

Platforms could increase customer engagement by offering exclusive online discounts and coupons tailored to different customer segments. According to 59% of respondents, such incentives significantly boost the likelihood of choosing grocery delivery. Discounts might be personalized based on purchase history, ensuring that customers receive savings in their most frequently purchased product categories.

The tailored promotions according to customer segment foster higher trust in the platform-consumer relationships as it might be seen as competent and helpful, categories associated with higher trust (Altman and Taylor 1973 cited in Inman and Nikolova 2017, 16).

Moreover, platforms might frame their offer around reducing food waste. Globally, one-third of food is wasted – brick-and-mortar stores are one of the bottlenecks when tackling the problem,

given that 85% of food waste stems from fresh product spoiling. Platforms can use technology to implement in-app discounts for fresh items nearing their optimal consumption period. These discounts would factor in seasonality, food categories, and expiration dates (Eit Food 2021). Such measures would align with stricter environmental regulations concerning food waste management.

6.3. DVF Framework

To give a more objective evaluation of the recommendations, the Design Thinking (DVF) framework is going to be used. The DVF framework is used to evaluate solutions by analyzing whether they are desirable by the customers, viable with regards to returns and long-term potential as well as feasible, i.e., whether they can be implemented leveraging the existing capabilities (Alejo 2023; Orton 2017). Desirability analyzes the main pain points and needs of the customers and evaluates whether the proposed solution will be in line with those needs. Viability assesses the current and long-term profitability aspect of the new venture as well as the sustainability impacts. Feasibility analyzes whether the operational strengths can be utilized to implement the proposed solution. The less related the solution is to the company's core capabilities, the riskier and less feasible it will be (Orton 2017). Lastly, each of the 3 aspects is going to be analyzed on a Likert scale of 1 to 5, to provide an easier understanding of the assessment as detailed in Appendix 8 (SurveyKing n.d.). Table 3 showcases a summary of the scores concerning the three aspects of each recommendation.

Number	Recommendation	Desirability	Viability	Feasibility	Score
1	<i>Personalize the In-app Experience</i>	5	4	4	13
2	<i>Seamless Omnichannel Experience</i>	5	5	4	14
3	<i>Streamline Returns and Refunds</i>	5	4	4	13
4	<i>Implement Temperature-controlled Containers and Pickup Points</i>	5	4	4	13
5	<i>Implement Automation in Operations</i>	4	4	4	12
6	<i>Improve Dynamic Pricing</i>	5	5	4	14

Table 3 - Scores Attributed to Recommendations (Authors' illustration)

Action 1: Personalize the In-app Experience

The first action addresses the lack of personalization and an engaging experience that many customers often refer to as a big drawback in OGD according to the literature about the topic and the primary data. This solution can significantly enhance the CVP and create a distinctive shopping experience. It appears that consumers are indeed looking for more personalization and improved shopping experience and it aligns with current trends of convenience, personalization, and social interactions among customers (Head of South of Portugal at Glovo 2024; Purta et al. n.d.). Hence the desirability of this action is evident.

For analyzing the viability of this suggestion, there is a need to look at long-term impact and value chain implications (Tardi 2024). This recommendation is going to be beneficial, as the demand for personalization is going to remain relevant. It is a very established trend, as previously mentioned (Haan 2024). This means that these features can potentially allow companies to increase customer satisfaction and loyalty in the long run. It helps enhance the customer experience and improve the value proposition, which can indirectly improve sales by increasing market share and customer loyalty (Expert Panel 2023). Since it also requires some upfront costs, a more detailed profitability overview metric such as return on investment can be used (Beattie 2024). Nonetheless, it is a recommendation that will not only impact the short-term performance but is also likely to be a significant value-adding feature in the long term as well.

The recommendations leverage technology through AI and machine learning for advanced personalization, requiring platforms to implement real-time data analysis and pattern identification. Technologies such as Apache Kafka can process and deliver data in real-time, integrating seamlessly into existing databases to handle inputs from multiple sources such as mobile apps and GPS tracking (Villalba 2024; Apache Kafka 2023). Additionally, tools such as Microsoft Power

BI utilize machine learning to analyze customer behavior, enhancing the ability to offer personalized product suggestions and automated reordering (Microsoft Learn Language 2024). Integrating a Chatbot or Voice Assistant allows customers to interact directly with the platform through speech or text, facilitating tailored suggestions and automated addition of items to their shopping cart. This not only caters to specific customer needs but also streamlines the shopping process, reducing search times and increasing efficiency. According to the Strategic and Operations Manager of Bolt (2024), there is significant potential for app development to help users efficiently navigate the extensive choices available in European markets. Chatbots significantly enhance the online grocery shopping experience by offering functionality that includes locating specific products, suggesting alternatives when items are unavailable, and providing customized recipe ideas, thus saving time and offering personalized recommendations (Wamba et al 2023 cited by Chakraborty et al. 2024). Digital voice assistants have also transformed shopping with advanced speech recognition that captures and processes user inputs effectively (Aw et al. 2022). Consumer acceptance of these assistants has risen, indicating potential benefits for businesses, especially those operating in hybrid models (PwC study, 2018). These technologies not only meet functional needs but also add relational value, enhancing customer satisfaction and trust in AI solutions (Vlai et al. 2021 cited by Aw et al. 2022). A study by OC&C Strategy Consultants revealed that voice shopping in the UK generated approximately US\$5 billion in 2022, underscoring the impact of voice-assisted devices as a transformative force in retail (OC&C Strategy Consultants). Uber Eats in the US exemplifies this trend, having integrated an AI assistant powered by the Uber Large Language Model and built using Google PaLM. This tool helps customers find new meal ideas, complete tasks, and discover deals by analyzing the merchant catalog and utilizing search engine technology. Uber also collects customer feedback to continuously refine the assistant's capabilities

(Uber n.d.c). Individuals with vision impairments often face challenges when shopping both in-store and online. Voice assistants offer a tailored solution that enhances accessibility, engagement, and autonomy for these shoppers (Villegas-Ch, Amores-Falconi, and Coronel-Silva 2023). These tools are particularly beneficial on platforms adopting a hybrid model, as they can serve a broader audience. Digital voice assistants provide detailed product descriptions, pricing, personalized recommendations based on past purchases, and streamline the checkout process, improving inclusivity and user-friendliness for customers with vision problems (Villegas-Ch, Amores-Falconi, and Coronel-Silva 2023). However, companies will encounter some challenges in integrating advanced intelligent solutions into the platforms. Managing and processing the vast amounts of data generated from customers' previous purchases and interactions necessitate scalable infrastructure and advanced computing techniques to ensure timely and efficient analysis (Thippanna, Albert, and Ramachandra 2023). This process also requires skilled professionals with expertise in the field. To provide customers with accurate and personalized suggestions, AI models must be trained to process data in real-time, a task that is both computationally intense and time-consuming. Moreover, platforms must prioritize data privacy and security, adhering strictly to the regulatory requirements and ethical guidelines. Implementing such technologies demands substantial investments in infrastructure and computational resources. Therefore, companies must carefully evaluate the associated costs and weigh them against the potential benefits to determine the feasibility and value of adoption (Thippanna, Albert, and Ramachandra 2023).

Action 2 – Seamless Omnichannel Experience

This recommendation is also highly desirable. Omnichannel has been a significant trend and utilizing it to its maximum advantage is key. By improving the omnichannel experience the companies can further increase the convenience and personalization options of online and in-store

shopping (Briedis et al. 2021). Implementing these features will boost customer satisfaction and loyalty, likely leading to higher sales through increased order frequency and larger average purchases. Consequently, these enhancements can help companies, particularly larger chains, sustain long-term growth and enhance their brand image and market position (Briedis et al. 2021). These QR codes would be managed through backend systems, linking the scanned code to product barcodes, promotions, and additional details. Platforms and physical stores can collaborate with GS1, a non-profit organization specializing in digital link technology, which provides QR codes compatible with barcode scanners and smartphones (GS1 2024). GS1 (2024) describes this technology as a “true revolution for supply chain management and marketing.” The QR code will contain information about the barcode, thus prompting platforms to integrate QR scanning libraries into the app (Caine and Koetter 2018). Implementing this tech-based strategy comes with specific risks and challenges that require careful management for a successful outcome. Integrating QR scanning libraries into existing systems can present compatibility issues, necessitating a robust technical setup. Additionally, the QR codes, linked to customers’ accounts and sensitive data, pose significant data security risks, demanding stringent security measures to comply with data protection laws. A major challenge is going to be convincing both less tech-savvy customers and those who are reluctant to share their data to adopt this new technology, potentially slowing widespread acceptance. Moreover, the strategy's success relies on the reliability of QR codes themselves. A poor scanning experience for the customers could lead to a negative response to this innovation, highlighting the need for precise quality control. A further risk factor is a reliance on external entities, given the importance of partnerships such as the one mentioned above with GS1 (Cocco and Demoulin 2022).

Action 3 - Streamline Returns and Refunds

The conducted focus group highlighted that complex refund processes are a significant drawback when purchasing online. The data suggests that companies using this model often have complex and inefficient return and refund processes, which can lead to customer dissatisfaction. Simplifying these processes could greatly enhance convenience and encourage more customers to shop online. This may prove to be a strategic move in the long run since more convenient and streamlined returns and refunds will increase customer satisfaction and retention, as was highlighted in our research. It may lead to having a competitive edge over companies that have inefficient processes in place, while also increasing brand recognition and loyalty. At the same time, implementing an automated process may require significant process changes and an initial investment.

For an efficient refund process, platforms should integrate a robust issue reporting system in their app, focusing on common problems including inaccurate delivery times, incorrect product selection, and defective items. This system should compile past issues and feedback to fuel an algorithm that determines eligibility for automatic refunds based on photo proof and set criteria (Wagner, Pinto, and Amorim 2020). In complex cases, a dedicated team should manually review the issue. Additionally, using data analytics to monitor product margins and return rates can help refine policies. However, automation risks include potential fraud, as seen with Amazon's multimillion-dollar losses (Palmer 2024). To mitigate fraud, platforms could track frequent refund requests, require photo evidence under certain conditions, and rate couriers based on their performance in handling issues (Uber 2024). Real-time fraud detection using AI and machine learning could also be integrated, though this poses challenges with legacy systems and requires seamless API integration (Wheeler 2024). Scalability is essential for managing large data volumes and ensuring the performance of tech platforms. Protecting against cyber threats is crucial,

necessitating strong encryption and data anonymization (Wheeler 2024). Finally, while optimal refund policies can control operational costs, offering only partial refunds may impact customer satisfaction and brand perception negatively (Li, Li, and Gharehgozli 2022).

Action 4 – Implement Temperature-controlled Containers and Pickup Points

Primary data pointed out that home delivery still has significant flaws in the eyes of consumers. Delays and inefficiencies in delivery also impact the choice to purchase groceries online. The temperature and climate-controlled containers could help to solve some of these problems, making the process easier and more convenient. It can help to make the delivery less unpredictable for the customers. Home delivery is the most expensive method and click-and-collect options are preferred (Tveraabak 2022). Having a convenient network of pickup points will have a positive impact in the long run leading to sustainable e-commerce operations. At the same time, the possibility of delivering the items unattended may also be a great additional feature for home deliveries. It will lead to higher customer satisfaction and an increased usage rate leading to increased revenue (Ladd 2020). They also have great potential from the sustainability point of view, further strengthening the case for long-term viability (Neerman 2022). Additionally, it will require a thorough analysis and finding the right partners, with potential upfront costs regarding real estate which could prove to be more challenging. To implement temperature and climate-controlled delivery containers, companies would need to expand their supply chain, potentially partnering with specialized providers or considering in-house production to handle logistics (XPO 2022). These containers would require integrated technology for GPS tracking and temperature monitoring to ensure product integrity (Bai et al. 2023). Security measures, such as security codes, must be in place to prevent unauthorized access. A pilot program could test the system's effectiveness and gather customer feedback (Wood, 2022), and a marketing campaign would educate consumers about this

new delivery method (Smallwood, 2019). For container returns, solutions including designated drop-off points, in-store returns, or collection during subsequent deliveries could be explored, possibly supported by a deposit fee that is reimbursed upon return (Dublino 2024). This delivery method introduces additional considerations such as ensuring data security, especially if biometric data is used, in compliance with GDPR and other regulations (European Commission n.d.). Food safety is another critical aspect, requiring adherence to regulations and effective monitoring of conditions, including temperature and humidity through IoT and sensor technology (Bai et al. 2023; European Union, n.d.a.). Dedicated pickup points could be established through rental or local partnerships, optimizing for high-density areas with easy access for cyclists and pedestrians (Carrefour 2021; Neerman 2022). These points must ensure secure order collection, potentially using biometric verification or security codes. The financial implications of acquiring real estate for these points necessitate a thorough cost-benefit analysis. Operations would need to adapt for efficient delivery, and customer education on the new pickup method is crucial (Twin 2024).

Action 5 – Implement Automation in Operations

This is a highly desirable solution for customers, and companies have been trying to automate their processes for years. Customers want convenience, speed, and accuracy. All of this is provided by effectively implementing automation (Eley and McMorrow 2020). This would likely increase customer satisfaction. However, as previously mentioned, some of the options could lead to lower product range, which could be a downside (Chandra et al. 2022). Automation has been a relevant topic, especially in e-commerce, over the last decades. It may be able to significantly reduce the costs with personnel as well as faster and more efficient deliveries and grocery picking, it can potentially increase the low margins in the long term. The downside is that it is highly complex technologically and may require significant capital expenditures (Eley and McMorrow 2020). A

careful analysis needs to be performed to understand which degree of automation the companies need and in which geographic markets it would make more sense. When implementing automation, a comprehensive strategic analysis is essential to assess business needs such as geographic location, product range, volume, speed requirements, and target audience to select the most suitable solution. Utilizing existing in-store warehouses or the company's current facilities can be less complex than third-party solutions, which may be more appropriate for advanced automation needs if in-house capabilities fall short (Head of South in Portugal at Glovo 2024; Chandra et al. 2022). Large-scale automation might be efficiently addressed through third-party providers such as Ocado, which licenses its technology and has completed multiple implementations (Eley and McMorrow, 2020). An initial pilot program can be beneficial in testing these technologies and refining processes (Wood 2022). Implementing complex automation systems will involve high upfront costs and require significant workforce training, leading to additional financial investment. It's also important to consider the potential displacement of jobs, necessitating careful analysis and communication during the transition.

Action 6 – Improve Dynamic Pricing

Consumers may not directly seek a solution such as dynamic pricing, but the price is one of the major factors in e-grocery shopping (Purta et al. n.d.). According to research findings, consumers would buy more if they had no delivery fees or if those were reduced. Loyal consumers will benefit from better delivery fees, and customers seeking value-added services will also be targeted accordingly. Tailored promotions according to the customer segment are also highly desirable as they would offer a more personalized experience and would increase grocery delivery usage.

The current subscription models are mostly inefficient. The proposed changes to the loyalty programs are a great alternative to reducing delivery costs and improving efficiency. Tailoring the

delivery fees based on customer profile and usage frequency may further boost this proposition (Wagner, Pinto and Amorim 2020). It will likely lead to a more personalized offer, increased customer satisfaction and loyalty, and boost online grocery sales. The suggested changes to leverage the items nearing the optimal consumption level make this a viable long-term solution to improve the environmental impact as well. To implement dynamic pricing effectively, platforms should utilize their data analysis and pattern recognition technologies to tailor subscription offerings and delivery fees based on customer profiles, which could include factors such as basket size and purchase frequency (Wagner, Pinto, and Amorim 2020). By analyzing real-time data, platforms can segment customers by price sensitivity, activity, inventory levels, competitor pricing, and time-based willingness to pay (Koch and Klein 2020). Additionally, platforms could employ dynamic pricing algorithms for perishables by partnering with technology providers such as Wasteless, which uses QR codes for real-time inventory tracking and adjusts prices based on expiration dates, demand, and competitor pricing (FT Strategies 2023; Kumar et al. 2021). Dynamic pricing is permissible under EU consumer law if platforms disclose that prices are based on automated decision-making, in compliance with the Omnibus Directive and Directive (EU) 2019/2161. Transparency about how customer data influences pricing is essential (European Union n.d.b.). However, adopting dynamic pricing carries risks, such as potential price discrimination and market impacts if competitors adjust their prices simultaneously (Mackay and Weinstein 2022). The controversy around the Wish platform demonstrates the pitfalls of undisclosed personalized pricing – which was prohibited of applying dynamic pricing in Europe (Heidary 2022). To avoid legal and ethical issues, platforms must comply with GDPR, ensure algorithmic fairness, maintain transparency, and define clear policies for the use of data in pricing decisions (Siau and Wang 2020).

6.4. Impact on Current Business Model

Based on the provided recommendations, a potential future BM is now going to be outlined. Concerning the value proposition of the Hybrid Model, evaluated through the DVF Framework, all proposed recommendations are assessed as highly desirable by customers, except for Automation with a score of 4. The enhancement of personalization will enable customers to perceive the platform as more intuitive and aligned with their specific needs, fostering trust and loyalty among existing users. Additionally, the development of a seamless omnichannel experience will expand the service's accessibility to a wider audience, making the platform more appealing across different customer groups. The simplification of refunds and returns will enhance customer confidence when purchasing groceries, thereby increasing their willingness to engage with and rely on the platform. Furthermore, innovations in logistics and delivery will provide greater flexibility and improve the overall customer experience, ensuring timely service without delays. The implementation of dynamic pricing strategies and value-added services, such as free delivery and promotional offers, will further incentivize customers to place orders more frequently, fostering long-term loyalty and engagement. These recommendations will also expand the range of customer segments the BM can serve. Quality-conscious customers, who prioritize the products they acquire, will find confidence in the 360° product view and real-time personal shopper interaction, reinforcing their trust in the platform. Younger generations, attracted to social media interactions, will be targeted through the integration of social features that align with their digital habits. Older customers, who often prefer in-store shopping, will find the option to scan products and schedule a delivery at a convenient time a practical bridge to online shopping, thereby broadening their adoption of the platform. Price-sensitive customers will benefit from the platform's dynamic pricing approach, perceiving it as more cost-effective and thus encouraging frequent purchases.

Collectively, these advancements aim to position the business as inclusive, adaptive, and capable of meeting the diverse needs of its customer base while driving growth and loyalty. The proposed recommendations will significantly influence the revenue model by diversifying revenue streams, enhancing customer retention, and optimizing pricing strategies. Personalization efforts, such as recommending products aligned with customer preferences, are expected to lead to larger basket sizes, as customers purchase more items online rather than offline. Additionally, enabling customers to visualize products more comprehensively will encourage increased online transactions. Integrating social media-style features into the platform will drive revenue growth by encouraging purchases influenced by recommendations from individual customers to follow on the platform. Collaborations with partner stores to integrate QR code features will target customers hesitant about online shopping, converting them to the hybrid BM. Similarly, introducing flexible pickup points will attract revenue from additional customer segments. Dynamic pricing mechanisms will adjust delivery fees based on demand, thereby optimizing revenue generation for the platform. Furthermore, segment-specific pricing strategies will maximize customer surplus and overall profitability. The implementation of these recommendations will also reshape the cost structure of the Hybrid BM. Initially, the development of necessary technologies will require substantial investment. For instance, algorithms designed for personalization will need to analyze purchasing patterns and manage data effectively. Other technological advancements, such as social media-style features, 360° product viewing, real-time shopper interaction, automated refund systems, dynamic pricing, and subscription models, will demand significant upfront expenditures. While these innovations may increase initial and maintenance costs, they will ultimately reduce inefficiencies and enhance margins. From a logistical and operational perspective, investments in infrastructure such as temperature-controlled containers and delivery lockers will make companies

incur high initial costs. However, these investments will reduce long-term delivery fees associated with personal shoppers, enhancing overall platform profitability. The technological, operational, and human capabilities of the BM will also experience substantial improvements. The company will need to deepen its expertise in AI and data storage to implement the proposed recommendations effectively. Advanced technological proficiency will become a core competency, necessitating comprehensive staff training to ensure the platform's operation. As delivery operations expand, the development of more efficient logistics systems will be essential, to improve inventory management and stock levels accurately. Operational excellence will be essential to deliver a great customer experience.

7. Limitations & Extensions

The research conducted and the recommendations suggested in this paper were prone to limitations. Firstly, it was limited by resource and time constraints. Due to these challenges, the number of research techniques used, and the amount of data gathered, was limited. Additional resources and time could have allowed for a more in-depth analysis of specific aspects of the BM studied and additional insights. Furthermore, the industry presents a complex pattern of BM and interplay between the different parties. Companies may present characteristics that allow them to be considered in several BMs simultaneously, for instance, Glovo operates its own dark stores, and serves as a platform for meal delivery as well as a platform for grocery delivery. This is also a dynamic industry which is deeply affected by technological advancements. Characterized by a rapid change, it may quickly make our recommendations obsolete. To attenuate this problem a Scenario Planning framework was used. The geographical scope of the paper is also limited since only the European market was analyzed. This market has some distinct players and has a dynamic

picture in terms of customer preferences as well as a strong regulatory landscape. However, there are markets that are often considered more advanced when it comes to OGD, such as the US market or China.

To extend this paper and provide additional insights on this industry several possibilities exist. Firstly, applying this analysis to other geographies could provide additional understanding of consumer behavior and a better understanding of future trends. Regulatory challenges, especially in the European market, are also a major force affecting this industry. Potential regulations on the status of gig workers could have profound impacts on many of the BMs studied. A more in-depth analysis of the current and potential regulations that may affect the European market could also prove insightful. Regulations on sustainability topics, as well as a broader analysis of the environmental impact of each BM, could also provide a better understanding of the long-term viability of each model. Lastly, an in-depth analysis of emerging technologies could help to further create a picture of this industry's outlook.

8. Conclusion

The OFD sector has rapidly evolved due to the global increase in digitalization and smartphone usage. In Europe, this transition has been more gradual, yet it has seen substantial advancements over the last decade. As a result, the industry features a variety of BMs, ranging from mature BMs as aggregators and direct-to-consumer to newer concepts such as quick commerce (Q-commerce). This sector has diversified significantly, with grocery delivery models emerging and showing promising growth, surpassing that of ready-to-eat meals. Given the projected growth in this area, together with experts' interest and the scarcity of research, the hybrid delivery model was selected for in-depth analysis based on its blend of brick-and-mortar and pure-play partnerships. Experts

interviewed expressed concerns and curiosity regarding the future of this BM. It offers multiple advantages through its unique partnership structure, which leads to cost reduction and shared risks while providing a robust customer value proposition that builds trust among European consumers. Nevertheless, it faces fierce competition, marked by price wars and struggles for cost leadership, compounded by narrow profit margins. Experts have expressed concerns about macroeconomic factors, including gig worker regulations, rapid technological advancements, and shifting behaviors among the emerging Generation Z. Additionally, customer personalization has emerged as a persistent theme in the interviews in the context of high inflation and slow economic growth. Furthermore, the vulnerabilities related to supply chain disruption and insufficient communication concerning inventory management, due to its partnership nature, present a significant challenge in meeting customer needs. To formulate reliable recommendations, understanding customer needs and desires was essential. Insights gathered from surveys, interviews, and a focus group enabled the development of suggestions that would meet consumer demands while addressing the issues highlighted by experts. To mitigate the challenges posed by slim profit margins, the recommendations focused on strategies to enhance and maximize profits by increasing purchase frequency, basket size, and fostering customer retention. Considering these insights, six main recommendations were drawn up, exploiting BM's main advantages of market reach and awareness as well as assessing vulnerabilities and external factors. The recommendations focus on two primary areas for profit maximization: improving customer experience and enhancing logistics and operations. They include: (1) Personalize the in-app experience; (2) Ensure a seamless shopping experience; (3) Streamline refunds and returns; (4) Implement temperature-controlled containers and pick-up points; (5) Implement Automation in Operations; (6) Improve dynamic pricing strategies. These recommendations address the main pain points identified by customers in their

in-app and shopping experiences, targeting the needs of European consumers while recognizing the prevalence of both online and offline shopping. Furthermore, they enhance the value proposition by leveraging convenience and technology. By increasing customer satisfaction and meeting current needs, these strategies are expected to foster customer loyalty and trust, ultimately improving long-term profits. According to experts, platforms are not only focused on their success but also the success of their partners. These recommendations enable the creation of an enhanced experience for both and leveraging network effects. After evaluating the recommendations based on desirability, viability, and feasibility, the most urgent ones to implement were identified based on the highest scores: (2) Ensure a seamless shopping experience and (6) Improve dynamic pricing strategies. The other recommendations also hold significant importance and urgency as the scores do not differ markedly. These recommendations empower hybrid platforms to increase the average ticket price and encourage customer retention, which will establish a superior BM for hybrid delivery with a strong emphasis on personalized service and an easy-to-manage platform, enabling the diversification of revenue streams and enhancing its offerings by targeting and segmenting different types of products. The research goal of this work was to propose changes to the Hybrid BM. The context and environment were carefully evaluated and studied, resulting in accurate and applicable recommendations.

In conclusion, market and macro trends are profoundly shaping changes in the OFD industry and its BMs. There is a strong need to develop personalized experiences and offer further customization and convenience to European consumers to formulate a differentiating proposition and have a chance to succeed in this competitive market landscape.

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Appendix

Appendix 1: List of customer interviews, surveys and the focus group

Interview Type	Objective	Age Group	Answers	Insights	Date
Customer Interviews	Understand the needs, concerns, perceptions, and preferences of who do not regularly use e-grocery services.	20-30	20	Identify barriers to adoption, uncover expectations and pain points, explore potential motivators, and analyse how non-users compare their in-store experiences with their perceptions of online grocery shopping.	01/10/2024 - 30/11/2024
Survey_1	Analyse insights from customers who have at least once used online food delivery services.		146	Information regarding purchase behavior, routines, pain points, most used platforms, and open ended questions for recommendations.	04/10/2024
Survey_2	Analyse insights from customer who use or do not use online grocery delivery services.		113	For users, understand motivations to use this service, pain points and purchase patterns. For non users, understand motives to not use and which factors would motivate them to use. For both, it was tested the adoption of potential recommendations and identification of areas of improvement.	18/10/2024
Focus Group	Encourage e-grocer customers to share their personal and professional backgrounds, fostering an informal atmosphere essential for full expression of opinions on areas of improvement.	22-27	5	Deepen the understanding of their preferences for online grocery shopping and specific pain points, drawing valuable information for strategic recommendations.	21/11/2024

Table 4 - List of customer interviews, surveys and the focus group (Authors' illustration)

Appendix 2: List of experts interviewed

Expert	Interviewee's Position	Company	Company Description	Gender	Date	Format
1	Head of South of Portugal	Glovo	Spanish multi-vertical platform established in 2014, now operating in 25 countries worldwide	Male	10/10/2024	Online
2	Country Manager in Portugal	Mercadão	On-demand marketplace for retailers, specializing in delivering large-size baskets for Pingo Doce	Male	10/10/2024	Online
3	Strategy and Operations Manager	Bolt	Technology company which provides mobility and food delivery services, present in 45 countries worldwide	Male	16/10/2024	Online
4	Head of E-Commerce	Continente Online	Renowned portuguese brick-and-mortar company	Male	04/11/2024	Online
5	Food Delivery Consultant	SAVOUR	Company which helps restaurants and supermarkets fully outsource delivery platform management	Female	22/11/2024	Online
6	Business Developer	HelloFresh	German company that delivers meal kits with fresh and high quality ingredients	Female	28/11/2024	Online

Table 5 - List of experts interviewed (Authors' illustration)

Appendix 3: PESTN Analysis of Hybrid Delivery Model in OFD Industry

FACTOR	KEY INSIGHTS
POLITICAL & LEGAL	• Legislation of digital labor economies: In 2024, European Governments became the first legislators to propose legislation regarding employee status of couriers – providing labor rights, transparent work conditions and minimum wages (European Council 2024). An attempt to provide legal certainty on the “misclassification” of millions of workers, who were 28 million in 2023, and expected to reach 43 million by 2025 (European Parliament 2019). • European Green Deal: new growth strategy aimed at achieving climate neutrality by 2050. Includes EU’s Directive on single use plastics and imposing green technologies using electricity and renewable energy sources (European Commission 2019).
ECONOMIC FACTORS	• Market Penetration Rate Heterogeneity: UK has a 10% market penetration for online grocery shopping, while Portugal lags at 3% to 5%, shaped by cultural preferences (Head of E-Commerce of Continente 2024). • Inflation: downward trend accompanied by slow wage growth in the second quarter of 2024 (Barnes 2024). Impacted by the COVID-19 pandemic and Russia’s invasion of Ukraine, inflation was impacted significantly leading to its surpassing of per capita disposable income growth and thus reducing the budgets of European households. Despite recent improvements, European consumers are not significantly increasing their spending but rather downtrading and putting a bigger spotlight on price (McDougall 2024; Romei 2024). • Higher sensitivity to price: The premium that consumers were willing to pay for healthy and sustainable items is also decreasing.
SOCIAL FACTORS	• Cultural Differences: both between and within countries is magnified by refugee movements and migration. In Southern Europe, grocery shopping is often a weekend family activity, whereas in Nordic countries, where brick-and-mortar stores are closed on Sundays, grocery delivery is more appealing. • Urbanization: relevant phenomenon across the globe but also in Europe which is seeing increasing population density in big cities, and this creates many opportunities for businesses (Runde 2015).

	• Social media: consumers are increasingly using social media to make purchases, and this is an area that industries need to be familiar with and utilize to their benefit (Haan 2024). • Health and Sustainability: Sustainability concerns are especially present among the young consumers which are still willing to pay a premium for sustainability, although less so than a few years ago, while wellness (e.g. weight management products) are increasingly important transversally (Adams, Alldrege and Kohli 2024). • Aging Population: This trend is characterized by an increase in the share of the elderly population and a decrease in working-age people in the total population (Eurostat 2024). At the same time, Europe is seeing an increase in single-person households (Eurostat 2018). The demographic changes can have a significant impact not only on consumer spending, but also in the labor market so businesses should be aware of these factors.
TECHNOLOGICAL FACTORS	• Automated delivery: either through vehicles or drones. In 2024, Amazon challenged the status quo, by implementing <i>Amazon Prime Air</i> in Italy and the UK, an autonomous drone delivery system to penetrate the European market. This system consists of individual packages' autonomous delivery within 30 minutes (Lok 2017). Amazon is investing in refining the security design of the drones to reach far locations, integrating them into the Amazon Delivery Network (Amazon 2023). In 2024, Bolt in a partnership with Starship Technologies launched autonomous robots that deliver groceries in Tallinn in a 3km radius of stores (Bolt 2024). This development supports green technologies by reducing carbon emissions and traffic. • Artificial Intelligence: powerful tool that can greatly enhance customer experience by personalizing options on platforms, optimizing routes, and enabling real-time tracking, which offers customers increased security (Costa 2024). Allied with the evolution of big data, Europe's industries and services can be transformed by using analytics and transforming data into innovative and complete products that can fulfill customer needs (European commission 2024).
ENVIRONMENTAL FACTORS	• Extreme weather conditions: lead to significant supply chain disruptions. It is expected that indirect costs associated with supply chain disruptions will grow exponentially in the following decades, while direct costs will also remain relevant. Since the world has become growingly interconnected, a disruption in one part can cascade onto other parts of the

	world. Supply chain disruptions can affect costs, so it is relevant to consider, and it has been a growing threat over the last years (Wang, 2024). Businesses must adapt to the growing demands by looking into renewable energy sources and reduce the dependency on fossil fuels. But at the same time, the research has found that companies that invest in having a sustainable offering often face issues as on paper consumers are willing to buy them but often don't follow with that commitment and price still plays a more tangible role (White, Hardisty and Habib 2019; Purta et.al. n.d.). • Sustainable Offering: leveraging the domino effect, as after consumers adopt sustainable practices in one area, they are more likely to follow through with the same approach in others, can make companies be able to be more successful when it comes to having a sustainable offering (White, Hardisty and Habib 2019). Making a sustainable offering is thus an option for companies and can provide an advantage in the eyes of the consumer if the price increase is reasonable. But environmental topics are also regulated and so it is also necessary to abide by certain rules, such as EU rules on packaging and packaging waste are important for the food delivery sector and need to be considered (European Commission, n.d.).
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Table 6 - PESTN Analysis on Hybrid Delivery Model (Authors' illustration)

Appendix 4: Analysis of Market Trends based on Primary Data

SOURCE	KEY INSIGHTS
SURVEY RESULTS	Survey 1 (OFD users – including meal and grocery delivery) • Diverse Consumer Preferences: The European OFD market is characterized by significant heterogeneity influenced by diverse eating habits and lifestyles across countries. Some nations possess deeply rooted dining traditions that may impact the adoption and growth of delivery platforms (Statista 2024a). Nonetheless, there is a notable trend towards online ordering driven by the increasing demands for convenience and instant gratification affecting consumer behavior across different countries. • Important factors for selection: A critical factor in platform selection, pricing, particularly delivery fees, is pivotal with 72.2% of consumers identifying it as a key selection criterion. Discounts and promotions were valued by 66.1%, while 55.7%

highlighted the importance of the delivery speed. The preferred delivery fee range is between €2 and €4, highlighting a strong consumer aversion to high charges.

Survey 2 (OGD users and non-users)

- **Frequency and Spending on Grocery Delivery:** Among the respondents who used OFD, 64% have used online platforms for grocery delivery, although 45% do so less than once every two months. Expenditure patterns show that 41% spend under €20 per order, while 35% spend between €20 and €50, indicating varied spending habits.
- **Motivators:** Convenience was the most cited motivation accompanied by the ability to save time and the avoidance of physical stores visits. The ability to shop niche products as organic and vegan products is also valued by respondents.
- **Product Preferences and Platform Choices:** Commonly ordered items include packaged snacks, beverages, dairy, and fresh products (such as fruits and vegetables) as well as household essentials such as cleaning supplies, with Glovo and Uber Eats being popular choices alongside traditional supermarket chains.
- **Low Subscription Uptake:** Despite marketing efforts, 75% of consumers do not subscribe to any delivery platform, with those who do subscribe primarily motivated by access to discounts, indicating a general reluctance towards subscription commitments.
- **Desired Improvements:** There is a strong consumer preference for platforms that offer free or low-cost delivery. Additionally, enhancements in customer experience, availability of local specialty items, and the integration of AI for personalized service recommendations are highly valued by users.
- **Diverse Consumer Motivations:** Consumers choose online grocery shopping for convenience, influenced by identified customer subgroups. The first own defined as “food deserts” by Food Empowerment Project (2017) – a geographic area where the access to affordable and healthy food options is restricted. Other subgroups include ones with limited local store options, or personal time constraints.
- **Pain Points in E-Grocery:** Main issues include mismatches between expected and received products, complex return processes, non-eco-friendly packaging, and inventory discrepancies impacting product availability. Regarding the mismatching between expected product and received, there are two sub-issues. Firstly, there is the high selectiveness of consumers regarding fresh products such as fruits, vegetables,

FOCUS GROUP (E-GROCERY USERS ONLY)

CUSTOMER INTERVIEWS (E-GROCERY NON-USERS ONLY)	meat, and fish. Secondly, for packaged perishable goods such as beverages and dairy products, it is impossible to verify expiration dates when shopping online. • Recommendations for Improvement: Suggestions include ability to set product preferences (such as expiration dates), access promotions for products near expiry date, easing the returns process, reducing plastic use, and maintaining accurate online inventory systems. • Enhanced Personalization: Proposed enhancements to personalize shopping experiences through data-driven suggestions and integrating social-media-like features to inspire and facilitate shopping. • Personal Connection to Shopping: Many respondents view grocery shopping as a personal and social activity, appreciating the ability to physically check and select fresh products. • Quality and Handling Concerns: Skepticism exists about the ability of online services to match the quality and care of first-hand in-store selection, especially for perishable items. • Barriers to Adoption: High delivery fees and unfamiliarity with online grocery options are significant barriers, together with concerns over delivery reliability. • Habitual Shopping Patterns: There's a misalignment between the spontaneous and frequent shopping habits of some consumers and the structured nature of online ordering. • Flexible Delivery Needs: Consumers desire flexible and responsive delivery options that align with their varying schedules and immediate needs. • Motivators for Adoption: Financial incentives such as free or discounted delivery and assurances of product quality and proper packaging could motivate non-users to try e-grocery services. • Conditional Consideration: Some participants might consider using e-grocery services under specific factors – financial aspects (discounts or free delivery), improve quality standards for perishable items delivery and life circumstances that make traditional shopping challenging (e.g. busy schedule).
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Table 7 - Market Trends Based on Primary Data (Authors' illustration)

Appendix 5: Key Uncertainties Identified of the OFD Environment

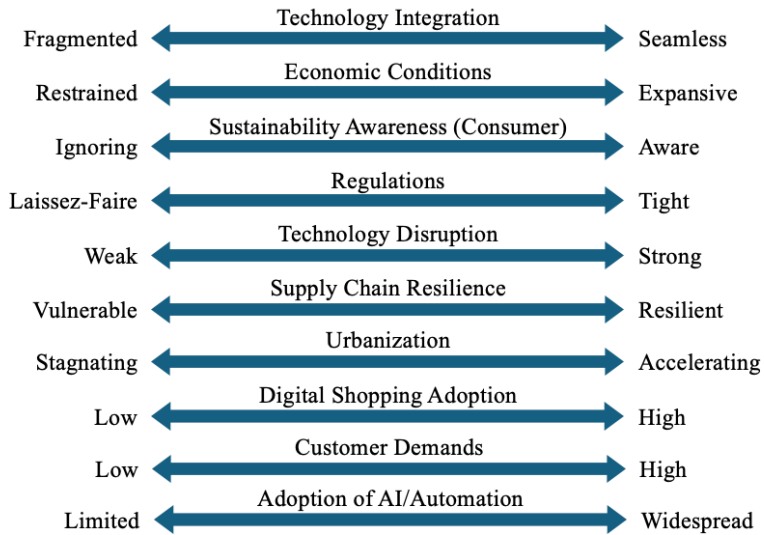


Figure 10 - Key Uncertainties of the OFD environment (Authors' illustration)

Appendix 6: 2-by-2 Matrix Ranking of Key Uncertainties

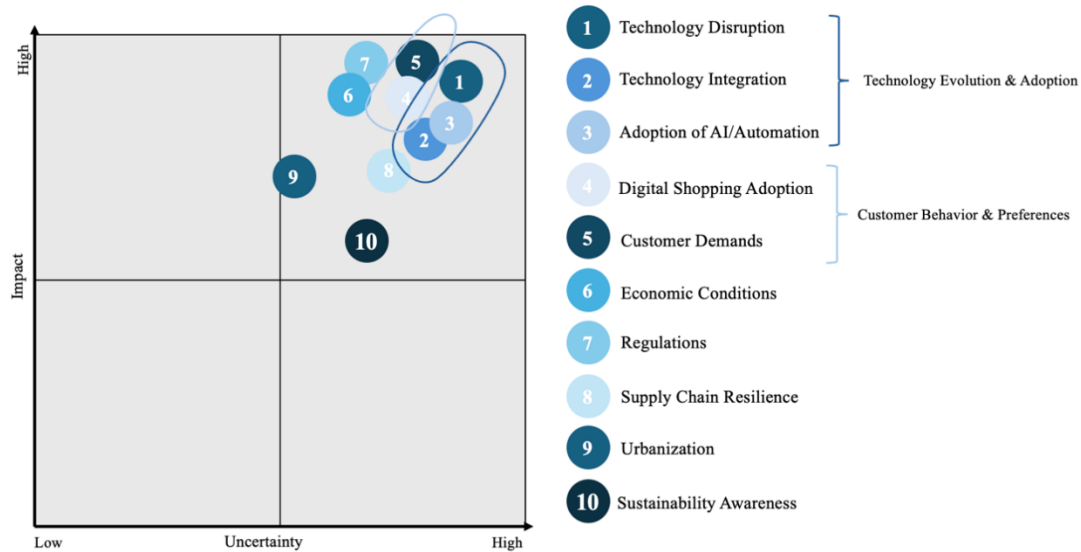


Figure 11 - 2-by-2 Matrix Ranking of Key Uncertainties (Authors' illustration)

Appendix 7: Proposed Example of a Streamline Refund Process

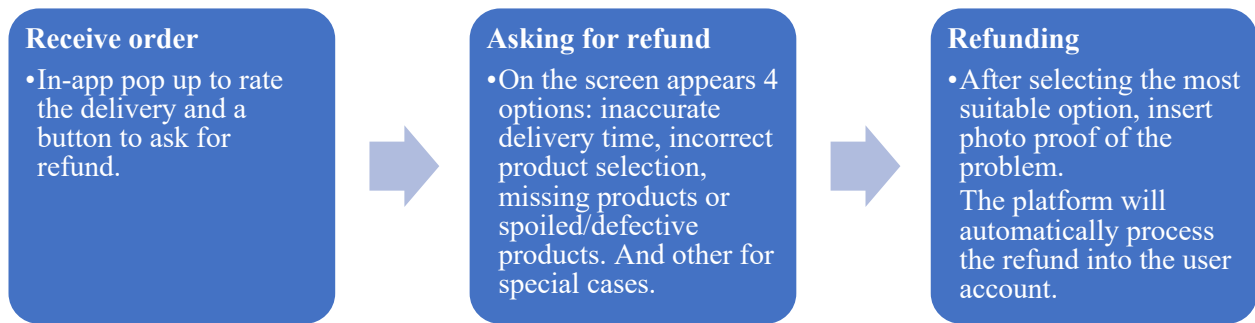


Figure 12 - Proposed Example of a Streamline Refund Process (Authors' illustration)

Appendix 8: Summary of the DVF Framework Applied to Recommendations

ACTION	DESIRABILITY	VIABILITY	FEASIBILITY
ACTION 1: PERSONALIZING IN-APP EXPERIENCE	5	4	4
	Highly desirable since personalized and engaging shopping experience is highly sought after	Despite the initial investment, it is expected to generate significant benefits in the long-term proving to be a viable option	The technological requirements including AI and machine learning can be complex but with the increasing availability and developments in the area it is a worthwhile investment
ACTION 2 - SEAMLESS OMNICHANNEL EXPERIENCE	5	5	4
	Highly desirable due to significant demand for a seamless omnichannel experience aligning with the trends for	Highly viable providing a boost in customer satisfaction, loyalty and increased sales	QR codes technology despite having benefits requires careful analysing of the technical challenges as well as data security

	convenience and personalization		and customer adoption
ACTION 3 - STREAMLINE RETURNS AND REFUNDS	5	4	4
	Highly desirable since a complex refund process may curb online shopping and provide an unpleasant experience. The recommended process will boost customer satisfaction and willingness to shop	It is viable since it can increase customer satisfaction and loyalty, but at the same time may require significant investment and process changes	Implementing a robust issue report system may be feasible, but it can also present issues when it comes to scalability, data security and fraud prevention
ACTION 4 - TEMPERATURE AND CLIMATE-CONTROLLED CONTAINERS AND PICKUP POINTS	5	4	4
	Very desirable since it helps to alleviate current problems with the delivery enhancing convenience and customer satisfaction	It is a viable long-term solution due to the benefits in sustainability, customer satisfaction and cost reduction. But may require upfront investment and careful planning and partnership selection	It is a feasible solution but will require a significant investment in terms of logistics and technology. Supply chain management, data privacy, food safety and efficiency will need to be considered.
ACTION 5 - AUTOMATION	4	4	4

	Desirable since a significant boost in efficiency can create a better customer experience but certain modalities may compromise on product range	Viable action, but despite allowing for a significant cost reduction and efficiency boost, it requires a significant level of investment	Feasible but involves a through strategic planning to select the right options and partners. The technology may also prove to be quite complex
ACTION 6 - IMPROVE DYNAMIC PRICING	5	5	4
	Highly desirable. It can boost customer satisfaction and loyalty, while also improving the environmental impact	Highly viable leading to improved customer satisfaction, reduced costs and sales increase	Feasible solution but requires a thorough analysis of the legal framework and ethical considerations. Transparency and fair treatment become paramount

Table 6 - Summary of the DVF Framework Applied to Recommendations (Authors' illustration)