A 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

What is the next chapter in the organized food retail industry in Portugal, up to 2030, and what are the strategic options that should be considered for strategy formulation? - Evolving Supply Chain Management: Internet of Things

TOMÁS DUARTE ROSA SANTOS

44818

Work project carried out under the supervision of:

Professor João Silveira Lobo

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Abstract

This project focus on the analysis of the organized food retail industry in Portugal, up to 2030. For this purpose, four scenarios were created using two critical uncertainties- shoppers' e-commerce usage and producers' direct-to-consumer adoption- and recommendations were developed. Moreover, the applications and impact that Internet of Things can have in supply chain management were considered for analysis, as this technology is evolving and already disrupting the way the supply chain operates. It is concluded that the key breakthroughs are on processes optimization, control of operations, communication across the whole supply chain and the information extracted throughout the full process.

Keywords:

Strategy, Foresight, Scenarios, Portugal, Food retail industry, Supply Chain Management, Internet of Things, Supply Chain

Introduction

In today's world, the concept of Internet of Things, also known as IoT, has been thrown around. The notion of IoT derives from the words "Internet" and "Things". Individually, both concepts are identifiable and understood to a certain extent. Internet is a global system that interconnects billions of computers worldwide. Everywhere from public, private, governmental, academic, business networks that are linked together through the Internet. Nowadays, there are, 4.66 billion active internet users worldwide (Statista, 2021), resulting in nearly 59,5% of people using the internet (Statista, 2021). The concept of "Things" is understood as not only what is pre-conceived when talking about this topic, such as gadgets, computers, machines, devices and more that are technological, but everything else, like furniture, houses, food, materials, art, or clothing. Like these, there are many more and this way, by combining "Internet" and "Things", IoT deconstructs the pre-conceptions surrounding "Things" and opens a range of possibilities, like did the "Internet", when it first appeared.

What is IoT and does it work?

"The Internet of Things is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction." (Gillis, 2021)

This definition simplifies the complex topic that is IoT. However, the real topic extends far beyond that.
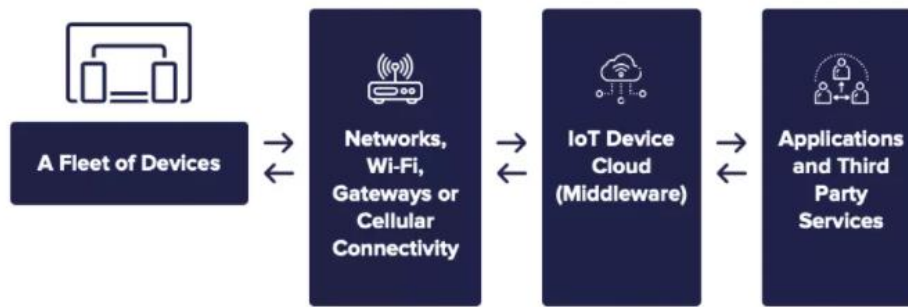
IoT frameworks are key to understanding this concept in action. IoT frameworks include 4 fundamental components. These, all together, represent the architecture behind IoT. In order to understand the whole picture, it is required to understand the components that make IoT: (1) Hardware Devices; (2) Software Applications; (3) Cloud and Communication Platforms; (4) Cloud Applications (Techtic, 2018).

In order to describe the process of data collection, processing, and storage inside an IoT framework, let us consider the human body. Humans collect information to be processed through the 5 traditional senses: sight; sound; smell; taste and touch. When transposing to the IoT concept and the different components that make this technology, the **Hardware Devices** behave and operate as the human body's 5 senses. These devices, that include controllers, micro-controllers, sensors, and other hardware devices, are the first point of contact with data. However, just like the hardware, the 5 senses only allow to collect information, but do not know what data to collect and how to process it. Therefore, we require **Software Applications**, in this case, the nervous system. This helps guide the human brain into processing the different information that is being collected through the multiple hardware devices. For instance, when a surface is burning hot and a person touches it, a data-based process will initiate. In this situation, the nervous system, or the different software applications being used, will "decode" the data being received and transmit it to the brain. This will most likely give back information so that other devices act accordingly. In this case, the **Cloud and Communication Platforms**

act as the human brain. Here, all data is concentrated and acts as the foundation of where all types of communication happen between the different hardware devices that collect data due to their software applications. Lastly, when understanding the Cloud and Communication Platforms, we are required to understand the neurons, for this example the diverse **Cloud Applications**. These are what allows the platform to function as they create the connections across the hardware devices and enable them to communicate with each other.

When applied, the hardware devices utilize existing and third-party devices, the software applications harvest and reuse application components, such as pre-established networks, hierarchical-based rules, geospatial information and gather time-series dependent data. Additionally, cloud and communication platforms that can range from different engines such as *Amazon Web Services*, *Microsoft Azure*, *Google Cloud Platform* or *Aliyun*, analyze and facilitate the analysis of information. Finally, cloud applications which consist of models that are structured around data science, artificial intelligence, engineering and business and set the "rules" of the whole IoT application (Accenture, 2017) (PwC, 2018).

The supply chain is one key component in retailing. A company that is able to operate a complex supply chain, with various suppliers and customers, in an efficient manner is, at the moment, a competitor to be concerned about. However, the same can be scaled down. Despite the technology and concept being rather recent, when addressing supply chain management, and still being in development, there start to exist some IoT solutions providers, increasing the affordability of the technologies involved. Thus, with more companies implementing IoT, further improvements are to be expected in the supply chain and other areas.

Why implement IoT in the supply chain:

The world of business is constantly evolving and becoming more complex. With globalization, for many industries there are no longer geographical limitations. Considering, for example, an *Iphone* by *Apple*. When customers order a phone in the US, the product itself is not assembled

in the country. Not even the same continent. *Apple* outsources manufacturing to two Taiwanese companies that have facilities in Asia and Europe (GES, n.d.). From there, *Apple* contracts major carriers, like *UPS* and *FedEx*, that ship *Iphones*, through planes, to reach the US. Then they are distributed to facilities where logistics professionals sort and redirect the phones to their final destination, the end-consumer. Simplified here, this example describes the globalization of supply chains and the interrelations required to gain a competitive edge. In addition, consumers are increasingly demanding, due to the facilitated access to information and different options available, a value proposition that offers on-time delivery at faster rates and the respective customer support to aid and ease the purchasing process. Altogether, competition, demand's needs and the interconnection of suppliers makes the topic of supply chain management more challenging for companies.

Based on current studies, IoT has an increasing potential, aimed for both consumers and businesses (PwC, 2018). It is estimated that by 2030, that IoT could enable 5.5 trillion USD to 12.6 trillion USD in value globally (McKinsey, 2021). Of this, the most considerable potential in economic value is in the factory setting, as it is predicted to amount nearly 26 percent of the total value (McKinsey, 2021), and this includes the standardization and optimization of processes. Moreover, in this report, it is concluded that business-to-business applications represent the majority of potential value, as it is estimated to amount nearly 65 percent of the global IoT value by 2030 (McKinsey, 2021).

Therefore, nowadays, due to the potential and benefits of this technology, businesses are implementing solutions such as IoT to better manage and control their operations.

When applied to supply chain management, the successful implementation of IoT addresses key components that allow companies to become more agile, using real-time information, and flexible. The main benefits of IoT applications are: (1) Asset tracking; (2) Forecasting and

Inventory Planning; (3) Real-time Visibility; (4) Connected Fleets; (5) Regulatory Compliance ("How IoT Can Be Implemented In Supply Chain Management", 2017).

Asset Tracking:

Traditionally, companies control assets by tracking bar-codes and numbers associated with a specific product, thus, when the product reaches a specific stage of the supply chain, the item is scanned, giving information regarding what arrived and what did not. In asset-intensive sectors, such as manufacturing, energy and utilities, there are multiple challenges that limit the efficiency of a company's operations. These include deliveries being delayed and inventory being either lost, stolen or damaged.

The purpose for companies to implement IoT in the supply chain is to be able to receive real-time information regarding any component of the whole system and act accordingly. This possibility grants companies the ability to be more agile and flexible in an evolving and more complex world of business, where customers are increasingly demanding, due to on-time delivery at faster rates and the respective customer support to aid and ease the process. Thus, in this case, with the implementation of an IoT framework, a company could track exactly where the shipment is in the supply chain and if it was delayed, based on the initial expected duration of transit. Moreover, it allows monitoring of any particularities regarding the shipment, including, for example, weight variation, temperature and/or the condition of the product being shipped. Taking all these into consideration, with the type of data that a company can extract by having IoT in the supply chain, a firm can focus on ensuring on-schedule delivering, quality control management and forecasting analysis ("How IoT Can Be Implemented In Supply Chain Management", 2017).

Forecasting and Inventory Planning

Currently, the limitations of nowadays' used systems for forecasting and inventory planning are the fact that they cannot adapt in real time to changes that happen. With IoT applications, for instance sensors, the company is able to collect data regarding consumers' behaviour, this including at the point of purchase and of usage, thus facilitating product manufacturers in understanding and matching exactly the production needed. This, previously, would be done solely based on actual consumption. However, by implementing the IoT technology in the supply chain, information is always available. Therefore, by having access to all this real-time data, manufacturers can better discover new trends and patterns in consumer behavior, thus allowing them to schedule production more efficiently and better ensure that products sell as much as possible ("How IoT Can Be Implemented In Supply Chain Management", 2017).

Real-time Visibility

As supply chains become more complex, due to the increasing number of agents involved, especially if it operates globally, so does communication across the whole value chain needs to become more accurate and simplified. Thus, IoT applications allow for the whole supply chain to be better in-sync and unified. In this way, as the goods are in transit, every party involved from production until the end-consumer can track the status of incoming orders and prepare for shipping and follow with on-time transactions ("How IoT Can Be Implemented In Supply Chain Management", 2017).

Connected Fleets

IoT has beneficial applications to managing fixed assets and production levels, however, it can also help coordinate assets that link the different points of the supply chain: trucks, ships, cars and others. This means that, if a company's distribution fleet is all connected, it grants the business to better allocate assets and thus lower costs regarding transportation. Additionally, it

helps build delivery efficiency and guaranteeing improvements in customer experience ("How IoT Can Be Implemented In Supply Chain Management", 2017).

Regulatory Compliance

In some industries, it is important to guarantee that products follow certain procedures and conditions. These industries include those with food and/or pharmaceutical products. For instance, in the food retail industry, in the US, the "Sanitary Food Transportation Act of 2005 requires that FDA prescribe sanitary transportation practices to ensure that food (...) transported by motor vehicle or rail is not transported under conditions that may adulterate the food." (FDA, 2021) Therefore, highly regulated industries require transporters to follow guidelines to ensure, for example, that products stay within a range of temperature, or that they arrive during a specific time-window. Moreover, due to the control over these products, transporters and manufacturers need to present proof of following the guidelines. An IoT-based supply chain allows for agents in the supply chain to better supervise these products and be safeguard of any eventual inspection conducted by sectorial authorities ("How IoT Can Be Implemented In Supply Chain Management", 2017).

Challenges and threats IoT applications in the Supply Chain:

Currently, the IoT concept is still recent, thus, as it evolves, new threats arise and highlight the damaging impact that negative occurrences can have on a firm (Deloitte, 2017). Despite allowing for additional **data** to be collected, therefore trailing the path for businesses to create new opportunities that can turn into value, many times, of the total amount of information only a small fraction is effectively and efficiently used (McKinsey, 2015). Many times, IoT applications are used as tool for in the detection phase and control, rather than optimization and prediction (McKinsey, 2015). Thus, what can happen is that data gathered is not correctly interpreted and processed (Newman, 2021).

However, the main threat to IoT-based systems is related to security. As new technologies are developed, more often than not, actors in the market tend to rush to implement them, as innovation opens the door to great value (Thales, 2021). Nonetheless, when doing so, businesses are often more exposed to having gaps in their systems. These can later be breached, and put the company at risk, by hackers that can not only take advantage of a firm's infrastructure (connected hardware devices) and of its, many times, sensitive data. Consequently, reputational and monetary damages can occur. For example, in 2020, the "*Mirai*" malware penetrated and infected a grid of nearly 400000 connected devices. These included routers and cameras/recorders. This cyberattack disabled parts of large corporations' structure through *Amazon Web Services*, indirectly affecting their clients, such as Netflix and Twitter (Thales, 2021).

Internet of Things in Food Retail

IoT applications are highly efficient in industries that, by nature, have a complex supply chain, deal with high volumes of inventory and, more importantly, if these have specific requirements. As mentioned before, as two of its advantages, an established IoT network throughout the whole chain allows for better real-time visibility of in transport goods and, which is crucial for the food retail industry, for assuring that regulatory rules are followed. One key issue of this industry, and a raising concern from international governmental organizations, such as the United Nations (UN), and NGOs, is food waste. IoT solutions, nowadays, are already being used to reduce food loss. These have already been able to contribute to a reduction of 40 percent of this issue, by measuring and monitoring temperature of food products (World Economic Forum, 2021). Currently, the US corporate giant, *Walmart*, has implemented multiple devices across its stores that result in being transmitted a total 1.5 billion messages per day across hardware, that communicate and adjust accordingly, when needed (Retail Wire, 2021). Additionally, an innovative example of IoT applications being applied in the food retail supply

chain is the company *Eseye*, which is an IoT provider of tools that aid promoting sustainability and combating environmental issues (Retail Insight, 2021). This firm has laid-out intelligent sensors that are able, by using real-time data, track and analyze the growing of crops assessing several components and criteria, such as size and color, in order to better predict and optimize agricultural fields, including identifying the best harvest date or the amount of water required (Retail Insight, 2021). Therefore, highlighting the necessity and capabilities of IoT applications in the food retail industry.

Conclusion

This paper analyzed the implementation of IoT solutions to the supply chain that can help improve optimization of processes and maintaining control of operations, thus helping in creating value. It was concluded that, nowadays, before reaching the end-consumer, products need to go through complex chains. This added complexity requires the different actors to stay interconnected and for themselves to operate at maximum efficiency. Therefore, it is indicated, throughout this study, that, in fact, despite the potential challenges and threats associated, IoT applications have the ability to keep innovating how business-to-business interactions are made. The capability of having access to real-time information, to process it and optimize accordingly, clears the pathway for many firms, that require meticulous interactions and timings across the supply chain, to become more strategically agile in today's world.

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NOVA NOVA SCHOOL OF BUSINESS & ECONOMICS

Strategic Planning Field Lab

How will the organized food retail chains and the customer journey evolve in Portugal up to 2030 and what challenges and strategic opportunities result for the main modern retail chains operating in Portugal?

23809   Ana Marquês
32173   Mariana Henriques
44851   Marisa Costa
44818   Tomás Santos

Professor João Silveira Lobo

Fall Semester 2021

Emerging technologies and shifting shoppers' demands are significantly changing the Portuguese food retail industry, making it a relevant industry to perform scenario planning

Industry

The food retail industry is changing considerably due to cost pressure, demographic changes and shoppers' demand for convenience. For this reason, retailers need to adapt their strategy to remain competitive in the long term.

Furthermore, during the COVID-19 pandemic, this industry experienced several adjustments to comply with the safety regulations, and it is presently questioned whether these changes will remain and evolve even further or if they were only temporary solutions used during the pandemic.

Due to the solid and continuous presence of this industry in people's lives and the degree of uncertainty surrounding this industry, an analysis of the future of retail food chains seems to be highly relevant.

Country

As Portuguese students analyzing the retail food industry, our own country is the one that entices our interest the most. Furthermore, our group has a greater probability of reaching critical stakeholders in this market, who can provide useful insights for a more comprehensive analysis. As a result, during the development of this work project, our group had the opportunity to interview five experts in the Portuguese food retail industry (Further information regarding the interviews can be found in Appendix).

Moreover, the food retail industry with annual sales of €15.6 billion[2] in 2020 is particularly relevant in Portugal since two of its players are among the top three companies with more sales in the country[3].

Time Horizon

For the focal issue, a time horizon of 9 years was deemed suitable.

Due to new technological advancements and changes in customers' preferences and demands, it is expected that retail food chains as we know them today, will experience significant changes by 2030.

Shoppers are seeking greater transparency from their retailers to be able to make informed decisions that suit their nutritional needs and values[4]. Moreover, grocery stores of the future will follow trends toward health and wellness, personalisation and sustainability[4] and will have a vastly improved omnichannel experience and a more efficient operating model[5].

A logical and detailed analysis was performed in order to achieve reasoned and robust strategic recommendations

Macrotrends identification

The transactional and contextual environments were analyzed.
Using the STEEP+I framework, over 40 key forces which are likely to impact the future of the industry were identified and then place into an impact/uncertainty matrix

01 | Transactional Environment
02 | Contextual Environment
03 | Pre-determined & Uncertainties

Plausible Futures Development

Using two forces with high impact and uncertainty that elicit the most relevant narratives, four scenarios were developed. Key performance indicators were identified for companies to validate the velocity and direction of the two axes of the scenarios and implement strategies accordingly

04 | Scenarios

Strategic Intent Development

Following the creation of the scenarios, key implications and opportunities for the players in the food retail industry were identified. Based on these implications, strategic recommendations were provided across three time horizons with different degree of risk and impact

05 | Recommendations

3
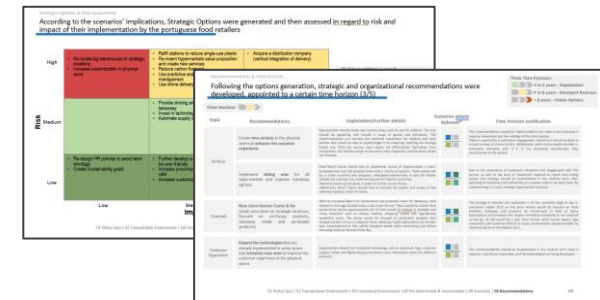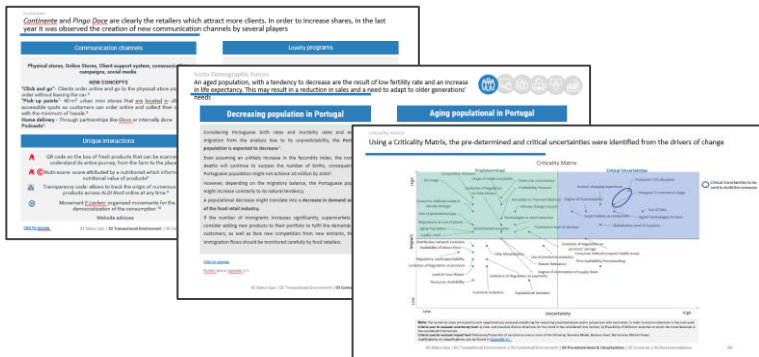
The solid positions of big retailers cause barriers to enter the market and high competitive rivalry

Threat of new entrants	Bargaining power of buyers	Competitive rivalry[2]	Threat of substitutes	Bargaining power of suppliers[3]
Moderate	**High**	**High**	**Low**	**Moderate to high**

Threat of new entrants — Moderate

To join the Portuguese market, a new food retail chain must compete with *Continente*, *Pingo Doce*, *Auchan*, among others. **These are food retail chains with size, capacity, experience and popularity. New entrants are required to commit considerable capital expenditures** in order to obtain physical store space, machinery and equipment. **Prospects must also be able to get supply arrangements with a variety of food producers and distributors.** Because the major grocery chains have already established ties with many suppliers**,** it will be difficult for new entrants to gain supply contracts with specific manufacturers. Nonetheless, *Mercadona* **entered the Portuguese market in 2019,** and the grocery chain now has 24 locations and plans to invest 150 million euros in Portugal in 2020[1]. The entry of companies operating in the online channel such as *Amazon* is also a threat to food retailers in Portugal.

Bargaining power of buyers — High

Buyers want the **highest quality products at the lowest feasible price**. They can easily **compare products and prices** and choose the items depending on their budget and preferences. Portuguese customers can switch from one competitor to another **with no switching costs associated** since they can get **similar products** from other food retailers, small groceries or biologic stores, making their bargaining power over food retailers high.

Competitive rivalry — High

The food retail industry in Portugal is considered to have a high rivalry since **it has several similar big players that have the same type of stores (proximity stores, supermarkets and hypermarkets), in similar locations and sell products with low differentiation.** Additionally, the barriers to exit tend to be moderate to high. Although food retail chains have very liquid inventories, which can be easily sold once a company decides to exit the market, there is also a large up-front cost in equipment that is not that easy to sell or transport.

Threat of substitutes — Low

There is a **low threat of substitutes in the food retail industry**. At a first level, substitution risk derives from **butchers, fish-mongers and bakeries**. However, shoppers tend to prefer retail chains mainly because these **gather a higher variety of products**. At a second level, restaurants act as an alternative for customers to not eat at home. Additionally, with the popularization of new food diets, like veganism, vegetarian and more recently insect-based, **specialized stores can substitute and takeover specific retailers' product categories**. Finally, **aggregating platforms**, as on-demand deliverers, are able to gather all these substitutes, thus representing the most significant threat to food retailers, however, **e-commerce demand of groceries is still low.**
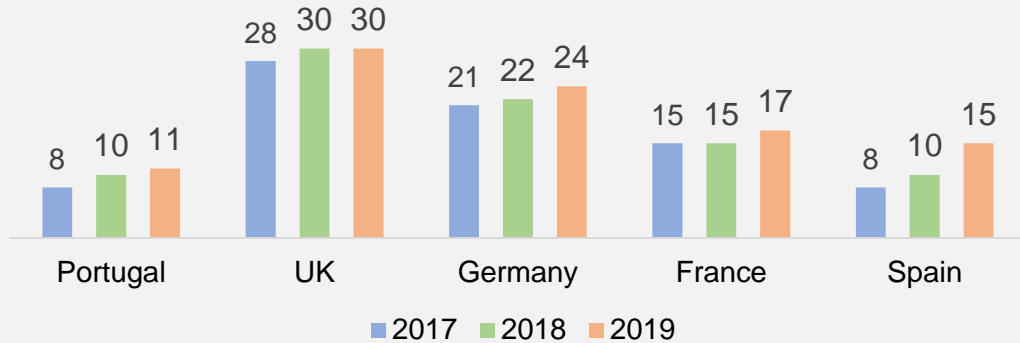
Bargaining power of suppliers — Moderate to high

Although there is a **large number of suppliers** (including local, regional, national and international producers and wholesalers), there are **some brands that dominate their product category in terms of customer preference.** As a result, these brands are able to exert **high pressure on retail chains.** Nevertheless, the **private labels** along with the global scope of the supply chain **help to dilute the bargaining power of suppliers**.
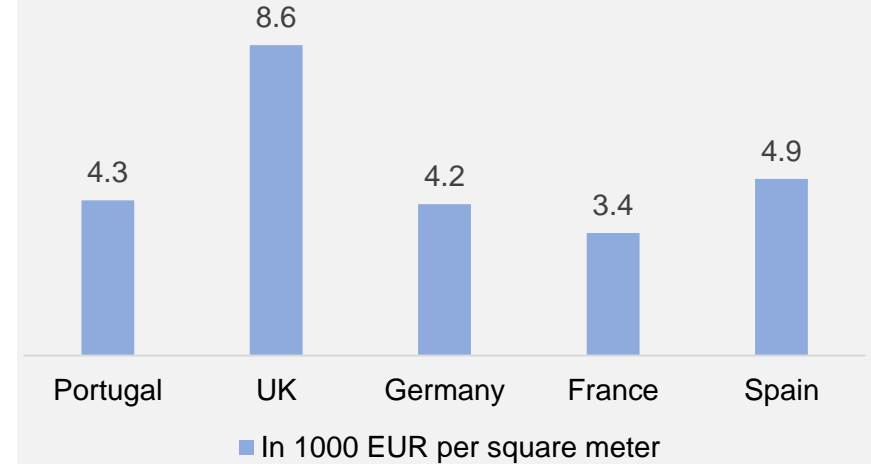
When compared to other countries, the Portuguese food retail industry is below the average in terms of online of shares of individuals who purchased online and the level of grocery sales per square meter

Share of individuals who purchased food or groceries online (in percentual point)[1]

Legend: 2017, 2018, 2019

Portugal: 8, 10, 11
UK: 28, 30, 30
Germany: 21, 22, 24
France: 15, 15, 17
Spain: 8, 10, 15

Despite Portugal having the lowest percentage of individuals purchasing food or groceries online, it also opens the possibility for faster growth rates in the coming years. With the COVID-19 pandemic, overall values increased, thus further showcasing this tendency in Europe[2].
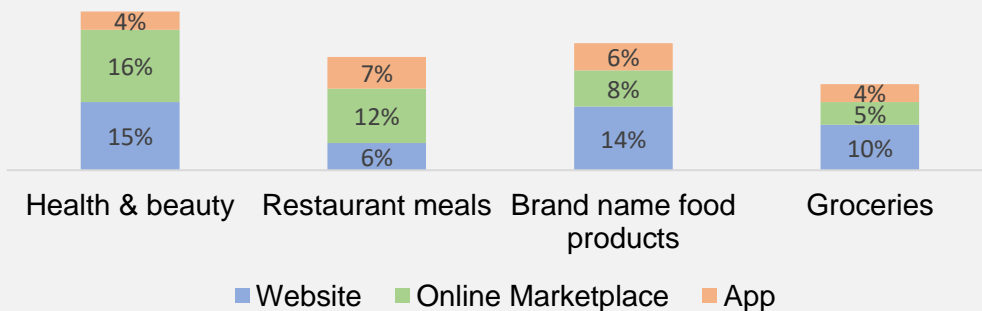
Grocery sales per unit area in 2020 [2]

Portugal: 4.3
UK: 8.6
Germany: 4.2
France: 3.4
Spain: 4.9

In 1000 EUR per square meter

Online purchase intention once stores are open after the pandemic in Portugal [3]

Health & beauty: Website 15%, Online Marketplace 16%, App 4%
Restaurant meals: Website 6%, Online Marketplace 12%, App 7%
Brand name food products: Website 14%, Online Marketplace 8%, App 6%
Groceries: Website 10%, Online Marketplace 5%, App 4%

Legend: Website, Online Marketplace, App

According to Statista, data shows that, due to COVID-19 pandemic, online shopping has increased. Moreover, in the online sales channel, for "Groceries" and "Brand name food products", in Portugal, customers prefer to use a website as the point of sale.

Based on an analysis conducted in 11 European countries, in 2020, the average grocery sales per unit area (square meter) was of 4,563 EUR. This means that, Portugal is slightly below the European average at nearly 4,300 EUR.

Taking into consideration the results of the graphic regarding the share of individuals who purchased food or groceries online and the grocery sales per unit area, Portugal, has the potential to develop and improve in online and offline sales channels, as it currently positions below the average.

Click for sources

01

Transactional Environment

| Actors in the industry

Recent trends, technologies and shoppers' preferences are complexifying the food supply chain, which is now less linear. Retailers need to ensure its streamline and to innovate to keep attracting shoppers despite new alternatives

- In the food supply chain, **producers and processors** (manufacturers/suppliers) are responsible for raw materials and finished goods that will be sold to shoppers[1].

- **Distributers/Wholesalers** have warehouse facilities that process orders and facilitates fulfillment, handling inventories and transportation so that goods are later distributed to retailers' stores or storing facilities.

- Retailers may also have warehouses or central distribution centers, in order to bridge the gap between the manufacturer availability and their necessities[2]. This is part of the inbound logistics of food retailers.

- Recent tendencies have impacted the supply chain. The process is now **less linear** and there are **new interactions between the different actors**. Retailers used to be the main link between manufacturers and customers, however, companies emerged with different value propositions. Currently, manufacturers are increasing **Direct to Consumer** (D2C) strategies, selling directly to the final customers, and, in this way, reducing their dependence on food retailers as intermediaries. D2C is also facilitated by the appearance of **new deliverers**, such as *Glovo* and *Getir*[3]. With the increase of e-commerce, food retailers need to ensure **transport to shoppers' houses**, but also other alternatives such as **Click&Collect** so that shoppers may have their products available immediately and transport them to their houses themselves.

- As already explored in Porter's 5 forces analysis, producers and buyers have high bargaining power over food retailers and **since food retail is based on low margins and high volumes, the supply chain must be efficient, coordinated and monitored to ensure value is not being lost.** Supply chain streamline must be a priority for food retailers.

- Food retailers must adapt to accommodate new tendencies and continue to attract shoppers and reply to their demands and preferences.
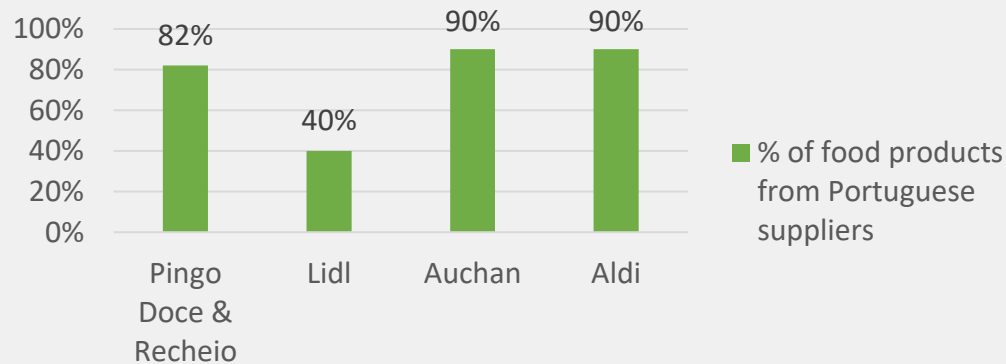
Food retail industry supply chain

Source: Own elaboration
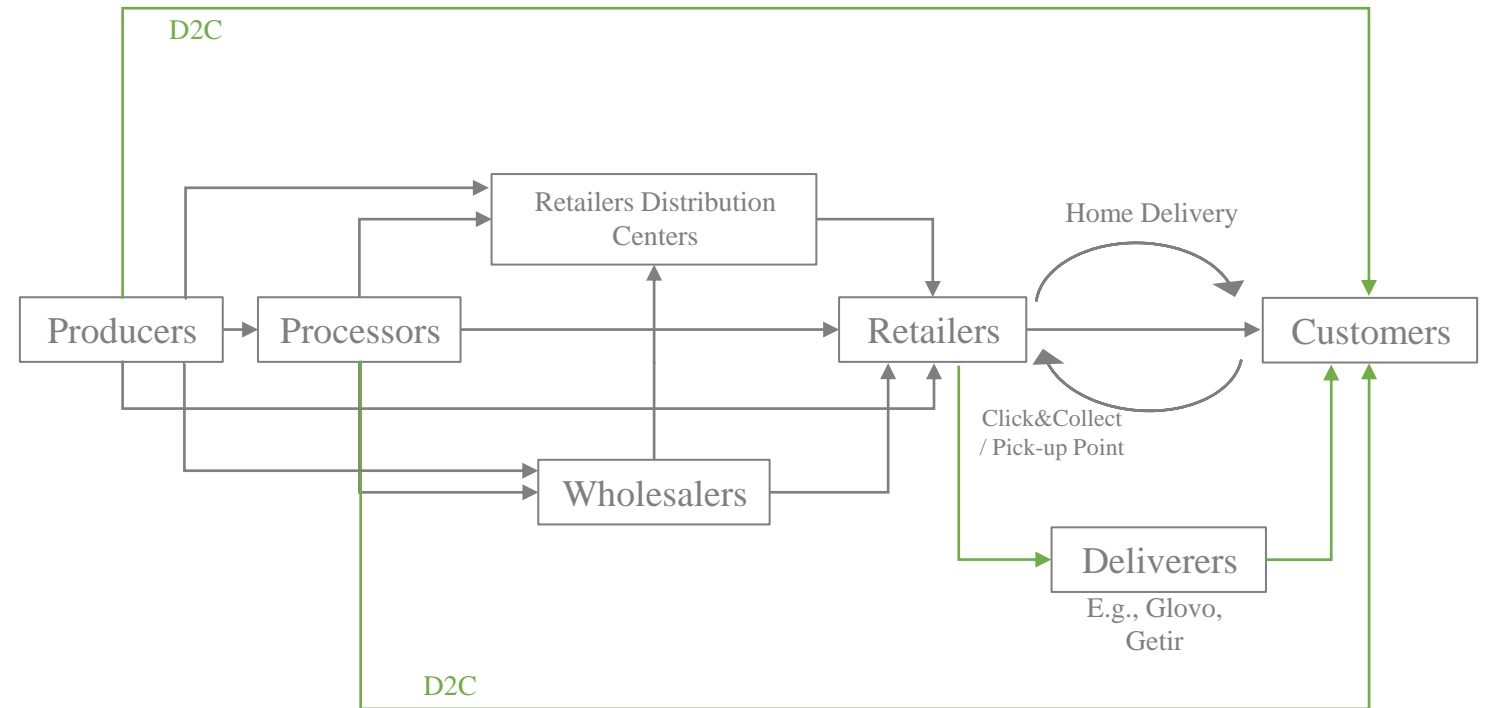
→ Transportation

→ Recently created interactions

The following slides will present the several **industry actors** that interact with food retailers following the supply chain traditional linear sequence. In order to have goods available, food retailers receive them from **suppliers**, afterwards employees ensure they are available to the **customers**. In order to better serve and attract customers, it is important to also assess and be aware of other **competitors** and the industry market shares. For not sold goods and other solidarity actions, food retailers collaborate with **NGO's**. After sales and profit calculations, food retailers present their results to their **investors**. In a global sphere, the industry and its practices are regulated and controlled by entities such as national and international **regulators** and **public entities**.

Food Retailers are creating initiatives to support national producers. These initiatives enable the reduction of greenhouse gases emissions, promote local development and strengthen the relationships with suppliers

National offer

Bar chart: **% of food products from Portuguese suppliers**
- Pingo Doce & Recheio: 82%
- Lidl: 40%
- Auchan: 90%
- Aldi: 90%

- In 2020, purchases of fresh products from local producers by *Auchan Retail Portugal* rose 20% compared to the previous year[1].
- 2 out of 3 *Continente* brand food products are produced in Portugal[2].

Unique interactions

- Partner of more than 100 small producers located within a 50-kilometer radius around its stores[3].
- 'PickUp Local' collection points that offer a dedicated space for food and non-food products to be purchased directly by customers from local producers, small traders and artisans in *Auchan* stores [4].
- *Mercadona* has a policy to support the product sectors that are going through more sensitive periods. This includes the milk sector. So, 100% of the milk sold in Portugal is Portuguese[5].

Relationships with suppliers

- About 80% of purchases made by *Continente* in 2020 were made to suppliers with whom the company has had a **relationship for 5 years or longer**[2].
- Support for small and medium-sized perishable producers who are members of the *Confederation of Farmers of Portugal* by **anticipating** the **payment term** for an average of ten days (instead of the 30 days provided for by law), without any financial costs to the producer[6].
- *Recheio* started the "Garrafeira de Excelência", a project of **representation and exclusive distribution** of wine brands of small and medium Portuguese producers[6].
- *ALDI* implements new environmental standards through **training programs online and face-to-face.**
- International ***ALDI* Detox Summit** in Shanghai creates awareness on environmental issues among regional suppliers[7].
- **Totaler supplier** is a concept of *Mercadona*, in which, unlike a normal distributor, they go first to the customer to see demand and with that, they develop the offer, working with the agri-food chain[5].
- The *Continente Producers Club* was born in 1998 to **bring national farmers closer to customers** and promote best production practices[8].

Regarding competitors in the market, *Aldi* and *Lidl* stand out for low prices, while *Continente* and *Pingo Doce* have the best price-variety ratio

Positioning map of the food retail industry leaders in Portugal

Market share of the food retail industry leaders in Portugal (in 2020) [1]

- Continente — 26.8
- Pingo Doce — 22.9
- Lidl — 11.3
- Intermarche — 8
- Auchan — 5.6
- Minipreço — 3.9
- Others — 20.7
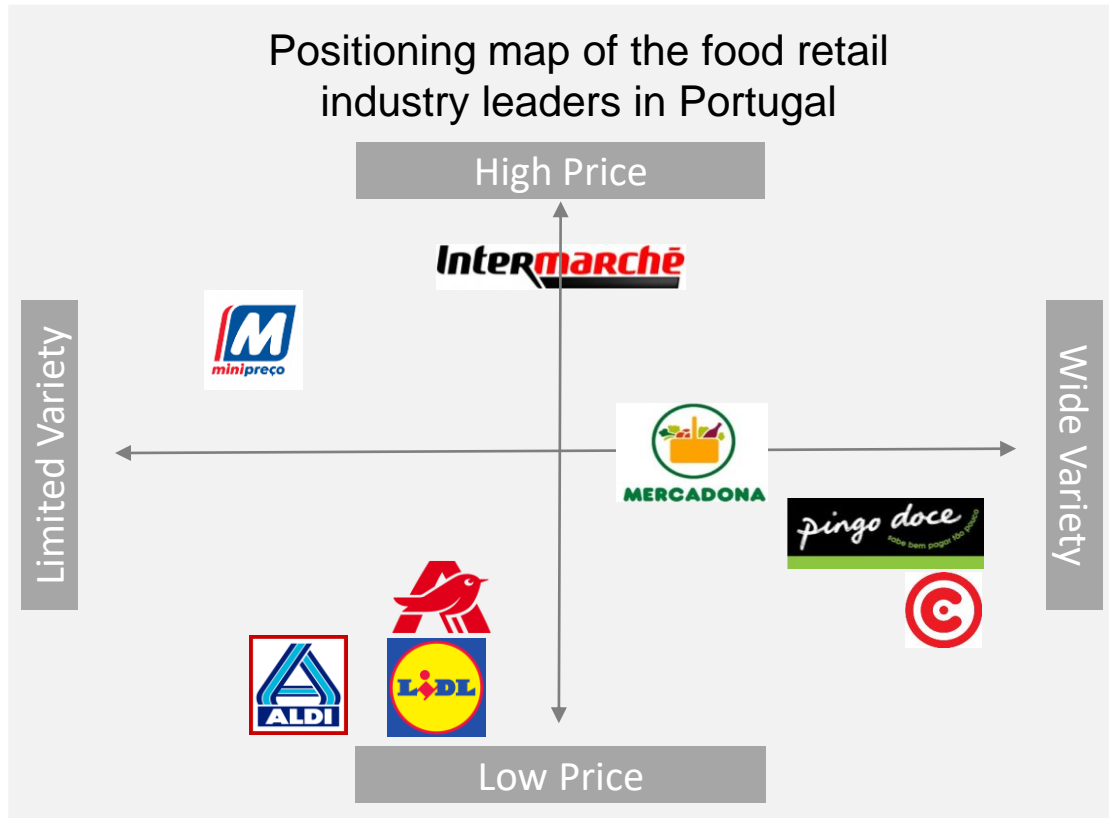
- According to the "Observatório Shopper Experience", the two most important factors for the Portuguese shoppers, when choosing a supermarket, are the price (85%) and the product variety (77%)[1].
- *Aldi* and *Lidl* are the food retail chains with the lowest prices if we disregard the price of meat and fish, which are affected by external agents and, for this reason, have higher pricing. *Intermarché* is the most expensive brand[2].
- The best price-variety ratio is found at *Continente* and *Pingo Doce.*
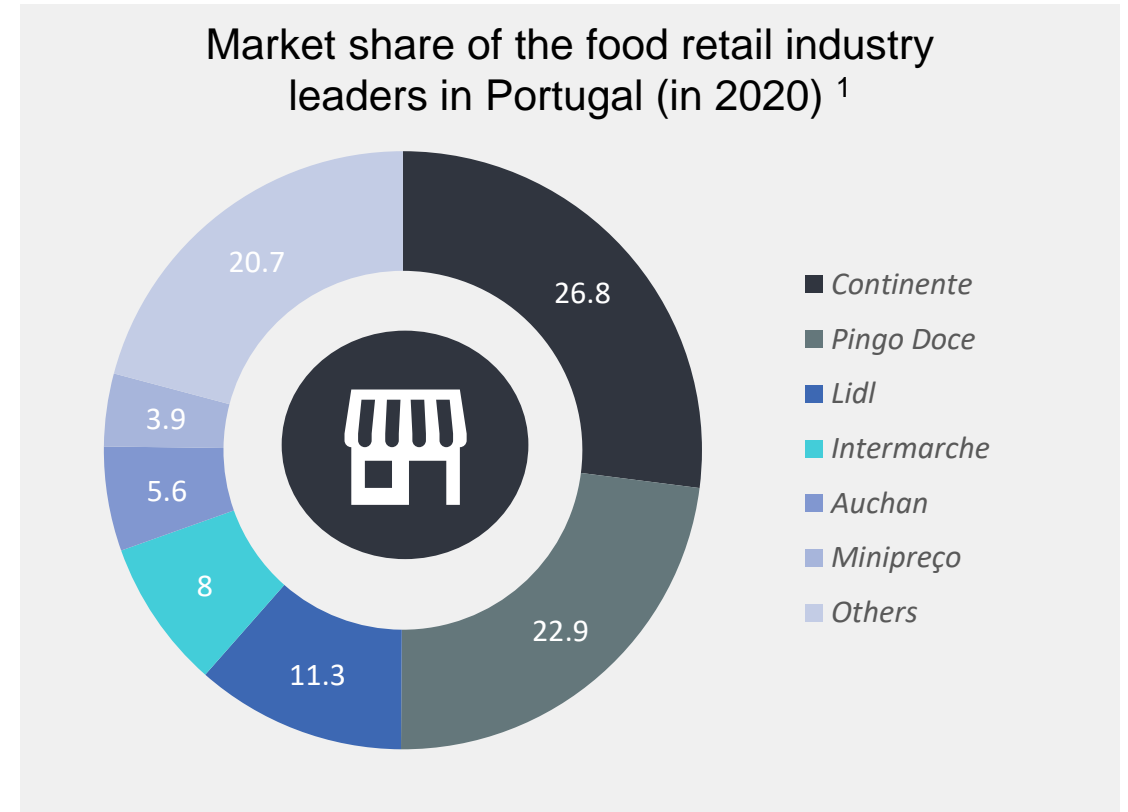
In 2020, during the pandemic, only *Lidl* and *Intermarché* were able to increase market share, with +1% and +0,6% respectively. Nevertheless, *Continente* and *Pingo Doce* were able to maintain their positions as the biggest national food retailers [1].

In what concerns employees, *Jerónimo Martins* was considered to be the most attractive employer to work for in Portugal. *Pingo Doce* and *Continente* are the retail food chains that invest more in training

- *Jerónimo Martins* was recognized as the "Most Attractive Employer to Work for in Portugal" [1].
- *Pingo Doce* was acknowledged by the magazine *Exame* as the "Biggest Contributor to Employment" among the food retailers in Portugal [1].
- One of the pillars of the Jerónimo Martins Group's strategy is to invest in employees' personal and professional development. The *Escola de Formação Jerónimo Martins* (EFJM) was established in 2005 to provide continuous learning for the Group's employees. EFJM responds to individual needs by offering training programs focused on technical learning, management and leadership [2].
- *Pingo Doce* invests over a million hours in training each year [3].

- *Sonae* is one of the promoters of the European training project entitled Reskilling 4 Employment, which aims at re-qualifying unemployed professionals or those in occupations at risk of being altered or disappearing because of automation [4].
- In 2020, the training model moved from a face-to-face approach to a digital one, resulting in a 29% rise in the number of participants (44,671) and in more than 787,000 hours of training [5].

- According to a *KPMG* socioeconomic study, *Lidl Portugal* has contributed significantly to the wealth and employment creation in Portugal over the last five years (1% of the national PIB in 2018, which is equivalent to 2,120M€) [6].
- For *Lidl*, employee training is a strategic priority since it allows collaborators to gain the necessary skills to carry out their functions more productively and with greater quality. Moreover, training enhances career progression since it provides employees with new skills and tools. For this reason, all employees participated in technical and personal skills training sessions totalling 130,000 hours of training [7].

- *Fordis Portugal*, a Training Association for Distribution, was founded in 1995 to design and promote professional training for all employees of *Intermarché*.
- About 140,000 hours of training are provided yearly [8].

Continente and *Pingo Doce* are clearly the retailers which attract more clients. In order to increase market share, in 2020, the creation of new communication channels by several players was observed

Delivery options

Shoppers have, nowadays, many delivery options besides the traditional physical stores where they chose and take home immediately

"Click and go"- Clients order online, go to the physical store and pick up the order without leaving the car[4].

"**Pick-up points**"- 40 m[2] urban mini stores that are located in ultra-easily accessible spots, so customers can order online and collect their shopping with the minimum of hassle[4].

Home delivery - mainly outsourced to distribution companies or through new partnerships such as *Glovo*.

Unique interactions

There are initiatives that aim to increase transparency and the sense of community

QR code on the box of fresh products that can be scanned to understand its entire journey, from the farm to the place[4]

Nutri-score: score attributed by a nutritionist which informs the nutritional value of products[4]

Transparency code: allows to track the origin of numerous meat products across *ALDI Nord* online at any time[8]

Movement *E.Leclerc*: organized movements for the democratization of the consumption[9]

Website advices including recipes or sustainable practices

Loyalty programs

There are several programs that are developed with the aim of increasing shoppers' loyalty however, the similarities of the programs and inexistence of switching costs jeopardizes the results

CLIENT CARD

-Exclusive discounts[1]
-Different methods of payment[4]
-No delivery fee[4]

BIRTHDAY CAMPAIGN

-Giveaways (20€ bought = 1 participation)[2]
-Big discounts[3]

DISCOUNT GROUPS

-Students[4]
-Families with babies[5]
-Large families[6]
-Elderly people[7]

Communication channels

Some channels are used to increase brand awareness, engagement with the customer and trust

Marketing campaigns
Social media

Podcasts[4]
Client support system

Food retailers present diversified types of ownership, from family-owned to institutional owners, and of management, from independent entrepreneurs to franchisees

Company	Ownership	Management
	It is part of *Sonae* which is owned by Azevedo Family and has five main shareholders[1]. *Sonae* has a diversified portfolio in the sectors of retail, financial services, technology, shopping centers and telecommunications. In Portugal, *Sonae MC* has several formats of food retailers, the hyper and supermarkets *Continente* and proximity stores *Meu Super*. It is also in the industry of beauty, health and well-being and it has coffee & stationery shops and shops for home & pets[2].	*Sonae MC* manages the several retailers excluding *Meu Super* which is a proximity store specially developed for the franchising format[3].
	It is part to *Jerónimo Martins* which is owned by Santos Family and has five main shareholders. In its portfolio it has food retailers (one in each country it operates), wholesaler, coffee shops, chocolate, health and beauty stores. In Portugal it is present in the first four[4].	In Portugal, *Jerónimo Martins* manages the several stores. However, following the concept of *Meu Super*, *Amanhecer*, is a franchising proximity store which is based on a cooperation agreement between *Recheio* (a cash and carry) and the owners of the store[5].
	The group *Mousquetaires* has companies in the food, home improvement and mobility sectors. In Portugal it has: *Intermarché*, which is a food retailer; *Bricomarché* with products of home improvement, gardening, decoration, construction and pet care and Roady car repair, car centers that provide maintenance and repair services as well as accessories and equipment for sale[1].	Groups directly managed by independent entrepreneurs (designated by the managers) fully responsible for the management of each store taking benefit from a set of common structures[2].
	The *Schwarz Group* is a family-owned retail group, present in the food retail industry, areas of food production and environmental services, covering the entire value chain. In Portugal, it has *LIDL* stores[3].	Directly managed by the group.
	In Portugal, the group has several supermarkets in the category of discounters called *Minipreço*[6]. *Minipreço* belongs to *DIA*, Distribuidora Internacional de Alimentação.	Each franchisee manages the stores that are under his management according to certain terms provided by the group. The president of the group considers that, as it is in four different countries, the local structure this model provides gives them an advantage[7].
	It belongs to *ELO Group*. The *Mulliez* Family owns about 97% of *ELO through Association Familiale Mulliez (AFM)*, while the remainder is owned by eligible employees. It has *Auchan*, 49,3% stake of *Oney Bank* and *Nhood*, a real state operator, which are complementary businesses[8].	Directly managed by the group.
	Aldi is owned by *Albrecht* Family. *Aldi* is divided into two branches , *Aldi South*, operating stores in southwest Germany, the US, UK, Australia and Eastern Europe, and *Aldi Nord* operating stores in the northern part of West Germany and western and southern Europe, both managed by a group[9].	*Aldi Nord* and *Sud* are composed by regional decentralized businesses[10].
	Mercadona is a family business created by *Cárnicas Roig Group*. It is present in Spain and started its internationalization process in 2019, entering in Portugal[11].	Directly managed by the group.

The food retail industry is influenced by a considerable number of regulators and other actors, where no significant lobbies were observed. Food retailers support organizations directly and not directly connected to their core business

Regulators[1] and Lobbies

AUTORIDADE DA CONCORRÊNCIA

Concorrência aplica multa recorde de 304 milhões a supermercados e fornecedores de bebidas por combinarem preços

European Commission

apa agência portuguesa de ambiente

DGC DIREÇÃO-GERAL DO CONSUMIDOR

ASAE Autoridade de Segurança Alimentar e Económica

The only relevant lobby observed in Portugal was when in September 2019, *Sonae* and *Jerónimo Martins* went against the Portuguese government due to the good reception made to *Mercadona*, claiming their importance for the Portuguese economy[2]. There was not found any other relevant lobby in Portugal related to the food retail industry.

Other actors

- **State:** tax obligations arising from the food retail chains' activity

- **Insurance Company:** track and manage all claims

- **Legal Services:** analyse legislation and assess its impact on operations

- **Town Hall:** organize the licensing process under the municipal licensing regime

DECO PRO TESTE

UGC UNIÃO GERAL DE CONSUMIDORES

aped Associação Portuguesa de Empresas de Distribuição

NGO's

Collection of food for associations to help the people in need[3]:

Bancoalimentar contra a fome Alimente esta ideia.

Cáritas Portuguesa

Too Good To Go

CRUZ VERMELHA PORTUGUESA

CASA Centro de Apoio ao Sem Abrigo

Support of other associations not directly connected to the food retail industry[4]:

Animalife A criar histórias felizes

European Recycling Platform

cuf

GREENPEACE

Creation of own foundations[5]:

FONDATION Auchan POUR LA JEUNESSE

FONDATION WEAVE OUR FUTURE

02

Contextual Environment

| Drivers of Change

A decreasing and aged population are the result of low fertility rate and an increase in life expectancy. This may result in a reduction in sales and a need to adapt to older generations' needs
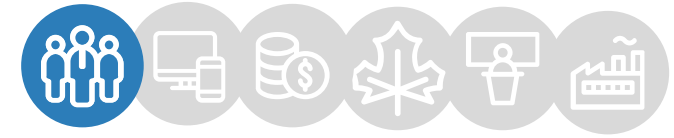
Decreasing population in Portugal

Considering Portuguese birth rates and mortality rates and excluding migration from the analysis due to its unpredictability, the **Portuguese population is expected to decrease** [1].

Even assuming an unlikely increase in the fecundity index, the number of deaths will continue to surpass the number of births, consequently, the Portuguese population might not achieve 10 million by 2030[1].

However, depending on the migratory balance, it might increase contrarily to its natural tendency.

A populational decrease might translate into a **decrease in demand and sales of the food retail industry.**

If the number of immigrants increases significantly, food retailers should consider adding new products to their portfolio to fulfil the demands of new customers, as well as, face new competition from new entrants. Therefore, immigration flows should be monitored carefully by food retail chains.

Aging population in Portugal

As previously explained, the Portuguese population is expected to decrease. Simultaneously, life expectancy is increasing and with low fertility rates, the portion of people aged 65 years or over in the country will continue to increase, resulting in an **aged population**[2].

An aged population has social and economic implications for the country explored. Additionally, older generations have different needs and preferences and, therefore, food retailers should adapt accordingly. As an example, an aged population introduces **limitations to the full implementation of technological solutions and online shopping.**

[Click for sources](#)

(Further data in Appendix 2.1)

Food retailers should satisfy the demand and preferences of different generations. Nevertheless, all generations desire convenience of the shopping experience

Increase of generational gap

Food retailers should be aware of the different generations of shoppers due to their different set of characteristics and attributes that influence shopping behaviours[1] and adapt accordingly. Below there is a description of the current five different generations of shoppers:[1]

- Gen Z shoppers use a **digital grocery list,** and they **averaged the most grocery shopping trips** each month across generations (4.5 trips/month).

- 60% of Millennial shoppers use **mobile apps for grocery coupons or discounts** and 48% said **they don't care which brand they buy**.

- 60% of Gen X buyers say they frequently **actively look for new products.**

- 82% of Boomer shoppers **are loyal to brands** and 93% are reported to be loyal to a retail chain store.

- Silent shoppers (ages 72+) **focus on value and price.** This generation is the one with the highest household grocery spending per person.

Food retailers must be able to incorporate digital technologies into their businesses to meet the demands of Gen Z and Millennials, have a wide range of products to meet the expectations of Gen X, maintain a high level of quality due to Boomers and invest in promotions to satisfy the expectations of Silent shoppers.

Increasing desire for convenience

Despite the different generations' preferences, all are changing their buying habits, **demanding quick and easy ways to do their grocery shopping**. When not buying online, shoppers have been switching to **more frequent shopping trips and chose smaller stores in convenient locations** (proximity stores)[2], preferably stores with an easy access from home and well-connected routes. Shoppers want to be able to buy **any product they want, in a close location, at any time they need it and also at a low price**[3].

The desire for convenience brought new concepts such as **click-and-collect** and **pick-up points**[4], that combine the benefits of online shopping and immediate access to the products bought. They can also still allow for the customer to hand-pick some of the product such as the fresh ones.

[Click for sources](#)

(Further data in Appendix 2.1)

An increase in homeworking and time availability may lead to an increase of online shopping. However, food retailers may use experience in-store to continue to attract shoppers to stores

Increasing time availability and homeworking

The COVID-19 pandemic and resulting lockdowns, created barriers to physical working, which required employers to adapt to the new situation.

Where it was possible, most employees began working remotely. Nowadays, employees prefer to have the option to work from home and avoid time waste commuting[1]. In future years, the proportion homeworking/work from the office is uncertain, however most likely, **homeworking will be present** for the jobs that allow it[2]. It **enables workers to have more time availability** and for them to be at home more frequently to receive home deliveries, which might increase online shopping. On the other hand, since people will be at home more often and will have more time availability, they might prefer to use grocery shopping as an "excuse" to leave the house. Due to these two opposite effects, **the impact of this trend in online shopping is uncertain**.

Transforming shopping in an experience

With an increase in online shopping, physical stores will need to provide **additional benefits and experiences** to continue to attract shoppers.

The quality of service and interaction with employees will need to be faultless, pleasing and helpful. As already done by some chains such as *Trader Joe's*, employees should **offer samples and present new products**[3]. Additionally, the shopping experience should be made easier. As an example, by limiting the number of each type of items on the shelf and providing recommendations and other customers' feedback on the product, the decision making process is simplified [3].

Examples of possible experiences would be cooking classes, wine tasting or thematic/cultural gastronomic events.

Click for sources

(Further data in Appendix 2.1)

With shoppers increased awareness of environmental and health topics, food retailers need to adapt offer to current demands. However, price sensitivity needs to be considered

Increasing awareness of climate changes

Shoppers want to know information about the products they are buying such as the **ingredients**, the **origin or processing of the food and its carbon footprint.** These factors will influence their purchasing decisions[1].

Food retailers should be able to provide these informations to the shoppers and provide products that comply with their demands.

Environmentally aware shoppers push for sustainable products, with reduced food footprints. Other concerns that emerge related to the reduction of CO_2 emissions are the reduction of food waste and an increase in recycling and redistribution of unsold products[2].

Increasing health awareness

Additionally to the awareness of negative climate impacts, shoppers are also **more aware of their health** and want better options when regards to the products they consume[3].

With an increase of digital health records and mobile apps registering customer's personal information, retailers may use it to differentiate from competitors, while ensuring data protection.

However for these two tendencies, **pricing** needs to be taken into consideration, as data is not conclusive on whether Portuguese consumers are willing to pay more for healthy and eco-friendly products.

[Click for sources](#)

(Further data in Appendix 2.1)

Shoppers value customization of offer, despite data privacy concerns. Customization may be used by food retailers as a strategy to increase shoppers' loyalty

Increasing customization

Nowadays, shoppers tend to have a greater role in terms of how, what and when they receive goods and services. This shifts the control from the manufacturers to the shoppers.

With an increase in demand for customization, retailers collect and process data available from their shoppers to **adapt their value proposition to each shopper' preferences**[1].

This means that, **through customization, companies are able to leverage their unique offering to the customer** while increasing online and in-store sales.

As an example of customization in food online services, retailers may present recommendations of products or even meal kits, where customers receive easy to prepare meal kits and recipe instructions, according to their preferences and previous purchases.

Decreasing loyalty

Loyalty levels to food retailers in Portugal are very low and there is no evidence that the loyalty will increase[2]. The Portuguese shopper **tends to shop in several food retailers**, looking for different products in different food chains and in an attempt to find the best promotions in all of them[2].

The food retail chains need to **rethink their loyalty programs** due to changes in shopper behaviour as a result of the digital revolution[3] .

A well-designed and well-executed loyalty program can help food retail chains to retain existing customers, attract new customers, and increase profits[4]. This loyalty will most likely be achieved based on honesty and transparency, developing the relationship between shoppers and companies[2].

[Click for sources](#)

(Further data in Appendix 2.1)

E-commerce has benefits in terms of efficiency and convenience and omnichannel strategy enables retailers to capture the advantages of both online and offline channels

Increasing e-commerce

Shoppers are expecting greater control over their purchasing experience. They are **demanding more shopping options** as well as efficiency, convenience and safety. For this reason, **e-commerce solutions are becoming increasingly important for food retailers** since customers can reach them using a website or app[1].

The downside of e-commerce is that some **people are sceptical** due to fraud in online payments, problems with the delivery and low control on the products quality[2].

However, fully online retailers are entering the Portuguese food retail industry. A specific example is *360hyper*, which is a fully online hypermarket created due to the pandemic that is raising its position in the industry[3]. Also, the operation of *Mercadão*, another fully online hypermarket grew more than 700% since its beginning[4].

Demand for an omnichannel experience

Omnichannel experiences are increasingly being integrated into food retail chains' strategies. The **combination of online and offline in a single purchase allows companies to retain the advantages of both channels**. It allows data collection from online interactions and improves the relationship between retailers and shoppers due to the human touch in the physical stores. The omnichannel strategy allows a natural involvement with the retailers since customers can choose the channel they prefer[5].

In the future, while the most visible changes in the food retailers will be related to customer-facing features, **digital tools will transform operations in less apparent ways**. New technologies will analyse purchasing patterns, automatically make online orders of the ingredients for specific recipes for home delivery or pick up in the physical store[6], among others. Despite the growth of online sales, physical stores will remain the largest and most important sales channel in the next few years. Therefore, **managing several channels will become the new standard for retailers**[7].

Click for sources

(Further data in Appendix 2.1)

Smart supply chains can forecast demand and smart fridges are able to make a real-time inventory of their content, create shopping lists and order groceries directly from the door

Increasing automation of supply chain

As the application of Advanced Intelligence increases, it is expected that by 2030 **smart supply chains will become standard.** They will be capable of **predicting demand while calculating and estimating the available supply**. This will directly impact the environment since current integrated systems result in high food waste due to poor predictions[1].

Furthermore, by 2030, the inventories will be based on **predictive models of shoppers' needs**, highlighting the importance of understanding their behaviour[2].

Furthermore, to make the supply chain more efficient and **reduce delivery times**, some retailers are **testing drone grocery delivery**. It is the case of Drone Express and Kroger that are implementing a pilot program as part of the retailer's strategy of providing customers with "anything, anytime, anywhere" [3].

Using bots to predict shopping lists

With technological advancements, bots will begin to perform **repetitive and non-rational tasks**[1]. Bots could calculate its owner's needs using the consumption rate, historical data and quantity leftover in a smart fridge or house shelf. As a result, **bots are expected to be responsible for making grocery orders by 2030**[4].

The Samsung smart fridge allows customers to see inside their fridge anywhere, **plan meals based on the available food, create shopping lists, order groceries from the door, and combine shopping carts from multiple stores**[5,6].

Moreover, the LG smart fridge can take a real-time inventory of its content, provide meal suggestions based on available ingredients and alert users when the products are running out[7].

If food retail chains have access to this valuable data source, they are able to predict customers' shopping lists and better manage their stocks and purchases.

Click for sources

(Further data in Appendix 2.1)

Electronic price tags and automatic payment through an app are examples of technological innovations that are being tested in physical stores to improve customer experience
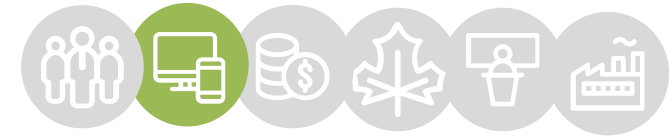
Introduction of digital technologies in-store

Shoppers desire an **effortless and not time-consuming experience** when they go to the grocery stores. Digital technologies can smooth and fasten the customer journey and solve several shoppers' pain points, such as incorrect prices, lack of product information, and out-of-stock products[1].

For example, **electronic price labels** guarantee consistency in the pricing among all channels and a unified omnichannel experience[2]. Additionally, retailers can incorporate **digital signage solutions** in their physical stores to provide more information on products' characteristics, special offers, cooking suggestions, and daily top-selling products[3]. Food retail chains can also use robots to scan shelves to guarantee all products are in stock[4].

Increasing innovations of payment methods

In the food retail industry, **payment is the customer journey step that creates more dissatisfaction due to the long queues[5]**. Nowadays, food retailers seek to provide the most convenient experience to their customers and, for this reason, are using technological developments to make this process quicker.

At *Pingo Doce & Go* **stores**, shoppers are already able to scan and pay for the products they will purchase through an app[6].

Another innovative example is *the Amazon Go* concept that allows for an even smoother process. After downloading the app and registering, buyers will be able to remove products from shelves, which will be automatically recorded in the online basket. After collecting all the necessary products, shoppers can leave the store without a checkout process since the payment is automatically deducted via smartphone[7]. A similar experience is being tested in Portugal, the *Continente Labs[8]*.

Click for sources

(Further data in Appendix 2.1)

Smart shelves and smart carts can improve the customer experience, and 5G will be able to empower technological advancements that are already being used by the retailers

Increasing use of sensors in food retailers' stores

Smart shelves and smart carts are two novelties that can be used in grocery stores to improve the shopper experience and better manage the stocks.

Smart shelves use dozens of weight sensors to **provide real-time inventory**, determine when a product is out of stock and **update prices based on demand**[1]. The food retail chains can receive alerts when the inventory of a specific product is low to **minimise out of stock situations** and consequently, **lost sales opportunities** and obtain warnings if products are incorrectly displayed. Additionally, smart shelves can **display effective and customisable product information, optimise store performance and increase customer satisfaction**[2].

Furthermore, **smart carts** are equipped with sensors and cameras, **allowing customers to scan the products they want to purchase**, track their total as they shop and **do the check out on their own**[3].

Implementation of 5G

Implementing **5G to an existing network architecture** can **power the new technologies** that many food retail chains are already using[4].

For example, 5G will allow for **greater interactions** between sales associates and customers since real-time data could be used to **develop customised advertisements** and recommendations based on individual customers' characteristics and preferences, therefore increasing the motivation to purchase[5].

The adoption of 5G will also **transform logistics** by **raising the efficiency and the fulfilment of orders and increasing transportation speed**[5].

The full capacity of 5G will also enable the **rollout of automation in transport and warehouses** because of improved processing of the massive volumes of data in real-time[5].

Click for sources

(Further data in Appendix 2.1)

Data analytics enables retail food chains to better understand their customer needs, therefore its use is valuable and is continuously increasing

Increasing use of data and analytics

Data is becoming increasingly valuable as businesses improve their ability to analyze and apply it. Technologies are continuously being developed and improved to allow for data collection and analysis. Data usage enables the retail food chains to understand their customer base better.

Furthermore, **effectively interpreting the customer's data can directly impact revenue generation**, as the retailers know where to focus their efforts and where to reduce costs[1].

However, the risks of sharing data started being spread, increasing people awareness. European Union is already legislating businesses regarding the protection and usage of data, and it may take a more severe position in the future[2].

Data Monetization

Nowadays, it is **increasingly valuable for companies to be able to have a broad range of available data** of their current customers to potentially maximize their value and to facilitate the acquisition of new customers.

In the food retail market, **data is progressively more valued as it allows for an optimization of the stores regarding inventories, placement of products and staffing, as well as to monitor competitors** (internal usage) and also use the data to **personalize offer to the buyers** and therefore increase revenues (external usage)[1].

Food retailers can also directly monetize their data by selling direct access to it to third parties, even though there are strict regulations regarding data protection[2].

Click for sources

(Further data in Appendix 2.1)

Economic recovery post-pandemic and private consumption evolution might positively impact sales volume. On the side of workers, their needs are changing so employers should adapt to avoid shortages

Economic and private consumption growth

COVID-19 pandemic had significant impact in world's economy as well as the Portuguese economy. The government measures were restrictive, resulting in a **contraction of private consumption[1].**

Unemployment rate was also impacted increasing to 7,2% of the Portuguese active population, moving on the opposite direction of the previous years trend of reduction of the unemployment rate[2].

The economy is expected to start recovering and private consumption should increase again, however predictions cannot be made with certainty[3&4].

Labor shortage

Many national organizations have a **talent shortage. Employers must know how to adapt to workers' new needs and desires** and build a relevant proposal linked with the candidates' values to **attract and retain the best personnel[5].**

With the pandemic, the labor shortage is worsening, as **many employees have changed their careers or left the country[6].**

Some industries believe that there are enough people to work, but they are demanding higher salaries[6]. For this reason, the scarcity of the workforce can translate into a **rise in the wages of food retailers' workers** as a way of retaining them in the company, resulting in **higher expenses for food retail chains**.

[Click for sources](#)

(Further data in Appendix 2.1)

It is expected that Portugal experiences downtrading and that the shoppers buy more private-label products but the suppliers network is still globalized

Increasing polarization of demand

The **economic effects of the pandemic have resulted in shoppers polarization**, with some trading up to buy more expensive products and others trading down to cheaper ones[1].

While all countries experience both uptrading and downtrading, the level of both varies by country, with some showing higher signals of trading up (for example, Germany, the Netherlands, and the United Kingdom), while **others show a strong trend toward trading down** (for example, France, **Portugal**, and Sweden)[1].

As would be expected, countries experiencing more downtrading often observed an **increase in the purchase of private-label products**[1].

As a result of the continued economic crisis, it is expected aggravation of both downtrading and uptrading in 2021[1].

Globalization of suppliers

Due to the increasing internationalization of markets led by the adoption of liberal economic policies and changes in education, the **effects of globalization are more present now than ever before**[2].

Goods, technologies, people and ideas are constantly circulating having an impact in all industries, including food retail. A result of this is the increasing speed with which new technologies surge in the U.S., for example, and that are then copied or improved in European economies.

One very important consequence of the globalization, is that economies are more competitive and interdependent. In the case of the food retail industry, it allows for more variety and a higher choice.

Click for sources

(Further data in Appendix 2.1)

People are increasing awareness towards resources scarcity and food retailers are taking advantage of it by implementing initiatives that reduce costs and improve brand image

Decreasing food waste

Currently, sustainability is one important concern of customers. Food waste is associated with several issues such as the burden of food production on land and water resources, and supermarkets are taking advantage of this concern to increase its profits. In order to reduce food waste and its costs for the society and retailers, several initiatives are already being implemented and the tendency is the development of more and innovative solutions to deal with this issue[1].

By decreasing the values of food waste, it highly impacts retailers' P&L, more specifically, in the inventories, as it allows for a more accurate value to match customer's demand, which is an important component that weighs in the bottom-line values associated to profitability such as EBITDA. Furthermore, these initiatives improve brand image, attracting the more environmentally concerned customers and, consequently, increasing revenues.

Currently, **Portuguese food retailers already have efficient solutions in place like partnerships with NGO's and discounts in products close to the expiration date.**

Resources scarcity

As the world's population continues to grow, there is **increased demand for and pressure to conserve natural resources** that have significant implications for poverty, inequality, demographics and public health[1]. In the food industry, **scarcity of natural resources** and occurrences such as water shortages and energy inefficiencies lead to prices of key resources to increase and/or be more volatile[2]. Food and drink manufacturers are exposed to these, imposing a threat to food retailers' margins and products' availability to the final customer. **Resources scarcity and natural resources management increase the necessity to redesign value chains and reduce resources use**, prioritizing essential goods and increasing efficiency of their usage.

In Portugal, water scarcity is the more evident concern where the agricultural sector is responsible for 75% of the total water used[3]. Knowing the country has dry seasons and the possibility of droughts, there is the need for improving the efficiency of the usage of this resource.

Click for sources

(Further data in Appendix 2.1)

GHG emissions and plastic pollutions and current concerns of consumer, regulators and food retailers so, strategies to reduce climate changes and pollution need to be a priority

Growth of climate change impacts

As **climate change continues, natural disasters and abnormal weather patterns will increasingly have effects** on our socioeconomics, demographics, crop production, food security, migration and political landscape in unprecedented ways.

The **need for innovation in food retail is increasing**, fuelled by climate change and natural calamities. Global warming and rising sea levels are examples of the impact of the current climate changes that cannot longer be ignored. Efforts need to be made to reduce Greenhouse Gas (GHG) emissions and products' carbon footprints[1].

It is key for food retailers **to adapt their processes and improve their sustainability.** This will bring several benefits: reduce operating costs in the short-term; improve business viability in the face of shifting regulations, markets, and climates; and has a positive long-term impact on climate change[2].

Fighting against plastic pollution

Additional to climate changes, customers are more aware of the negative impacts of plastic pollution, mainly single-use plastic. Alternatives for **packaging and transportation** of products are being developed to achieve **plastic-free grocery shopping**.

Food retailers have power to address pollution from single-use plastics. Actions such as removing "pointless packaging", adding refill stations and selling in bulk with re-usable containers are examples of where to start[3]. Strategies are already being implemented and studied by these companies in order to **eliminate single-use plastic and substitute plastic by alternative materials**.

Nevertheless, **consumerism and convenience** drive demand for plastic[3] and an obvious replacement for single-use plastics has not emerged yet, as other materials such as glass and metal also have life cycle impacts. This might delay the efforts against plastic pollution.

[Click for sources](#)

(Further data in Appendix 2.1)

The number of regulations is expected to grow due to increased awareness of health and sustainability and the existence of fiscal deficit. One possible measure is banning single-use plastic

Regulatory landscape

Growing willingness to intervene to **promote public health and mitigate adverse societal impacts,** as well as the **desire to reduce the negative environmental impact of industry,** are **encouraging governments to consider increasingly aggressive approaches to the regulation of various categories of goods.** Besides, unprecedented fiscal deficits are forcing many governments to explore and implement new revenue-generating initiatives – providing further incentive to raise product taxes[1].

The **food retail industry** is facing new regulatory issues related to consumer trends, industry trends and regulatory amendments. For example, producers will need to meet new labelling requirements. In terms of stores' operations, online sales and home delivery services represent new legal concerns for food retailers. From privacy concerns, about storing online order details, to temperature controls in delivery, food retailers need to stay-up-to-date on how regulations apply[2].

Banning single–use plastic

Single-use plastic products (SUPs) are items that are used once or for a brief period of time before being thrown away. The environmental and health consequences of this plastic waste are global and can be severe. SUPs products are more likely to end up in our seas than reusable options[3].

SUPs were banned in Portugal with the implementation of a European directive on 1 July 2021[4].

Food retailers are committed to progressive plastic waste elimination, for example, by replacing plastic straws with paper straws and selling reusable bags for vegetables and fruits[5].

[Click for sources](#)

(Further data in Appendix 2.1)

Regulations are being made related to health and sustainability, including themes such as storage, transparency and the use of certain ingredients
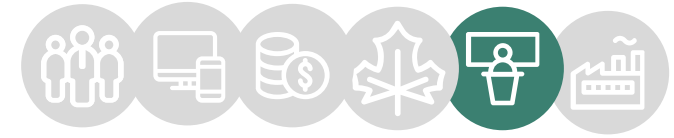
Increasing regulations of products' storage

Traditional refrigerants, including the most common ones hydrofluorocarbons (HFCs) are known for decades as contributing for thousands of times more **greenhouse gas emissions** than carbon dioxide. Nowadays regulations are being made aimed at eliminating HFCs. **Food retailers must start acting now in order to develop a strategy to gradually phase out this refrigerants**. A good substitution to reduce the carbon footprint of refrigeration systems would be to natural refrigerants such as ammonia and carbon dioxide[1].

The retail group *ALDI Sud* has converted to a more efficient and less polluting system, the transcritical refrigeration systems in 1,496 stores across Europe, the U.S. and Australia, providing a roadmap for the rest of the industry to follow suit[1].

Increasing regulations of products

The awareness of the importance of food for a healthy life is increasing and **governments are also moving towards implementing healthier eating habits.**

As a result, in Portugal, in 2009, it was published a law limiting the salt quantity in bread for the maximum 1,4 g of salt per 100 g of bread[2]. Adding, in 2016, another related regulation took place which requires the majority of pre-packed food to have nutrition information such as the energy value and amount of fats, sugars, saturates, carbohydrate, protein and salt presence[3]. Also, recently it was forbidden the sale of products with high levels of fat in schools[4].

In this sense, **in the future, it is expected that some new regulations related to healthy habits will appear and food retailers will have to adapt** their offer and the information that they dispose.

Click for sources

(Further data in Appendix 2.1)

With the rise of cryptocurrencies and new players with payment solutions, adaptations will have to be done in order for banks not to lose the economic control and to secure data privacy

Increasing regulations of payments

With the rise of many digital currencies and new players entering with payment services, foreign states and central banks are at risk of loosing control of the financial flows of their economies. But more disturbing than this is the fact that, with these new systems, they can lose the ability to influence the economy through monetary policies.

In order to respond to this forces, **many changes will tend to happen including nation-states launching their own digital currencies to retain control of economic policy and regulators policing payments processes rather than providers**[1].

Increasing regulations of data privacy

Data is nowadays the most valuable asset for businesses to personalize their offer, so they are increasingly developing systems to track and properly use the data they receive from their clients. However, due to the individual right to privacy, with the development of technology, **EU has been recognizing modern protections**[2].

In the future it is very likely that, besides personalizing adds with the use of data, offers, services and also payments will be personalized. Data will have several utilities, from combatting fraud to develop sophisticated financial plans for customers. This will **require more regulation and it will be crucial to stablish greater international agreement and consistency on data protection and privacy laws**[3].

Debates will need to be done covering questions such as "what standards should apply on a global scale, who should control data and how the rules will be enforced" [3].

[Click for sources](#)

(Further data in Appendix 2.1)

Food retailers can complement the shopping experience in store if they improve takeaway meals and offer a dining space. The supply chain is more complex due to customer's preferences

Combining shopping and eating

In reply to the increasing demand for convenience and customers not wanting to cook at home, grocery stores have not only extended their selection of ready-made meals and prepared foods, but also **including full-service restaurants offering 'in-store dinning' before or after doing grocery shopping** [1,2].

The next step would be for food retailers to raise their offering and quality in order to **compete with restaurants** when it comes to choosing where to dine. Further experiences could be offered such as choosing the ingredients that will be used to cook your meal, suggestions of recipes and list of ingredients that would be required to replicate the meal at home. Hiring local chefs to develop the menu may be another way to increase customer benefits[3].

Evolving supply chain

Nowadays, the diversity of **customer's tastes and preferences is increasing the level of complexity of the supply chain**[4]. The shoppers that once went to the physical store, are becoming **more disperse throughout the supply chain**.

New delivery and pick-up options are available and new interactions are possible across the different actors of the supply chain. Shoppers no longer need to go to physical stores to do their groceries as they can order online and receive them at home or collect them in a pick-up point (**Click&Collect**).

Adding, suppliers can now **sell directly to shoppers**, which was facilitated by the appearance of new companies such as *Glovo* and *Getir*[5].

Click for sources

(Further data in Appendix 2.1)

Brands may be at risk if smart technology is responsible for the grocery shopping. D2C allows better customization of product offerings and cost savings by eliminating the need for intermediaries

Disintermediation of brands

With Alexa (Amazon's operating system), shoppers can already do their grocery shopping by voice command. When customers not only buy online, but also are not exposed to different **marketing strategies** such as different packaging, brand equity, promotions or shelf space, these strategies become **obsolete**. This should be seen as **threat to brands and food retailers** that will have to consider additional strategies to attract shoppers. With voice command shopping, it is needed that shoppers recognise the different brands, but also to recall and actively instruct for that brand[1].

When Alexa, other voice-based personal assistant or even a piece of smart home technology (such as a smart fridge) is instructed to add eggs to the shopping list or reorder cereals, it will use previous collected data on their customer preferences on price, brand, size and **others eliminating food retailers access to the customer.**

Increase of Direct to Consumer (D2C)

The economy is always changing, and established business models are giving way to new ones. For rapid response and cost optimization, the Business to Business (B2B) and Business to Consumer (B2C) models are being expanded to Direct to Consumer (D2C) models. **Producers take up the role of distributors themselves, eliminating the need for an intermediary**[2]. **D2C also puts the company closer to its target audience**, allowing for better customisation in product offerings, greater customer awareness, and cost savings[2].

This strategy is used by small retailers as well as large corporations such as *Sumol+Compal*, which has invested in its own e-commerce platform *Saborista.pt*, with direct sales of its products. The *Bom Petisco* online store is another example, which was recently born with the offer of several baskets of products created to meet all tastes and needs at a more competitive price. *Riberalves also* already makes home deliveries in its own vans in the Lisbon region[2].

Click for sources

(Further data in Appendix 2.1)

The rivalry among food retail chains will increase due to lack of loyalty and high bargaining power of customers. This increase represents a threat to profitability rates of retailers

High competitive pressure

The president of *Centromarca* believes that **a price war can happen among the food retailers** due to the pandemic crisis and economic crisis[1].

Shoppers are becoming less loyal and purchasing from a variety of food retail chains due to their great bargaining power. Customers can switch from one competitor to another because the **product prices are easily compared** and there are **numerous substitute products.** Adding to the above, the barriers to exit the market that exist are high due to illiquid equipment and property owned by the chains. It is then possible to conclude that **the rivalry in this industry is high**.

Pressure on profitability

The food retail industry is characterized by having **low margins and high volumes**[2]. Consequently, a reduction in volumes may have a high impact on the bottom-line.

Additionally, some suppliers have high power over the food retailers and the margins that they can practice on their products[2].

Furthermore, there are regulators in this industry that do not allow for collusion or price wars between food retailers.

Also, the fact that Portuguese shoppers always look for promotions to buy certain products, creates higher pressure for food retailers to keep offering these promotions and additional discounts in loyalty programs[2].

For these reasons, profits may be volatile and highly dependent on volumes and external factors that are difficult for food retailers to control.

[Click for sources](#)

(Further data in Appendix 2.1)

Vertical integration

In the food retail industry, **vertical integration has been accelerating**. Vertical integration in this industry is common throughout the years, as most grocers have some kind of private-label business operating, usually with established third-party manufacturing. More recently, most companies have constrained their vertical integration efforts to some categories or in some steps of the value chain[1].

The main reason for vertical integration involves around (i) controlling costs along the entire supply chain; (ii) increasing transparency across the supply chain; (iii) holistically manage and produce key product categories[1].

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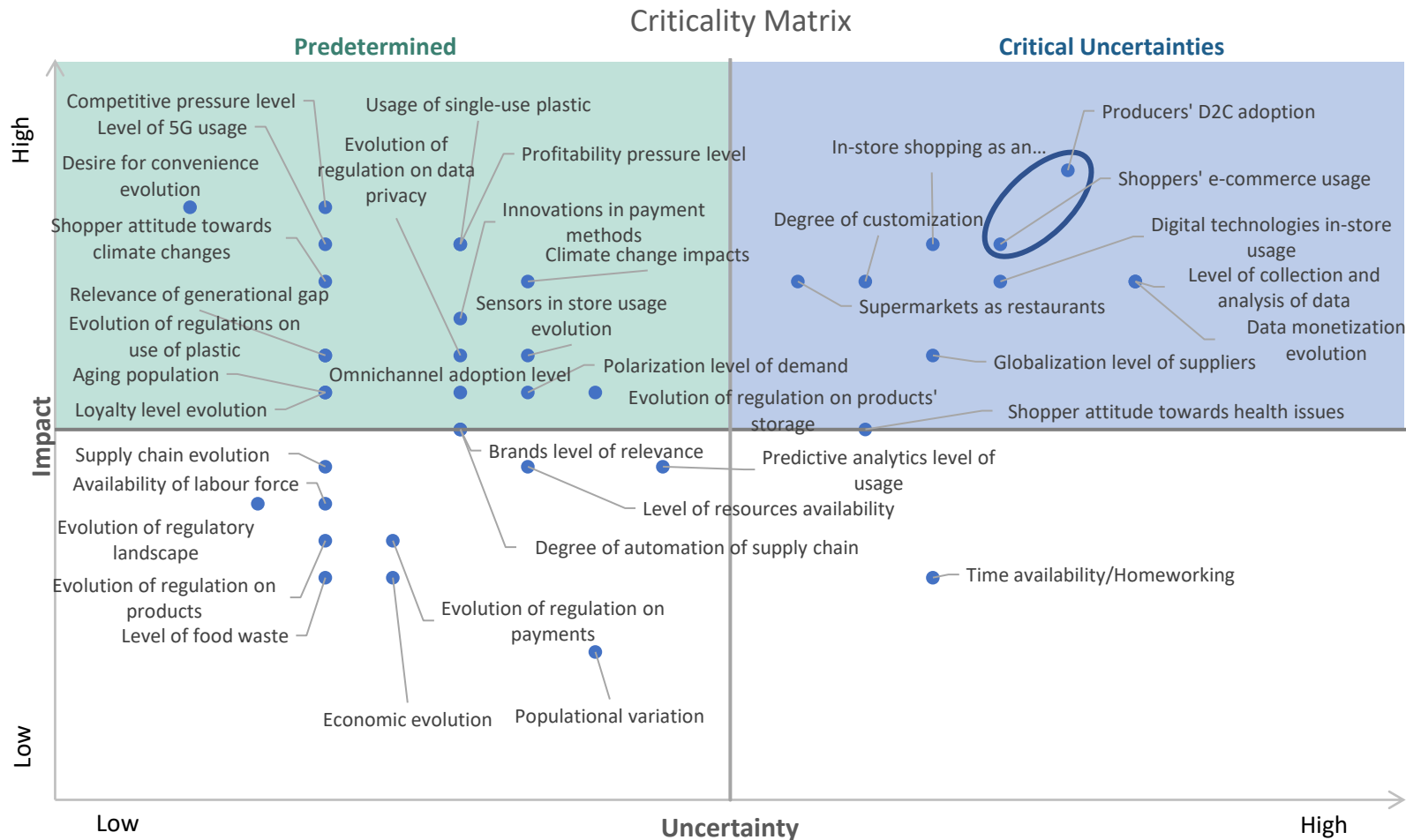
(Further data in Appendix 2.1)

03

Pre-Determined & Uncertainties

| Criticality Matrix

Using a Criticality Matrix, the pre-determined and critical uncertainties were identified from the drivers of change

Criticality Matrix

Predetermined | **Critical Uncertainties**

○ Critical uncertainties to be used as axes of the scenarios

When considering the several combinations of critical uncertainties these where the ones that elicit the most relevant narrative. The axes and extremes will be explained in the following slides.

Predetermined quadrant labels (High Impact):
- Competitive pressure level
- Level of 5G usage
- Desire for convenience evolution
- Shopper attitude towards climate changes
- Relevance of generational gap
- Evolution of regulations on use of plastic
- Aging population
- Loyalty level evolution
- Usage of single-use plastic
- Evolution of regulation on data privacy
- Profitability pressure level
- Innovations in payment methods
- Climate change impacts
- Sensors in store usage evolution
- Omnichannel adoption level
- Polarization level of demand
- Evolution of regulation on products' storage

Critical Uncertainties quadrant (High Impact):
- Producers' D2C adoption
- In-store shopping as an...
- Shoppers' e-commerce usage
- Degree of customization
- Digital technologies in-store usage
- Supermarkets as restaurants
- Level of collection and analysis of data
- Data monetization evolution
- Globalization level of suppliers
- Shopper attitude towards health issues

Low Impact (left):
- Supply chain evolution
- Availability of labour force
- Evolution of regulatory landscape
- Evolution of regulation on products
- Level of food waste
- Brands level of relevance
- Level of resources availability
- Degree of automation of supply chain
- Evolution of regulation on payments
- Economic evolution
- Populational variation

Low Impact (right):
- Predictive analytics level of usage
- Time availability/Homeworking

Axis labels: **Impact** (vertical, Low to High), **Uncertainty** (horizontal, Low to High)

Note: The numerical value attributed to each megatrend was assessed considering the criteria presented below and in comparison with each other, in order to ensure coherence in the scale used.
Criteria used to evaluate uncertainty level: a) Clear and plausible distinct directions for the trend in the considered time horizon; b) Plausibility of different velocities at which the trend develops in the considered time horizon.
Criteria used to evaluate impact level: Relevance/Proportion of variation on one or more of the following: business model, balance sheet, net income, market power.
Justifications on the classifications of the uncertainties can be found in Appendix 3 .1., as well the continuum and extremes of each of the critical uncertainties not chosen for the scenarios.

E-commerce grew significantly during the lockdowns but declined after that. Besides, while new 100% online players are joining the Portuguese market, investments in physical stores are also increasing

| Low increase in e-commerce usage | Shoppers' E-commerce usage | High increase in e-commerce usage |

Low increase in e-commerce usage

In 2020, due to the lockdowns, there was a growth of around 50% in online sales of food products, compared to fewer than 10% in 2019. However, this growth was lower than the European average, and, after the lockdowns, the percentage of online food retail sales immediately decreased to the level before them. Despite evidence of the expansion of online e-commerce, physical stores are not expected to disappear. Contrary to the general trend in the real estate market, investments in physical food retail areas increased in 2020 due to investors' trust and confidence in the sector's resilience[1].

According to Luís Moutinho, CEO of *Continente*, e-commerce in Portugal is expected to increase at a 20% annual pace, starting from a low base, which leads to relatively small increases in e-commerce. However, it is uncertain whether customer preferences would change the growth rate to a greater one[2].

Besides, physical stores remain an essential element of the shopping experience. According to Euromonitor International (2021), 76% of groceries will be purchased in physical stores in 2025, which will decrease from 81% in 2020[3].

High increase in e-commerce usage

Before the pandemic, many food retail chains recognized online channels as a potential source of growth, but they were slow to adapt. Currently, companies understand that e-commerce is the new imperative. Retailers are diversifying their online offerings in order to satisfy customer expectations and improve their experience. However, gaining market share in the online channel while maintaining a profitable business model is a challenge for many food retail chains[4].

Online retail provides a new window of opportunity for both existing businesses and those who are just getting started. New 100% online players are entering the Portuguese market. It is the case of *Blok* and *Gorillas*, two new entrants in the retail food market that do not have physical stores. They operate from dark stores where they maintain all the products they advertise in stock[5]. Another hypermarket entirely online that is already on the market is 360 hyper[6].

Although shoppers prefer to select products in person and receive them promptly after purchase, e-commerce has several advantages, including enhanced convenience

Disadvantages of E-commerce usage[1]

Shoppers

- Shoppers prefer to see, smell and touch the products before purchasing them. This is particularly important for fresh products like fruit, vegetables, fish and meat because when buying online, customers will not be able to control the quality of the products sent home.
- The delivery time of online orders can be a concern. If food retailers take too long to deliver the order, the perishable products may not arrive in perfect conditions to people's homes, and some products may no longer be needed. This problem does not occur in-store shopping since the customers receive their products immediately.
- There is a lack of human touch that can enhance customer experience and strengthen the retailer-shopper relationship.
- Online grocery stores already provide alternatives for out-of-stock products but not for all items, and the substitute chosen may not satisfy the customer criteria.

Food retailers

- The cost and complexity of logistics make it difficult for online grocers to provide the freshness that customers expect. Food retailers have to deliver orders fast while maintaining the quality of easily damaged products.
- To avoid crashes, the website and app must be continually updated.
- Online transactions are typically conducted using a debit card, a credit card, or internet banking. The website operators need to protect the card details by investing heavily in cyber security.

Advantages of E-commerce usage[2]

Shoppers

- Online grocery shopping is a faster purchasing process than going to a physical store. Shoppers may avoid the stress of crowds and parking lines and, consequently, they may save travel time and money.
- Customers can shop from the convenience of their own homes.
- Shoppers can apply filters to compare products and prices and access more information such as product reviews.
- Shoppers can also purchase by historic, in other words, they use their previous purchases to make repeat shopping.
- The websites and app can remember payment information.
- Orders can be placed 24 hours a day, 365 days a year.
- Shoppers can buy in bulk because they do not have to transport the groceries. Despite having to be at home to receive the orders, with an increase in home working, this may no longer be a constraint.

Food retailers

- Food retailers may easily gather customer data through e-commerce and use that data to tailor the customer experience with product recommendations and exclusive advertising and promotions.
- E-commerce allows for more cross-selling opportunities, which may raise the average order basket.

Source: Distribuição Hoje[3]
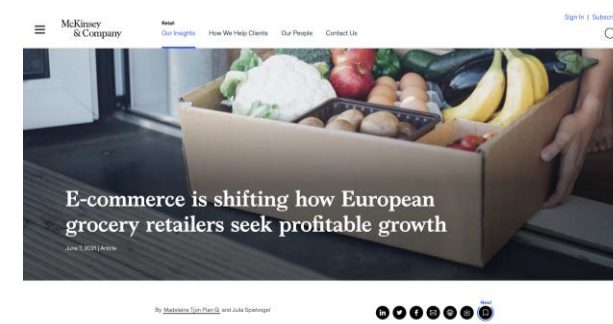
Source: McKinsey[4]

The D2C has been increasing as renowned brands look to create a channel to directly interact with shoppers. However, for these companies, competition is increasing, threatening the longevity of the channel

High D2C adoption

Producer's D2C Adoption

Low D2C adoption

High D2C adoption

The Direct to Consumer (D2C) market, in which shoppers get to directly buy the products from the brand, is growing in popularity. According to *Statista*, in 2021, the **D2C e-commerce sales in the US** surpassed $129,31 billion and are **expected to reach $174,98 billion by 2023**[1]. With the rise of e-commerce across multiple industries, brands sought to attract shoppers using a direct communication style, thus not having an intermediary that communicates with the end-consumer for them.

As an examples, recently, **renowned brands** like Heinz and PepsiCo **have opened new channels of communication** with their customers, where for the first time they have activated a direct relationship with them[2]. Another example of one of the first major companies to implement D2C was *Procter & Gamble* that, in 2016, launched an online D2C subscription business for its *Tide Pods* products[3].

Adding to the above, during the COVID-19 pandemic, the online consuming habits of shoppers have changed. This shift is noticeable due to the channels that they are using to buy their products. With this situation, brands are seeing a considerable positive return on D2C and online channels.

Low D2C adoption

Due to the **COVID-19 lockdown**, many **bricks and mortar retail stores were affected**, thus **D2C purchases served as a substitute**, since many shoppers could not get to physical stores. However, with the lifting of the lockdown, **traditional retail has been regaining market share**[4].

Additionally, in the long-run, brands that establish themselves as a D2C brand, will most likely **deteriorate relationships with retailers**, resulting potentially in **losing shopper exposure**[4]. Not only that, according to a report by EY, many brands, when turning to D2C, fail to apply the correct strategy. The situation presented is that companies approach the D2C strategy as focusing it as a channel. This means that, many times brands fail **to replicate the experience of a physical store while online** and that is what the shopper wants. Thus, leading to the unprofitability of the platform[5].

Finally, with the recent rise of D2C, **competition is increasing**, thus imposing a **challenge in the longevity** of this sales channel as the market saturates[6].

D2C channels can lead to cannibalization of channels; however, it eliminates barriers between brand and shoppers. For shoppers, ordering from different platforms implies the need to manage multiple delivery-times, however it can introduce them new products

Disadvantages of D2C adoption[1]:

Companies

- A narrow and limiting approach to D2C can lead to cannibalization of channels, leading the different channels to instead of cooperating and leveraging each other, they would be taking shoppers from one channel, increasing competition;
- The complexity of supply chain management increases, with D2C. In this case, companies would be required to handle the responsibility of delivering the customer's products. This adds constraints to the supply chain and has incremental risks for the company.
- D2C and online channels are increasingly becoming a more competitive landscape. With this, creating exposure is more costly and limiting, due to the presence of multiple players.

Shoppers

- With the potential increase in the number of companies offering D2C, shoppers will have more options, thus reducing the average basket size but increasing the frequency of purchases. Therefore, most likely ordering from different platforms will result in the deliveries arriving at different time periods.

Advantages of D2C adoption[1]:

Companies

- The major success seen by D2C *startups* has inspired traditional brands to add this model to their own business strategies. The power, oversight and insight that comes with selling directly to consumers provide incentives for them to do this;
- With D2C sales, there is no barrier between brands and the end consumer. This gives the company full control over their content;
- Every image can be displayed exactly as described in the brand's guidelines and each product description can feature an on-brand tone of voice;
- The company does not have to follow the rules of a third-party retailer; thus, it is free to experiment and innovate in any way it wants;
- The ability to build relationships and communicate directly with shoppers is improved and the message being communicated can be more personalized.

Shoppers

- When comparing to buying products in a physical store, shoppers can have a more personalized shopping experience through D2C channels;
- Many times, companies are able to offer exclusive products and promotions in their own platforms, therefore, customers can purchase unique products not available at the physical stores.

Source: Procter & Gamble D2C platform
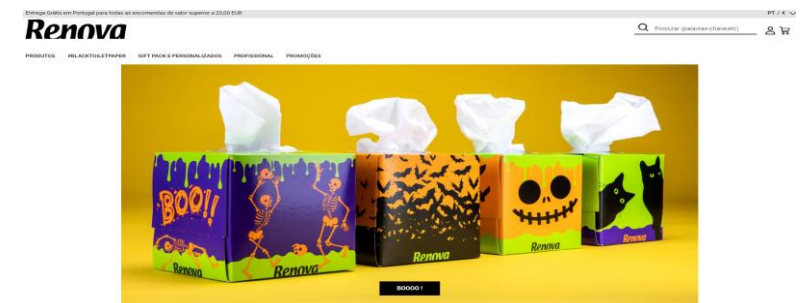
Source: Renova D2C platform

The percentage of sales through e-commerce channel was the main KPI chosen to monitor the evolution of the *'Shoppers' E-commerce usage'* axis and enable companies to validate the velocity and direction of its occurrence

KPI Explanation:

In order to assess the evolution of e-commerce, the KPI **'Sales E-commerce/Total Sales (%)'** should be analysed. Depending on the evolution of the percentage of sales through e-commerce throughout the time period considered, the companies will be able to validate the velocity and direction of the axis.

Additionally to this KPI, the **'frequency of purchases'** and **'number of purchases though E-commerce over total number of purchases'** should also be monitored to conclude on the sizes of each baskets in each channel and infer if sales through e-commerce are increasing in number or only in value due to the purchase of more expensive products and not more volume.

To collect these KPIs, **potential sources** would be the companies' **internal data and databases**.

Extremes Explanation: 15% Sales E-commerce/Total Sales 25%

Historical data available:

In 2019, e-commerce in Portugal represented 2% of sales[1]. In 2020, it increased to the triple, but mainly due to COVID-19 restrictions. In 2021, it returned to the pre-pandemic value, with an expected growth rate of 20% annually, according to industry experts.

Extremes and mid-point:
1. This 20% growth was the one used to estimate the KPI value for scenarios where e-commerce would be **lower**.
2. For the **axis mid-point**, the 23% CAGR expected for e-commerce in European markets[2] was used.
3. For the scenario where e-commerce level would be **higher** and companies should adjust accordingly, a CAGR of 25% was used, assuming the shoppers' preferences would change and the growth rate would be higher than the 23% expected, without losing plausibility or inflating the value disproportionately.

Using these growth rates, the **estimated values for the KPI** in the extremes and mid-point would be **15%, 20% and 25%,** respectively.

KPIs Scorecard

Note: This Scorecard is a suggestion. (The data used is based on assumptions, but may not be representative of reality)

E-commerce
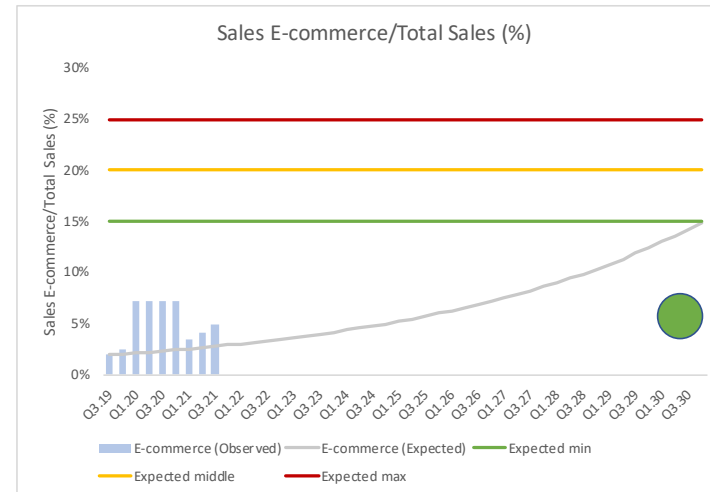
Sales E-commerce/Total Sales (%)

| Frequency of the report |
| Quarterly |

| Last Updated: |
| Q3.2021 |

Source: Own elaboration

- 🟢 According to expected
- 🟡 Below expected
- 🔴 Above the expected

Graph Explanation:

Using this suggested graph, the food retailers would register and analyse the evolution of the percentage of sales through e-commerce over their total sales.

This graph enables the company to evaluate if the e-commerce growth rate is increasing as expected, stable or if it is growing above the expected.

This way the food retailers are able to validate the velocity and direction of the e-commerce, and act accordingly before the ideal timeframe to act is lost.

The percentage of lost retail sales and number of companies doing D2C were the main KPIs chosen to monitor the evolution of the *'Producers' D2C Adoption'* axis and enable companies to validate its velocity and direction

KPI Explanation:

In order to assess the evolution of producers' D2C adoption, the KPIs **'Number of companies doing D2C'** and **'Lost Retail Sales (%)'** should be analysed. Depending on the evolution of the number of companies and lost sales throughout the time period considered, the companies will be able to validate the velocity and direction of the axis.

Companies should start by identifying in their country, which companies are already doing D2C successfully and monitor the evolution of number of companies doing it and register which ones. More important than that, companies should monitor their sales for the products of those companies to obtain the percentual lost sales due to D2C.

To collect these KPIs, **potential sources** would be external news and other companies' D2C websites to collect information on companies doing or considering D2C & Companies' internal data and databases for the lost sales.

Extremes Explanation:

| 4% | Lost Sales (%) | 14% |

Historical data available:

Since D2C is still recent, historic data and evolution predictions are difficult to collect. As it was not possible to obtain data on this trend, the values and its growth rates were estimated using an educated guess in order to obtain plausible evolutions for the extremes and mid-point.

Extremes and mid-point:

Currently, it was considered that sales lost are not significant and, therefore, assumed to be 0,5% sales lost due to D2C.
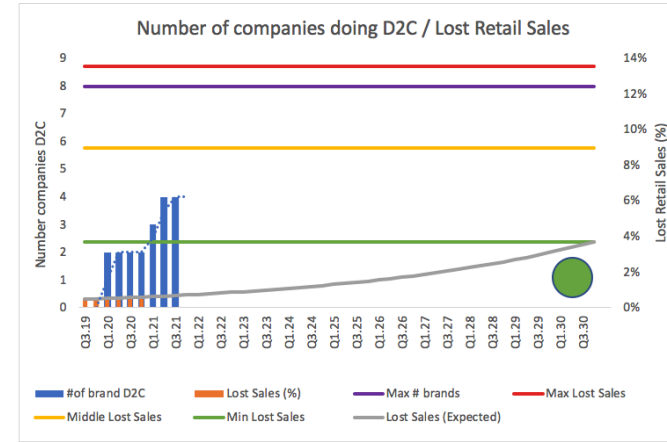
With a CAGR of 20%, 30% and 35%, the KPI would be at:

1. a level of 4% of sales lost in scenarios where D2C would be **low**
2. an average of 9% for the **mid-point**
3. and of 14% in scenarios where D2C is **high**.

KPIs Scorecard

Note: This Scorecard is a suggestion. (The data used is based on assumptions, but may not be representative of reality)

D2C

Number of companies doing D2C / Lost Retail Sales

Legend: #of brand D2C — Lost Sales (%) — Max # brands — Max Lost Sales — Middle Lost Sales — Min Lost Sales — Lost Sales (Expected)
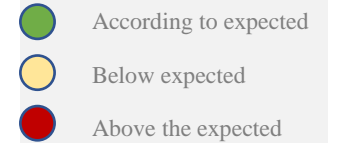
Which ones?	Q1.20	Q2.20	Q3.20	Q4.20	Q1.21
Company names	Sumol+Compal; Renova	Sumol+Compal; Renova	Sumol+Compal; Renova	Sumol+Compal; Renova	Sumol+Compal; Renova; Bom Pestisco;

Frequency of the report
Quarterly

Last Updated:
Q3.2021

Source: Own elaboration

- According to expected (green)
- Below expected (yellow)
- Above the expected (red)

Graph and Table Explanation:

Using these suggested graph and table, the food retailers would register and analyse the evolution of the number of companies doing D2C and which ones, and, according to those companies, register the variation of the sales of the respective products, to understand the significance of lost sales.

This graph enables the company to evaluate if the D2C is increasing as expected, stable or if it is growing above the expected.

This way the food retailers are able to validate the velocity and direction of D2C, and act accordingly before the ideal timeframe to act is lost.

04

Scenarios

| **Scenarios Narratives, Customer Journeys & Implications**

After choosing the most critical uncertainties and their extremes, the scenarios were named and created

High D2C adoption

The fight is on

Multiple tabs open

Low increase in e-commerce usage

Shoppers'

Producer's D2C adoption

E-commerce usage

High increase in e-commerce usage

In-store shopping is king

Few clicks away

Low D2C adoption

Note: When considering the several combinations of critical uncertainties the ones that elicit the most relevant narratives are a) Shoppers' *E-commerce usage* and b) *Producers' D2C adoption*.

After choosing the most critical uncertainties and their extremes, the scenarios were named and created

The fight is on

High D2C Adoption

Carlos values the freshness and quality of perishable products. As a result, he prefers to choose them in person and purchase them more frequently in a physical store near his home. He also appreciates going to a physical supermarket since he always has a unique and personalized experience in-store. The retail chains are constantly encouraging product discovery by hosting events of different themes and distributing new product samples. Also, the in-store experience is always smooth and fast since food retailers have invested in technologies such as Artificial Intelligence (e.g., self-checkout cashiers).
On the other hand, Carlos enjoys purchasing heavy products and items that can be bought in larger quantities, such as household cleaning products, personal care, laundry items, canned food and beverages, directly from the websites of the renowned brands and having them delivered to his home. When visiting the renowned brands' websites, Carlos has access to additional information and exclusive products and promotions not available in the food retailer's website and stores. However, he believes that purchasing products from several companies is time-consuming because he needs to visit multiple websites. Fortunately, various brands formed strategic alliances and created a joint website to mitigate this difficulty, but the problem was still not entirely resolved. It continues to be inconvenient since Carlos has to be at home to receive the different orders that arrive on different days and hours.

Multiple tabs open

When it comes to grocery shopping, Carlos has lots of variety. Besides the different food retailers available, there are also several renowned brands selling online, directly to the consumer.
Due to remote working being common and having a busy schedule, Carlos prefers to order his groceries online. When he visits the website of his favourite retail chain, his pre-made basket appears. This is based on Carlos' previous grocery purchases and preferences. Ever since companies started to invest in the customization options to facilitate online purchases, more shoppers like Carlos prefer ordering most of their products online and only going to the store to buy some perishable products.
However, Carlos does not only order from food retailers' website. Ever since the adaptation from many renowned brands to start selling online as well, directly to the consumer, Carlos has enjoyed going to the different websites and order his favourite brands' products. These brands usually offer promotion packages and exclusive product lines to attract shoppers online and to maintain brand awareness near online customers.
Today, Carlos ordered his monthly basket from his go-to retail chain and some new products that were suggested to him. With the latter, he checked the product reviews available from other shoppers. Additionally, he ordered from *P&G's* and *Unilever's* platforms for house supplies that he needed to complete his monthly shopping list. Moreover, he decided to make a last minute purchase at *PepsiCo's & Mondelez International* joint platform for drinks and snacks. Later in the week, Carlos is going to the grocery store to buy vegetables and fresh fish.

Low increase in e-commerce usage ← **Shoppers' E-commerce usage** → High increase in e-commerce usage

Producer's D2C adoption

In-store shopping is king

Carlos prefers to do his grocery shopping in a physical store to have his products available immediately and to have the possibility to hand-pick his fresh products. Carlos rarely does his groceries online, therefore, food retailers did not invest in their website and products delivery having it just as a "nice to have" and preferring to attract customers to the stores by hosting thematic events, focusing mainly on proximity stores, adapting the products assortment to the customers of each location and by improving customer service. Automations in the supply chain and warehouses also allow food retailers to be more efficient and better match products in store to customers' demand.
The technologies in store and automatic payment methods also contribute for Carlos' pleasure when going to the store. There is no more waiting in a queue or getting lost and wasting a significant amount of time in a hypermarket. Since the store Carlos usually goes is close to his house, Carlos goes there several times a week and buys less products each time.
As Carlos does not buy groceries online, companies such as *P&G* or *Unilever* did not invest in owning an online platform and do D2C, therefore, food retailers continue to be the main shopping aggregators, serving as intermediaries between customers and producers/suppliers.

Few clicks away

Carlos has such a busy life that he wants maximum efficiency and commodity in everyday tasks. To respond to these needs, several food retailers started investing heavily in their e-commerce platforms. Carlos saw on this channel a smoother and faster way of shopping and so, started to adopt it to buy several types of products, including groceries. Nowadays, he goes to the website of the retail chain that offers more benefits to him and finds a vast diversity of products, which are easy to find and pay. Usually, companies personalize the website according to his needs. This also encouraged him to keep buying online since he can easily find promotions and new products of his interest. Even with some evolutions that appeared in store, the fact that, with e-commerce, there is no need to lose time traveling, made it a more advantageous channel. Such as Carlos, many other people started adopting it, which resulted in an increase in investment on delivery processes and in economies of scale. Besides having now lower delivery times, if Carlos can't set a time in which he will be at home, he also has the option to collect his groceries in pick-up points. With this, there was a decrease in the number of physical stores but there are still some that sell mainly perishable goods and products for immediate consumption (e.g., one missing ingredient for dinner, cravings).

Low D2C Adoption

In order to better understand the implications for each scenario, customer journeys were done for two personas

Mary

Mary is a 70-year-old woman who lives with her husband. She has two children, who live extremely busy lives and three grandchildren.

Mary is retired, so she has a lot of available time. She likes to go for walks with her husband, meet her friends and go to stores for shopping.

Mary enjoys going to a store to do her groceries, as she did her entire life and be able to handpick the products herself, even though it is a big effort to carry the products home. Mary is also not very good with technologies in store and is always afraid she will do something wrong causing her distress. Hence, she avoids technologies and prefers the support of a store collaborator as much as possible.

Mary owns a phone, a computer and has internet. She can use them for basic tasks but is not very agile and does not trust online payment systems. She could ask her children for help or for them to be in charge of the groceries, but she does not want to be a burden and wants to be independent from them, so she prefers not to shop online.

Steve

Steve is 30 years old and lives with his girlfriend and their 3-year-old son. His work is split between working from the office and homeworking.

He finds being at home all day quite dull, therefore, he likes any activity outside of his house: going for a run, going to a bakery or even going shopping in a physical supermarket, where we likes to see and feel the fresh products he will buy.

Despite enjoying going to physical stores, Steve is a tech-savvy, always looking for innovations and he is very keen on online shopping. When he goes to a store, he wants the experience to be as efficient and effortless as possible. Hence, he enjoys all technologies available that allow him independence in store and avoiding queuing to pay his groceries.

When he has less time available and/or wishes to buy regular non-fresh products, he prefers to do so online, as he trust the quality of the products delivered at his home and has the availability to receive them.

Why consider these two personas?
The use of two personas **highlighted the needs and limitations of different client segments**, that should be taken into consideration when strategizing for the three time horizons.

Though shoppers like the convenience to have their groceries at home a click-away, the shopping experience in food retailers has less varied offerings and requires tech skills

Legend:
- 🟡 Mary
- 🔵 Steve
- 🟢 Both

High Satisfaction

🔵 I really enjoy having the two options: I can go to the store when I want to pick fresh products, but I rely on online channels as some of my favorite brands are there, and it is easier to coordinate with my schedule.

🟢 At least there are still some physical stores where I can get my fresh products and go when I don't want to buy online

🔵 I like that I can order directly from *Unilever* and have access to all the products that I need, at a cheaper price. The promotions and convenience do make it worth it to order from their website.

🔵 I can easily go to the supermarket when getting my fresh products, as there is almost no traffic. Although currently, it is really easy to just access the different websites and make my orders there.

🟢 I do like that I can have my default baskets online, with regular reminders so I don't waste a lot of time deciding and looking for products.

🟢 I like that I can get the sense of what I'm buying based on the ratings of the products.

🟢 With big companies having their own sales channel, I can get better and exclusive deals that I didn't have with the food retail chains.

🟢 Private labels are a good alternative to renowned brands.

🟢 Now some brands are selling new products, that I hadn't seen in other retailers before.

🔵 With just a click, I can pay my groceries online, as they have memorized my profile.

🟢 Now, ever since my favorite brands have started selling on their website, there have been incredible promotions that do make it worth to buy directly on their website.

🔵 I like how I can schedule when my products will be delivered. It is very convenient considering that I have a young son and I am working from home some weekdays.

🟡 It is always a struggle for me to carry my groceries home, by myself, so getting them at home sure helps.

🔵 Shopping online is very convenient. I can still go to the store if I really need to and/or get my regular groceries at my house just with a few clicks. The predefined shopping bundles are awesome!

Baseline

Low Satisfaction

🟡 Nowadays, retailers and renowned brands are encouraging me to buy online! Yes, there are still physical stores, but I wish they were closer to my house.

🟡 I understand the website, but sometimes I still get confused. I prefer to go to the physical store

🟢 If I want to have products of renowned brands, I need to access too many websites. Adding to the website of the food retailers, it becomes a hassle.

🟢 When choosing my groceries, I need to have multiple websites open whenever I want to buy renowned brands' products.

🟢 Unfortunately, I can't buy all my groceries all at once in the online channel, as I still prefer buying perishables at the store.

🟡 Physical stores are now smaller and more focused on perishable products. They do not have the variety they had before.

🟡 My family have told me that it is safe, but I just don't get how they can collect my payments online. It doesn't seem safe.

🟡 It sure is better to not have to carry my groceries from the store to the house, but I don't really trust that the food retailers will deliver all my products.

🟢 When I order online, I don't get my products instantly, as I must wait for the delivery.

🟢 It bothers me to have to open the door several times during the day in order to receive all my orders.

🟢 I don't get to feel as many products as before. Nowadays, being mostly online the shopping experience is way too different.

Customer Steps

Channel & Location	Accessing the store	At the store	Payment	Take/get the products home	Final thoughts

Satisfaction Criteria used : User-friendliness, Convenience, Time-efficiency, Quality of Experience

Both personas are satisfied by the possibility to continue doing their shopping in a physical store, where they can find the entire range of products they need for their daily lives

Mary
Steve
Both

High Satisfaction

- I am glad I can still go to a store since I don't understand technologies very well and I prefer to avoid buying my food online.
- Since I am homeworking most weekdays, I am glad I can use groceries as an excuse to leave the house and see other people in person.
- I can still use the online channels to buy specific products that I can't find in my proximity and convenience store. I will choose the delivery date to a day I am working from home. Most of the times I prefer to go the physical store.

- With so many proximity stores in the area I live, I can walk to my preferred one.
- I like that I have several options and different food retail chains to choose from in the proximities of my house.

- So nice to be able to choose my fresh products! I don't like other people choosing it for me.
- Despite being a convenience, smaller store, I can find most of the products I need.
- I like having the option of buying private label products at lower prices. Some are even better than the original brand.
- I enjoy the free samples of new products and that there are regular events at a close by hypermarkets where I can learn new things and meet people.

- I love all these technologies. I can scan my products with my phone, put them in my reusable bags, pay with *MBWay*, *PayPal* or a virtual credit card and leave the store. No more waiting in queue or scanning products all at once!

- By going to the physical store, I have the products available immediately.

- I am glad despite all the new technologies available, I am still able to do my groceries and be independent, instead of having to ask one of my children to order my groceries online for me.
- As I go to a small supermarket and I walk there, I have to go more times and buy less products each time, but I don't mind it, is already part of my routine.

Baseline

Low Satisfaction

- I should walk to the store as it will be hard to find a parking spot.

- Even though there are many technologies in store, if I want fresh meat, fish or charcuterie products I still have to wait to be served by a store collaborator.

- I don't understand all these technologies. They say I can do it all with a phone, but I need a collaborator of the store to scan my products and so that I can pay with a credit card or money. Now, there are few collaborators, I have to wait in a queue sometimes.

- I am so pleased that I can ask in-store for my groceries to be delivered at my house, however this is a paid service, and I can't have my products available immediately.

Customer Steps

Channel & Location	Accessing the store	At the store	Payment	Take/get the products home	Final thoughts

Satisfaction Criteria used : User-friendliness, Convenience, Time-efficiency, Quality of Experience

Customers that are tech savvy prefer to buy renowned products by the D2C channel because of the exclusive promotions and products. Most clients prefer to go to the physical stores to buy perishable products and discover new products

Legend:
- 🟡 Mary
- 🔵 Steve
- 🟢 Both

High Satisfaction

🟡 Fortunately, I can continue shopping at a physical supermarket. My son tried to encourage me to shop online, but I am not comfortable doing that since I am frightened of doing something wrong.

🔵 It is not easy to work from home and care for a three-year-old child at the same time. Any excuse for us to get out of the house for a while is a good one, and that is why I enjoy shopping at a physical supermarket.

🔵 I like to purchase renowned products directly from companies' websites since I discover products that are not available in physical stores, as well as learn more about the products that I want to buy and receive exclusive promotions. Another feature I appreciate is the ability to purchase products in bundles. For example, yesterday, I purchased a pack with personal care items from the *P&G* website. It is a wise investment because is less expensive buying the bundle than purchasing each product separately. I occasionally buy the bundles in larger quantities to do stock at home.

🟡 I live close to several convenience grocery stores. It takes less than 10 minutes to walk to all of them.

🟢 I enjoy choosing the fruits, vegetables, meat, and fish that I will purchase. I have always liked doing my own shopping and dislike having it done for me.

🟢 The perishable goods are always fresh and of high quality.

🟢 I enjoy trying new products and I am delighted when the supermarket gives me free samples. Sometimes I like the new products so much that I end up buying them.

🟢 I love when the hypermarket hosts events. It is great shop and learn something new at the same time.

🟢 I like to buy private branded products since they are of high quality and reasonably priced.

🔵 I despise waiting at the checkout, so I am delighted that the supermarket stores have technologies that allow me to scan products with my phone and pay with *MBWay*, *PayPal*, or credit card. The procedure is self-dependent, easy and quick.

🟡 When paying, I always prefer to go to the cashier because I can pay in cash and the employee always help me to put the groceries in the bags. The other payment methods are complicated and confusing.

🔵 Carrying groceries to home is not a problem! The groceries are not too heavy because I buy mainly perishables and other lighter products. The rest I order online on the websites of my favorite brands and receive them at home.

🟡 Because I do not feel comfortable using the new technologies and I am afraid of making a mistake, I am relieved to be able to continue shopping at a physical grocery.

🟢 I enjoy that stores offer a variety of payment choices according to my preferences.

🟢 The products are extremely fresh because they are replenished several times a week. As the grocery store is close to my house, I go more frequently and buy less quantity.

Baseline

Low Satisfaction

🔵 I need to visit multiple websites in order to purchase the products I desire, which is a time-consuming process. Despite the fact that several firms have formed strategic alliances and share a website and delivery, I still need to go to different websites. Each strategic partnership sends its products separately, and I need to be at home to receive everything. Sometimes I need to open the door like 5 times on a day to receive my orders.

🔵 I prefer to walk to the supermarket because I can only go to there at the end of the day or on weekends and I already know that there will be traffic and that it will be difficult to get a parking spot. The only problem is when it is raining, or it is too cold.

🟡 Unfortunately, there is usually just one cashier, so I have to wait a long time in line.

🟡 I do not want to bother my children, so I always walk home and carry the groceries. Although the distance is short, it is not very pleasant to carry so many bags. Unfortunately, my back is no longer as strong as it once was.

Customer Steps

Channel & Location	Accessing the store	At the store	Payment	Take/get the products home	Final thoughts

Satisfaction Criteria used : User-friendliness, Convenience, Time-efficiency, Quality of Experience

People find very convenient to have a big offer on just one website however it is important to be familiarized with technology and they also find important to personally sense some type of products

Legend:
- Mary
- Steve
- Both
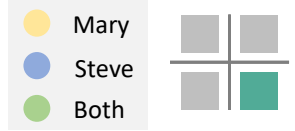
High Satisfaction

Channel & Location
- It is so nice that we can do grocery shopping from everywhere and at anytime of the day.
- I can use a quick work break to quickly order my groceries and enjoy the remaining free time to do other things.
- I value the existence of some proximity stores where I can still go to buy fresh products.

Accessing the store
- It is so easy to access the website and I still can go to a proximity store to handpick the fresh products.

At the store
- I have daily, weekly and monthly default baskets that allow a faster experience.
- When buying a product though the website, I can see feedback from other customers.
- I have access to more variety than when I was going to the proximity store. It is nice to find everything we need in one place.
- I like that I don't need to walk around the corridors searching for products that I don't know the place, since stores are now smaller.

Payment
- All the new technologies like biometric payments allow me to have a secure and smooth payment process.

Take/get the products home
- Since they deliver products at home, I don't have to carry all the heavy products myself.
- As I am working from home, it is easy to schedule a time when I will be available to receive the products at home.

Final thoughts
- I find very convenient to have all the brands selling in only one place since I don't need to go through different websites to buy everything I need.

Baseline

Low Satisfaction

Channel & Location
- I find confusing to understand all the process and find the products on a little screen or on the computer.

Accessing the store
- I am dependent on internet connection to buy my groceries.
- I still go many times to the physical store because I have some difficulties accessing the website, it seems too confusing.

At the store
- I like to choose the fresh products like fruits and fish physically because through the app we can't control the quality and type of product.

Payment
- I don't feel safe putting my credit card data on the internet.

Take/get the products home
- Sometimes I need the products immediately and the home delivery takes too much time to arrive. Sometimes, I see if there are pick-up points near my house for faster delivery.
- The delivery times could be faster. Also, they give a time range of more or less 3 hours in which I have to be home to receive it in 2 minutes.

Final thoughts
- If I need a product immediately, I will not be able to order online and receive it on time.
- There are some products that I would like to have a better perception than what I have online like candles and detergents. I can't smell it now!

Customer Steps

Channel & Location	Accessing the store	At the store	Payment	Take/get the products home	Final thoughts

Satisfaction Criteria used : User-friendliness, Convenience, Time-efficiency, Quality of Experience

For each scenario, the main implications were developed (1/2)

	MULTIPLE TABS OPEN	IN-STORE SHOPPING IS KING	THE FIGHT IS ON	FEW CLICKS AWAY
Emergent Opportunities	• Improve **the online shopping experience**, making it accessible to everyone • Invest in the **delivery system** • Invest in **private label** products to compete with the D2C rivalry. As these typically have high quality and lower prices, shoppers may switch from branded products to private label ones. • Create a **classification and feedback feature** on each product online • Decrease costs since physical stores lose importance as online demand increases • Food retailers should highlight the fact that they are able to offer a wider range of products in comparison to the brands that are available through D2C	• Improve **in-store experience** to attract shoppers • Provide **samples** in-stores to increase sales • Provide good quality **private label** products at an affordable price • Provide distinct **experiences** to differentiate from other food retailers as they will continue to be the main competitors • Provide home delivery services after in-store purchase, mostly for older generations and high-volume purchases • Continue to provide **in-store assistance** for shoppers which prefer not to engage with technologies • Provide a **full range** of products and brands in store to satisfy customer needs	• **Improve customer experience** in the physical stores by investing in new technologies, providing flexible payment methods, distributing samples of new products and hosting events • Increase customer engagement and **strengthen the relationship between food retail chains and customer** through in-store experiences and excellent face-to-face customer service • Offer **fresh and high-quality perishable goods** • Provide **good quality private label products** that are identical to the renowned ones but at an affordable price • Provide **in-store assistance** for shoppers that are not tech-savvy or have concerns regarding new technologies	• Invest in navigate **websites**, making them **accessible for everyone** • Improve the **delivery system** • Generate a classification and review of each product • **Collect data** allowing a personalization of offer and improvement of supply chain and stock management • High market share since **food retail chains are the main channels** of food retail industry • Provide a wide variety of products and brands in the same "place"
Challenges	• **High rivalry** among the different food retail chains and product competition against D2C (private label products vs. branded products) • Shoppers dissatisfaction due to having to order from multiple websites • Elderly customers find it hard to get their shopping through online channels • Need to maintain and develop 2 different sales channels as online gains importance • Low differentiation across food retail chains • **Less customer engagement** as part is done online • **Low logistics efficiency** in delivery when compared to third-party platforms like *Glovo* that highly focus on that competency	• **High rivalry** between food retail chains • Competition in **promotions and discounts** • **Loss of client segments** if their needs are not satisfied (e.g.: elderly population if only technological solutions in-store, or younger generation in case a food retailer does not keep up with competitors' technological innovations) • High number of proximity stores– may result in more fixed cost • **Low differentiation** between stores of different food retail chains • **Low differentiation** between products and prices between different food retail chains	• **High rivalry** between private label products and renowned products • High rivalry among food retail chains because there is a **low differentiation** among them (e.g., similar stores, alike products offered and identical prices) • **Loss of customers** if their needs and demands are not fulfilled (e.g., type of products offered, methods of payment presented)	• **High rivalry** and price competition between food retail chains • **Loss of client groups** if their demands are not met (e.g.: elderly population if it is hard to access or understand the website) • Low possibility of having customers directly choosing fresh products • **Cost of transportations and delivery** • Investment requirements to improve routes and decrease carbon footprint of deliveries • Lower loyalty due to lower differentiation between products, prices and services

For each scenario, the main implications were developed (2/2)

	MULTIPLE TABS OPEN	IN-STORE SHOPPING IS KING	THE FIGHT IS ON	FEW CLICKS AWAY
Relevant Competencies	• **Logistics/Distribution** • **Delivery channels** • **Website** design/AI capacity of profiling customers • **Private Labels** (production of competitive private label products)	• **Quality** of products • Good **customer service** and **no waiting time** in store due to technologies • Pleasant **environment** in store (store layout & experiences) • **Proximity stores** (hypermarkets will lost prominence as customers choose to go to nearer convenience stores)	• **Quality of products** (mainly perishable goods) • **Excellent customer service** in physical stores • Enjoyable **environment** in-store (store layout & experiences) • **Proximity stores** (hypermarkets will lost importance because customers prioritize convenience that can be find in smaller and nearer stores) • **Private Labels** (to compete with D2C)	• **Logistics/Distribution** • **Delivery channels** • **Good client support line**
Winners	• **Shoppers** (broader range of options as increasing competition is better for clients → Food retail chains will have to compete with D2C brands through better offers. Increase in convenience as e-commerce is developed, it allows another sales-channel option for shoppers. However, customers will need to access to several different websites) • **Distribution companies/channels** (partnered with food retail chains and big brands opting for D2C as online sales gain greater importance) • **Suppliers** (of private label products, since with an increase in D2C, food retailers may increase investment in these products) • **D2C companies** as they no longer have food retail chains as intermediaries • **Third-party platforms** (like Glovo, that are able to gather multiple D2C companies and facilitate the shopper's work of individually searching for those branded products) • **Food retail chains** (less costs by reducing the number of physical stores)	• **Food retail chains** as they continue to be the main channel of food retail • **Shoppers** (convenience and time effectiveness, when going to a physical store; possibility to handpick their fresh products) • **Investors** (food retailers continue to be profitable businesses) • **Employees** (perform higher value-added tasks and customer service, instead of repetitive and/or non-creative/non-rational tasks	• **Shoppers** (possibility to choose the products they are going to buy and have new experiences when they go to the physical stores) • **Investors** (food retailers will continue to be profitable companies because physical stores will be the place of choice to buy perishable products) • **Suppliers** (food retail chains will continue to invest in partnerships with small and international producers that have good quality products) • **Companies that invest in D2C** (brands will have direct contact with customers, and will control how the products are offered)	• **Food retail chains** (they will save costs because they will have fewer physical stores) • **Shoppers** (convenience and time effectiveness) • **Investors** (food retailers continue to be profitable companies)
Losers	• **Food retail chains** (due to of D2C) • **Investors** (food retail chains, with the increase of D2C, will lose the margins over the higher-priced branded products. Thus, food retail chains are required to invest in private-labels)	• **Suppliers** (food retail chains continue to take margin from suppliers as intermediaries. Suppliers continue to not have direct interaction with shoppers) • **Employees** (lower number of employees required)	• **Food retail chains** (they will lose a percentage of sales of renowned products because these brands started to sell through the D2C channel)	• **Suppliers** (continue to have low margins and don't have direct contact with shoppers, with food retailers as intermediaries between them and shoppers)

05

Recommendations

| Early Warning Signals, Strategic Options, Strategic and Organizational Recommendations (Short Term, Medium Term and Long Term)

A scorecard of Early Warning Signals was created, to enable companies to monitor the validity of the scenarios and recognize the future as it unfolds

High D2C Adoption

The fight is on

Multiple tabs open

- 8 out of 10 Portuguese customers will continue to shop perishable products in physical stores
- Retailers are elevating the physical shopping experience by hosting events and investing in new technologies
- According to *KPMG*, 40% of Portuguese shoppers enjoy buying renowned products through the D2C channel since they receive exclusive promotions and additional information about the products
- Based on a *Nielsen* study, Portuguese shoppers are satisfied with the new technologies in store, as they solve their biggest pain points
- *PepsiCo* and *Mondelez International* follow *P&G* and *Unilever* with a D2C strategy
- *Central de Cervejas e Bebidas:* D2C sales nearly double in 2 years
- Retailers increase significantly investments in private labels to answer to the D2C strategy of renowned companies
- According to *PwC*, grocery store visits increased by 20% in 2023

- *Continente* joins other food retailers in guaranteeing all around 15-minute deliveries
- Based on a recent *Deloitte* study, e-commerce sales in Portugal have increased from 2% in 2020 to 8% as of 2025, representing a higher growth rate than expected
- According to a study by *Nielsen*, 7 out of 10 Portuguese shoppers order groceries online weekly
- Despite being the less significant segment, 60% of 65+ years old shoppers have experimented ordering online and 32% intend to continue
- Private labels sales account, on average, for 58% of Food Retailer's total sales
- Store visits have decreased by 28% since 2022
- Based on the food retail industry's latest information, the number of companies selling D2C in Portugal increased to 6
- Latest results show that, as of 2024, retailers have lost nearly 5% of sales to renowned brands doing D2C

Low increase in e-commerce usage ← **Shoppers'** | **E-commerce usage** → High increase in e-commerce usage

Producer's D2C adoption

- E-commerce increases in fashion and electronics but remains low in the food industry. Its growth rate continues stable at around 20% annual growth and it is not expected that it will increase significantly in the next 5 years
- A study by *Nielsen* concludes that 70% of Portuguese shoppers do not intend to do their grocery shopping online
- With an increase in environmental and health awareness, shoppers prefer to walk to the nearest supermarket instead of having groceries delivered in their houses
- Food retailers continue to focus on customer service and proximity stores, with a 20% increase in number of stores in the last 2 years
- With all the new technologies in store, shoppers reduce the average time spent shopping to 15 minutes! A 60% reduction from 2020 average time (approximately 40 minutes)!
- With customers' lack of engagement in the online grocery shopping, *Unilever* steps down from their aggressive D2C strategy
- Despite some attempts, there is no new company successfully doing D2C
- *Sumol+Compal* reports a decrease in profits due to D2C. The company does not intend to continue to pursue this strategy

- 85% of Portuguese families have their food retailer app on their smartphone
- Food retailers' online conversion strategies are attracting many Portuguese families
- Average number of purchases per client is decreasing but average basket value is increasing since shoppers are using the online to make bigger purchases at once
- Online is the new sexy! Most organized food retailers are now betting on their websites, offering amazing conditions to customers
- Food retailers are investing in their own delivery service
- Remote work is increasing and shoppers prefer to buy online, not to leave the house on purpose to do their groceries shopping
- The new and innovative company *Getir* is having a huge success delivering groceries
- *Amazon online* grocery store is planning to start operating in Portugal in the next year
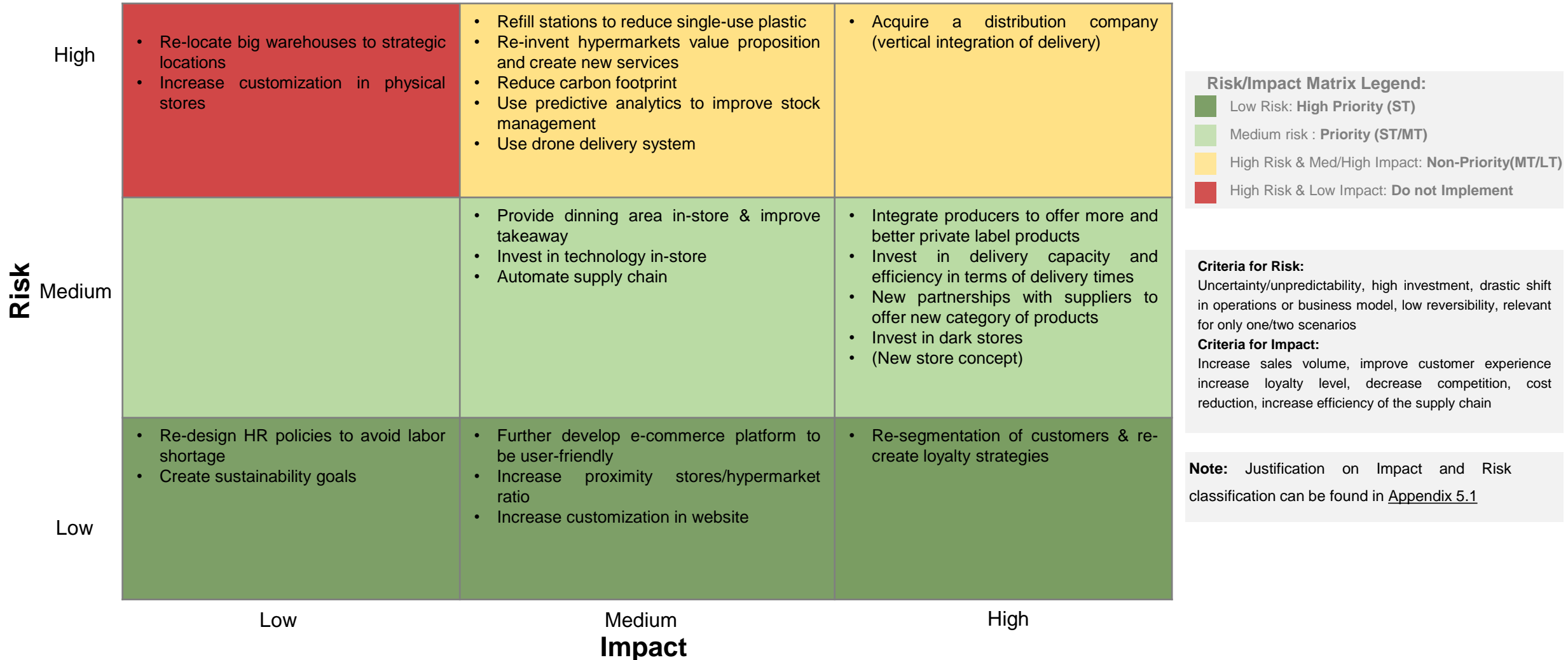
In-store shopping is king

Low D2C Adoption

Few clicks away

Note: Companies may conclude that a scenario is plausible and is unfolding in the real world when there is a high degree of density (e.g., 75%) of the block of early warning indicators that point into that scenario direction.

According to the scenarios' implications, Strategic Options were generated and then assessed in regard to risk and impact of their implementation by the Portuguese food retailers

Risk (vertical axis)

High
- Re-locate big warehouses to strategic locations
- Increase customization in physical stores

- Refill stations to reduce single-use plastic
- Re-invent hypermarkets value proposition and create new services
- Reduce carbon footprint
- Use predictive analytics to improve stock management
- Use drone delivery system

- Acquire a distribution company (vertical integration of delivery)

Medium

- Provide dinning area in-store & improve takeaway
- Invest in technology in-store
- Automate supply chain

- Integrate producers to offer more and better private label products
- Invest in delivery capacity and efficiency in terms of delivery times
- New partnerships with suppliers to offer new category of products
- Invest in dark stores
- (New store concept)

Low
- Re-design HR policies to avoid labor shortage
- Create sustainability goals

- Further develop e-commerce platform to be user-friendly
- Increase proximity stores/hypermarket ratio
- Increase customization in website

- Re-segmentation of customers & re-create loyalty strategies

Impact (horizontal axis): Low | Medium | High

Risk/Impact Matrix Legend:
- Low Risk: **High Priority (ST)**
- Medium risk : **Priority (ST/MT)**
- High Risk & Med/High Impact: **Non-Priority(MT/LT)**
- High Risk & Low Impact: **Do not Implement**

Criteria for Risk:
Uncertainty/unpredictability, high investment, drastic shift in operations or business model, low reversibility, relevant for only one/two scenarios

Criteria for Impact:
Increase sales volume, improve customer experience increase loyalty level, decrease competition, cost reduction, increase efficiency of the supply chain

Note: Justification on Impact and Risk classification can be found in Appendix 5.1

Following the options generation, strategic and organizational recommendations were developed, associated with a certain time horizon (1/5)

Three Time Horizons:

- 3 to 4 years - Exploitation
- 4 to 8 years - Emergent Business
- \> 8 years - Viable Options

Time Horizon

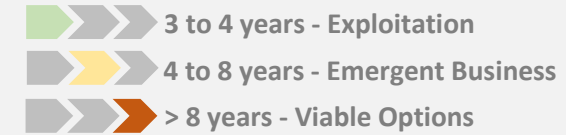| Topic	Recommendations:	Explanation/Further details:	Scenarios where Relevant*	Time Horizon Justification
Channels	**PD** Develop a **user-friendly website and app** with distinct features according to the different customer profiles	Food retailers should invest in sets of profiles for the website and app that are displayed based on the customer characteristics and preferences. They should also develop new features such as default baskets and product review sections. For customers who are unfamiliar with new technologies or who are elderly, the website and app should be easy to understand. For tech-savvy customers, the set of features should be user-friendly and incorporate gamification concepts, such as purchase-based reward systems.		Food retailers should continue to invest in the development of the website and app in the short term. Although a significant investment is required, this recommendation can be implemented quickly because the basis is already established, as most food retailers have already an e-commerce platform. Furthermore, the development of new and more complex features and the improvement in capacity to operate more efficiently should be made in the medium term based on the evolution of e-commerce demand.
	PD Increase the proximity stores to hypermarket ratio	Food retail chains should increase their proximity stores to hypermarkets ratio. Hypermarkets are no longer satisfying the shoppers' and retailers' needs for efficiency and convenience; therefore, food retailers should divest from hypermarkets depending on their performances (low sales/m^2) or location, reduce the store area or find alternative uses. These stores can be used to improve brand image and engagement with the customer by re-inventing their value proposition. Adding to this, more proximity stores should be open, in strategic locations, in order to increase convenience.		As hypermarkets are not as efficient as other physical locations and do not deliver the desired convenience (a predetermined force), such procedures/implementations can lead to an increase in sales per square meter. Moreover, at first, the reasoning should be to not open more hypermarkets, rather focusing on strategic convenience stores. Regarding the proximity stores, despite the substantial investment, it is a trend that has been observed in recent years and have received high acceptance from customers. For the reasons above, this should be a short-term strategy.
Customer Experience	**PD** **Re-segmentation** of the shoppers to provide differentiated loyalty programs	Retail chains should define new segments of shoppers based on demographic, behavioral, geographic and psychographic variables. New segments can include (1) students, (2) families with more than two children and (3) elderly people. Following the re-segmentation, food retailers should design specific loyalty programs for the new segments and host events considering the preferences of the main customer segments that frequent each store. These new targeted events increase the retailer-shopper interaction and loyalty. Moreover, theme-based events enable food retailers to interact with customers, advertise products and spread knowledge about a topic.		This recommendation should be adopted in the short term since re-segmentation is not a high investment process. The reformulation of the loyalty programs can immediately impact the profits and the customers' loyalty. Regarding the events, hypermarkets could start holding them in a limited number of stores to better measure customer engagement and, if successful, progressively expand to the remaining stores. The investment required is not considerably high because the events will occur at the hypermarkets and employees can serve as speakers/hosts.
	Use and develop internal data analytics to **customize offer** according to shopper preferences and data on historic purchases	By using data analytics and customers data to understand preferences and historic of purchases, food retailers are able to customize website layout, newsletters, promotions and suggestions accordingly. This would improve the customer experience, making it faster as it would be easier to find the products and would increase the likelihood of re-purchasing certain products, increasing sales for the company.		This recommendation should be adopted in the short-term because studies show shoppers are willing to provide their data in order to access personalized content and they value it. Although it represents a relatively high investment, several industries are already adopting it and food retailers should not lag behind in order to remain competitive.

PD - Recommendation in line with a predetermined driver of change

*The scenarios where the strategic recommendations are more relevant and impactful are highlighted in color, even though the recommendation may be applicable in all four scenarios.

Following the options generation, strategic and organizational recommendations were developed, associated with a certain time horizon (2/5)

Three Time Horizons:
- 3 to 4 years - Exploitation
- 4 to 8 years - Emergent Business
- > 8 years - Viable Options

Time Horizon

Topic	Recommendations:	Explanation/Further details:	Scenarios where Relevant*	Time Horizon Justification
Resources & Competencies	**Re-design HR policies** to improve performance and face labor shortage	Food retailers can attempt to reduce labor shortage by re-designing HR policies. It is advisable to create training programs that will allow employees to get new skills, establish a clear career path and invest in creating a better working environment. Additionally, with the introduction of new technologies, the number of employees needed will decrease and employees in store will be "the luxury of the future"[1]. In this sense, it is important to provide training and tests to fully know the portfolio of products and services offered and develop soft skills to better fulfill their tasks and support customers.		Labor shortage is a current concern of food retailers. To avoid additional costs, actions should be implemented as soon as possible. Training programs can also be implemented in short-term because a good customer service is a way to differentiate from competitors. It does not imply a high expenditure and has short-term returns.
Processes & Systems	**PD** Create long term **strategic sustainability goals** and a clear strategic plan to be reinforced over the years, while increasing shoppers' awareness and engaging in initiatives to be **perceived as sustainable companies**	Sustainability goals should be set in several areas: plastic pollution, food waste, carbon emissions, among others, while not losing focus on the food retailers' short-term sales, costs and margins. These should be aligned with regulators and institutions guidelines such as Sustainable Development Goals by UN. Additional to goal setting, food retailers should communicate and engage shoppers in order to ensure the initiatives' success. These actions will have a positive social, economic and environmental impact that should be taken into account and reported to all companies' stakeholders.		These goals should be achieved in the long-term, but they should be set in the short-term as well as the actions required to achieve them. Measuring the problems, its negative impacts and the results of the actions taken is required in order to justify and estimate return on these investments. Engage shoppers and increase awareness is key to ensure initiative success and acceptance. This way food retailers can differentiate from competitors and be perceived as sustainable companies.
Supply chain	**New supplier** partnerships and/or new product categories	Food retail chains should look to expand their product portfolio by making new partnerships. To do so, food retailers may partner with sports equipment, bricolage and gardening suppliers, among others. Additionally, as remote working increases, a new potential partnership should be with tech/office suppliers. This includes webcams, mouses, keyboards and others. A strategic partnership should be Logitech, that offers these products at a low price.		This strategy should be considered for the short-term, as the shopper habits have changed during the COVID-19 lockdown, and therefore food retailers should look to innovate their portfolio and gain a competitive edge as these are not product categories being invested by players in the industry.
	PD Invest in **technology to automate supply chain**	By integrating technology (AI, IoT,..) to automate processes, food retailers will be able to improve inventory management, have end-to-end inventory visibility, avoid stock-outs and reduce food waste. Robotically controlled warehouses with automatic products' ordering to suppliers, shelf replenishment and delivery routes planning will allow cost reductions and an increase in efficiency. Automation of the supply chain will also allow a quick response to shifts in shoppers' demand and a more efficient labor and resources allocation. Companies that fail to automate their supply chain will lag behind.		This should be implemented in the short-term because despite requiring a high investment and representing a considerable shift in operations, these technologies are already available and some companies already implemented them, allowing for cost reduction and a more efficient supply chain. Technologies should be implemented continuously, as they are developed and tested and as soon as there is evidence proving the return on the investment

PD - Recommendation in line with a predetermined driver of change

*The scenarios where the strategic recommendations are more relevant and impactful are highlighted in color, even though the recommendation may be applicable in all four scenarios.

Following the options generation, strategic and organizational recommendations were developed, associated with a certain time horizon (3/5)

Three Time Horizons:
- 3 to 4 years - Exploitation
- 4 to 8 years - Emergent Business
- \> 8 years - Viable Options

Time Horizon

Topic	Recommendations:	Explanation/Further details:	Scenarios where Relevant*	Time Horizon Justification
Services	Create **new services** in the physical stores to **enhance the customer experience**	Food retailers should create new in-store areas, such as one for children. The area should be appealing and include a range of games and inflatables. This recommendation can improve the customer experience for children and their parents that would be able to spend longer time shopping, boosting the average basket size. With this service, retail chains will differentiate themselves from competition, the families will go to the stores more frequently and the loyalty levels will increase. Hypermarkets represent a good opportunity to exploit new services due to their size, positively contributing towards a strong brand image.		This recommendation should be implemented in the medium-term because it requires investment and the redesign of the store layouts. There is uncertainty in customers' engagement, therefore it should be done in a small number of stores initially. Additionally, retail chains should consider e-commerce evolution and, only if it is not increasing considerably, they should invest in this service.
	Implement **dining area** for all hypermarkets and improve takeaway options	Food retail chains should look to implement, across all hypermarkets, a meal-purposed area that will provide meals with a variety of options. These spaces will be, in order to attract new shoppers, redesigned aesthetically, in case the retailer already has a dining area, while serving comfort food to customers. Additionally, retail chains should look to improve the quality and variety of the takeaway options, across all stores.		Due to the uncertainty of shoppers' reception and engagement with this service, as well as the level of investment required to create new eating spaces, this strategy should be implemented in the medium-term, after assessing its feasibility and profitability on a smaller scale in the short-term, by implementing it in some strategic hypermarket locations.
Channels	**New store format: Come & Go** (small area store on strategic locations, focused on on-the-go products, takeaway meals and perishable products)	With an increased desire for convenience and prepared meals for takeaway, food retailers in Portugal should create a new store format. These would be smaller than convenience stores (approximately 50 m²) and would be located in strategic and "busy locations" such as railway stations, shopping streets and high-density residential areas. The stores would be focused on perishable products that shoppers prefer to buy in a physical store, takeaway meals and products for on-the-spot consumptions or that satisfy shoppers needs while commuting and before returning home at the end of the day.		This strategy is relevant and applicable in all four scenarios) as this store format would be focused on fresh products, takeaway and products for on-the-spot or later at home consumption and products that require immediate availability or are required on the go. As this would be a new store format which would require high investment and would be difficult to revert, food retailers should consider its implementation in the medium-term
Customer Experience	**Expand the technologies** that are already implemented in some stores and **introduce new ones** to improve the customer experience in the physical stores	Food retailers should use innovative technology such as electronic tags, customer support robots and digital displays to convey more information about the different products.		This recommendation should be implemented in the medium-term since it requires a significant investment, the technologies are being developed and it is more relevant in scenarios with low levels of e-commerce adoption.

*The scenarios where the strategic recommendations are more relevant and impactful are highlighted in color, even though the recommendation may be applicable in all four scenarios.

Following the options generation, strategic and organizational recommendations were developed, associated with a certain time horizon (4/5)

Three Time Horizons:
- 3 to 4 years - Exploitation
- 4 to 8 years - Emergent Business
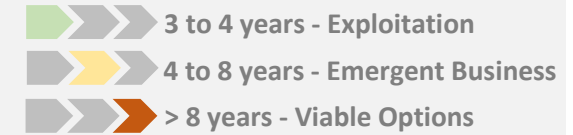- > 8 years - Viable Options

Time Horizon

Topic	Recommendations:	Explanation/Further details:	Scenarios where Relevant*	Time Horizon Justification
Supply Chain	Focus on **eco-friendly packaging** by replacing single-use packaging for refill stations and re-usable containers (for products where feasible)	Beyond using recycled and recyclable materials in products' packaging, refill stations should be installed in store. This strategy will capture eco-friendly shoppers and will contribute significantly for the reduction of single-use packaging. This is applicable for several products such as rice, pasta, cereals, nuts, laundry detergent, drinks, shampoos, among others. This would be easier to implement in private label products, since food retailers have more control over these, but all suppliers should be included in this strategy.		With shoppers' current awareness of environmental impacts of plastic pollution and future regulations on plastic usage, new solutions need to be implemented. Several food retailers, such as Aldi, Asda, Waitrose in the UK already offer this for a limited range of products. However, this strategy would imply high investment and drastic shift in operations and supply chain, being difficult to revert and having substantial risk in case of low shopper's acceptance. Products, containers' materials, equipment, processes and shoppers' acceptance need to be studied and tested before implementation.
	Make home delivery more profitable - invest in delivery capacity and efficiency in terms of delivery times	Food retailers should partner with suppliers that have the know-how and reputation until they have the capacity to integrate delivery downstream. Retailers should use stores as distribution centres, as warehousing are a key component of the process, therefore increasing profitability due to the reduction in transportation costs. Furthermore, food retail chains should implement delivery-efficient systems, such as defining routes using AI and/or methods such as milk run, in order to reduce costs and increase profitability.		This recommendation should be implemented in the medium-term because it implies high investments and is dependent on the success and demand of online services that require delivery. Thus, in order to cope with the risks of the recommendation and the velocity of the demand, at first, food retail chains should outsource the deliveries, while increasing their own delivery capacity and only in a later stage have fully own delivery systems, studying the best and more efficient methods by using AI and methods such as the milk runs.
	Invest in **dark stores**	If e-commerce increases significantly, food retail chains will need to invest in distribution centers to meet that demand and ensure that the orders are fulfilled, and delivery time is met. Food retailers can transform some of their existing retail stores that are losing profits and shoppers due to the increase of e-commerce into dark stores or invest in stores not located in centers but with good infrastructures. Dark stores can also be used as click & collect locations for shoppers.		This recommendation should be implemented in the medium-term since it only applies to high e-commerce scenarios, requires a significant investment and it is difficult to revert.
	Vertical integration in the supply chain to **expand private label** breadth and depth, maintaining or improving their quality and low-price positioning	In response to an increase in D2C and to the loss of sales of certain products and brands, besides focusing on physical stores, food retailers can also improve their private label products depth and breadth. To do so they can integrate producers, if assessed as the best option, to ensure the desired level of quality. Food retailers should access if there is a better strategic option, or if it is a safer choice to own the product but only partner with the respective producer. Dairy products, personal care and snacks are potential areas where producers can be integrated.		This recommendation should be considered in the medium-term because it implies high investments and high risk of failing in case the integration of the company or the products acceptance are not as successful as expected. Additionally, this strategy becomes more relevant as a counteraction in case some suppliers start doing D2C, and therefore, it should be implemented when the uncertainty regarding the velocity of this tendency is lower and when the food retailers have more knowledge and data of their producer intentions.

*The scenarios where the strategic recommendations are more relevant and impactful are highlighted in color, even though the recommendation may be applicable in all four scenarios.

Following the options generation, strategic and organizational recommendations were developed, associated with a certain time horizon (5/5)

Three Time Horizons:

3 to 4 years - Exploitation

4 to 8 years - Emergent Business

> 8 years - Viable Options

Time Horizon

Topic	Recommendations:	Explanation/Further details:	Scenarios where Relevant*	Time Horizon Justification
Services	**Acquire an agglomerate platform** and **provide the delivery** for companies doing D2C	If D2C is high, food retailers may partner or acquire aggregating platforms that are providing delivery services to companies doing D2C. In this way, food retailers would provide to companies the service of delivery instead of only being intermediaries between the producers and the shoppers. Furthermore, in case the producers' D2C adoption is high, this would be an alternative for food retailers to continue to have profit from the sales of products that would be sold mainly through D2C channel.		This is a long-term recommendation as this strategic option is highly dependent on the evolution of D2C adoption and the partnerships established by food retailers' suppliers with aggregating platforms. Additionally, this option would require high amounts of capital to make the required acquisitions.
Supply chain	**Reduce carbon footprint** in distribution processes	Food retailers should look to reduce their carbon footprint by pursuing a carbon-neutral strategy for their fleets and inbound and outbound logistics. This strategy may include the transformation of the distribution fleet to fully electric cars. In case of outsourcing services, contractual clauses should be implemented to control and force companies to have no carbon emissions. Moreover, food retail chains should look to avoid split shipments, when a shopper makes several orders, and encourage customers to cluster their purchases. Additionally, food retailers may try to reduce the supply chain geographic distance by preferring local suppliers.		This recommendation should be implemented in the long-term as it implies high investment, is more relevant for scenarios with high e-commerce adoption and requires negotiation with external providers in case the service is outsourced and with suppliers to better match suppliers and stores geographically. Educating shoppers to prefer local products and to do high volume purchases that are less frequent and therefore have fewer negative impacts is also a lengthy process, that depends on the shoppers' acceptance and concern over environmental impacts of goods' transportation.
	Use of **drones as part of delivery system**	To complement the delivery system, food retailers may implement drones to deliver orders to shoppers' houses. Currently, *Amazon*, through *Amazon Air*, has implemented drones to their supply chain that fulfill small orders, up to 2,5kg. This method, is highly cost efficient, due to delivery costs being minimal, and beneficial to the environment. Thus, retailers should look to acquire the technology and use it solely for smaller deliveries in order to increase the efficiency of the supply chain. This way, with faster delivery times and a new technology the customer experience is also improved.		This recommendation should be implemented in the long-term due to the technologies still being developed and improved, and since currently, there are limitations to this method of transportation, as not all types of products can be transported and there is a relatively small limit in weight and volume that is possible to be transported by the drones. Moreover, this would require a high investment and would be dependent of the evolution of e-commerce usage.
Processes & Systems	Implement **predictive analytics** and bots to **improve stock management** by predicting shopping baskets	Acquire or partner with predictive analytics developers. Smart appliances (*LG, Samsung,…*) *are* already able to manage their inventories and provide suggestions. When this technology is further developed, predictive analytics will be able to collect consumption data, patterns and shoppers' preferences. In case data protection regulations allows it, it will be possible for the shopper's appliances and food retailers to autonomously create the shopping list, enabling a more efficient purchasing process, stock management and personalization of offer. With automatic shopping lists, customer's experience is highly improved.		This strategy should be implemented in the long-term because these technologies are still being developed and improved and there is still no data proving its financial return, additionally they represent high investment. Therefore, food retailers should collect more information and follow updates before deciding to implement them. Furthermore, there is still uncertainty regarding regulations on data protection and integration of all systems in the future smart houses, food retailers' databases and analytical systems, therefore this strategic decision should not be made in the short-term.

*The scenarios where the strategic recommendations are more relevant and impactful are highlighted in color, even though the recommendation may be applicable in all four scenarios.

Appendix

The scenarios development methodology is explained below, from critical uncertainties to scenario's narrative

By combining two of the critical uncertainties, four plausible future scenarios are created. Afterwards, a narrative of each scenario is developed. This exercise allows the identification of distinct perspectives on different aspects that the scenarios involve

Critical Uncertainties from the uncertainty matrix

2 critical uncertainties as axes to create 4 plausible and distinct scenarios

A narrative is created for each of the 4 scenarios
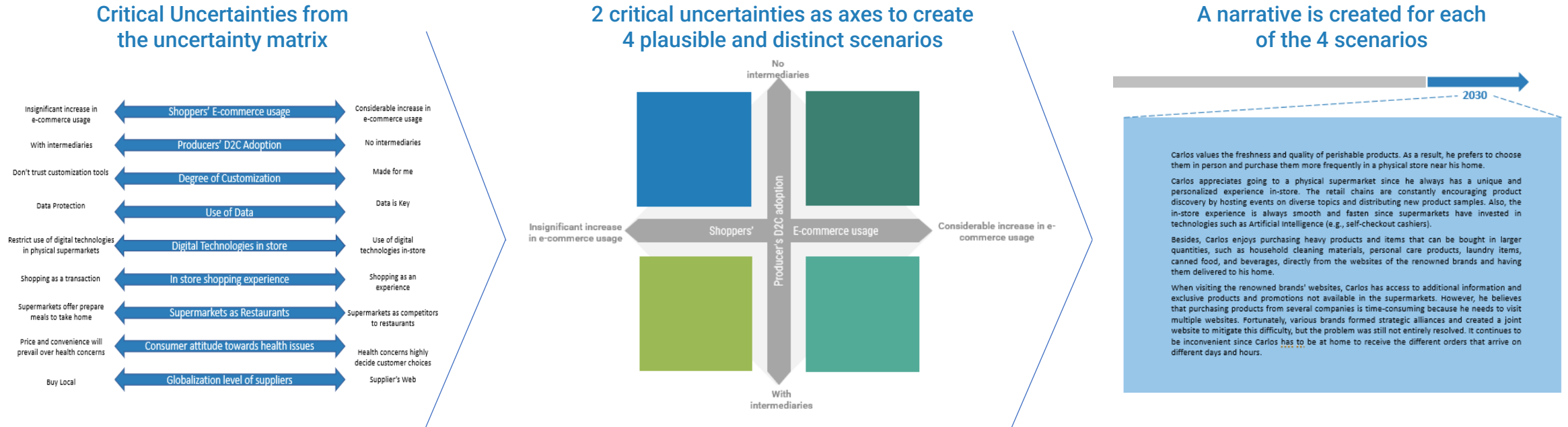
The "actual" future is likely to include elements of all the scenarios

"The test of good scenarios is not getting the future right... The real test of a good scenario is: did I make better choices as a result of having looked at and understood both my own environment better and the consequences of my actions?"

Peter Schwartz, Global Business Network

Below further details on companies positioning can be found. Although their offer has low differentiation, players in the industry have some differentiating points related to their values and processes (1/2)

Positioning

	1	Quality of fresh products Distinctive own brand Largest loyalty program in Portugal Solid omnichannel strategy and high bet on the *Continente Online*
	2	Their commitment is to "develop high quality, convenient food products and meal solutions at competitive prices". High amount of proximity stores Operational efficiency Excellence in quality and variety of perishables Quality private brands
	3	Do not do promotions nor discounts. Big focus on the customer (called "o chefe" internally) Focus on sustainability Investment in Suppliers "fornecedor totaller" and in an extremelly eficiente supply chain
	4	Focus on social responsibilily and sustainability Exclusive brand products of high quality Differentiated offer of food and non-food products with limited stock, available on a weekly basis. Strong commitment to categories such as fresh, organic, vegetarian and vegan products, as well as gluten-free and lactose-free options.
	5	Low prices Transparency Support of local producers and artisans
	6	Good working conditions for employees Good quality private labels Transparency Support of local producers and artisans Differentiated products with weakly campaigns offering typical products of a specific country

In order to understand the dimension of each brand and of hypermarkets vs. supermarkets, information on number of stores and of collaborators was compared (2/2)

Companies	Number of stores	Number of collaborators
1	304 (41 *Continente*; 132 *Continente Modelo*; 131 *Continente Bom Dia*)	24.940 *Continente Modelo* 4.618 *Continente* hypermercado
pingo doce 2	453	26.327
Intermarché 3	245	14.000
LIDL 4	261	7.500
minipreço 5	600 (251 of which are franchising)	3.500
6	65 (31 hypermarkets; 4 supermarkets; 30 convenience stores)	9.000
ALDI 7	83	2.239
MERCADONA 8	20	1.700

2.1

Contextual Environment

| Additional informational and data on each driver of change is provided in the following section

Data on the Portuguese population shows a negative tendency and an increase in portion of older generations. Food retailers should adapt accordingly

Decreasing population in Portugal

According to World Bank, in 2019, there was 1,42 births per woman; a birth rate of 8,4 per 100 people and a death rate of 10,9 per 1000 people[1], resulting in a negative tendency of the Portuguese total population.

For the first time since 2009, in 2019 Portugal registered a positive effective growth rate (0,19%), however it was due to a positive migratory balance as the natural balance was still negative[2].

Immigrants have different preferences an attract foreign competitors to enter the Portuguese market to satisfy these needs. For example, in Algarve, there are several British food retailers such as *the Food Co[3]* and the *Overseas Supermercados[4]* due to the foreign/English community that resides there or that chose Algarve as a vacations destination.

Aging Population in Portugal

The increase in life expectancy and low fertility rates result in an aged population in Portugal.

In 2019, 50% of the population living in Portugal had more than 45,5 years, which represents an increase of 4,3 years when compared to 2009[5].

The average life expectancy in Portugal is increasing and in 2019 it was 80,68 years[6].

In 2019, Portugal had the third highest elderly-to-young population ratio in the European Union (153 elderly people per 100 young people)[7].

[Click for sources](#)

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Generation has a big impact on shopping behaviours and currently there are 5 distinct generations of shoppers. Nevertheless, all generations desire convenience

Increase of generational gap

The generations with more people are Gen X and Boomers. The current five generations will remain and it is possible that a new generation with distinct traits will emerge in 2030[1&2].

To be successful, food retailers need to be aware of and be able to fulfil the needs of the current and new generations.
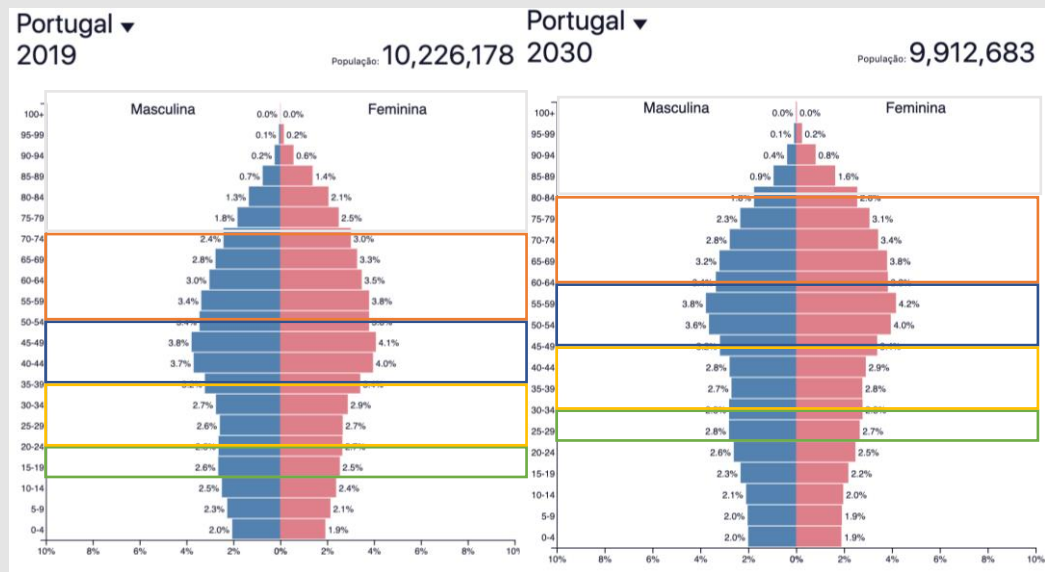
Desire for convenience

According to a paper by *McKinsey* (2021), nearly 60% of shoppers cite value and convenience as drivers for trying new places to shop. The convenience variable included factors such as "More easily accessible from home", "Offers good delivery/pick-up options", "Can get all items in one place"[3].

Since 2017, *Nielsen* has been reporting a trend in Portugal favoring proximity stores over hypermarkets and supermarkets, stating convenience as proximity of the store and variety of products and prices, With this, customers go shopping more frequently and buy less products in each shopping trip[4].

Click for sources

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Data shows an increase in remote working, even though with some uncertainty regarding proportion. Retailers and experts identified experiences in-store as a way to continue to attract shoppers

Increasing time availability and Homeworking

According to surveys made to the working US population, as of 2021, nearly 30% of Americans are working remotely, opposed to 7% in 2018[1].

Moreover, based on a study made to the commuting time in Lisbon, the average amount of time people spend commuting is 48 minutes, and more than 49% of people spend over two hours in public transportation every day. This highlights the extra time that would be available with an increase in remote working[2].

Transforming shopping in an experience

As an example of shopping as an experience, in California, *Raley's* supermarkets already provide features focused on the customer experience such as a loft dining area, wine tasting room, sushi and bakery departments and large outdoor seating area[3].

Aligned with the increasing desire for convenience and convenience/proximity stores, the industry experts interviewed defended that hypermarkets will need to be re-invented in order to attract shoppers[3]. Providing experiences in store and re-using the available space in store for other purposes may be a way to transform hypermarkets value proposition.

Click for sources

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Shoppers state they want healthier and more eco-friendly products, but it is not certain they are willing to pay higher prices for these products

Increasing shopper awareness of climate changes

According to a survey in 2016, 63% of all shoppers are positive influencers and encourage others to buy from environmentally and socially responsible companies[1].

65% of shoppers can be classified as responsible shoppers and are willing to pay extra for products produced in a environmentally and socially responsible way[1].

Additionally, in Portugal, 52% of shoppers buy sustainable products. A survey revealed that 9 out 10 people do value products, companies and brands that are sustainable[2].

However, there is no data proving the shoppers willingness to pay more for these products.

Increasing health awareness

According to a study conducted in 2019 by *Bureau Européen des Unions de Consommateurs* (BEUC), with the collaboration of *Deco Proteste,* more than 70% of Portuguese consider healthy and sustainable food products too expensive and only 15% agrees to pay more to consume these products[3].

Contrarily, a study by *TGI of Marktest* also conducted in 2019, concluded that the Portuguese are willing to pay more at least for products that do not contain artificial addictives[4].

Due to data contradiction the direction and velocity of this trend is uncertain.

[Click for sources](#)

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Shoppers show a clear preference for customized offer and food retailers may use this as a strategy to increase loyalty

Increasing customization

Regarding the **rise of mass personalisation,** there were clear indications that shoppers are more willing to engage with the brand if there was any unique value proposition being offered to them. This is demonstrated by a study by *Deloitte* (2019)[1]:

- 1 in 5 shoppers expressed an interest in personalised products or services and are willing to pay a 20% premium.

- 22% of shoppers are willing to share some data in return for a more personalized service or product.

- 1 in 5 shoppers would like for businesses to use personal data in exchange for being offered a personalized experience[1].

Nowadays, the tendency is for customization to continue to increase and data to become more valuable, however regulations on data privacy should be taken into account.

Decreasing loyalty

According to a study by *Nielsen*, in Portugal:

- 64% of shoppers go to four or more different food retail chains and only 10% claim they are loyal to only one chain[2].

- Almost 60% of shoppers believe that companies should offer loyalty programs[3] and 50% of shoppers say the main reason they join a loyalty program is to get rewards in daily purchases, reinforcing the assumption that company loyalty comes with rewards[4].

- 95% of shoppers want companies to develop new methods to reward them for their loyalty[3] and the same percentage of shoppers want to engage with their loyalty program through upcoming technology such as chatbots, AI, VR, and smart devices[4].

[Click for sources]

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E-commerce penetration increased with the COVID-19 pandemic and businesses explored an omnichannel strategy to provide the best customer experience possible

Increasing e-commerce

Recent forecasts assume that the European e-commerce market will keep its fast and dynamic growth, reaching over half a trillion U.S. dollars yearly in the next few years[1].

The COVID-19 crisis has fast-forwarded Europe's e-commerce transition by four to five years, especially in food retail. In the top five European markets (UK, France, Italy, Spain and Germany), e-commerce penetration ranges from 3% to 11% of grocery sales[2].

In 2020, there was an increase in the use and development of e-commerce platforms because of the Covid-19 pandemic, with revenues growing by 20% over 2019. It is predicted that revenues will grow at an annual rate of nearly 7% in the following years[3].

Demand for an omnichannel experience

According to a *Criteo* study, while omnichannel shoppers account for just 7% of customers, they accounted for 27% of sales in 2019. This demonstrates that an omnichannel experience, in general, may generate a larger volume of sales[4].

Due to the pandemic, businesses of all sizes were required to explore new digital sales channels and partnerships to prevent losing sales. These new approaches will continue to be used since they appear to be more convenient for the customers.

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More than half of retailers are investing in warehouse automations. The global market of smart fridges is expected to growth at a rate of 12% until 2025, enabling autonomous shopping lists
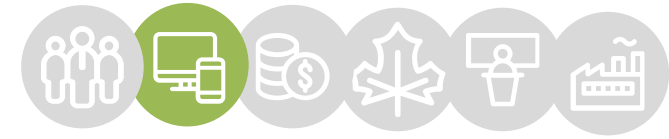
Increasing automation of supply chain

According to a study conducted in 2019 on retail, manufacturing and logistics professionals, more than 55% were investing in warehouse automation and 47% in predictive analytics[1]. Additionally, 61% expected that these investments would increase capacity as of the following year[1].

Using bots to predict shopping lists

The global smart refrigerators market is expected to grow from $2.5 billion in 2020 to $2.9 billion in 2021 at a compound annual growth rate (CAGR) of 16%. The market is expected to reach $4.56 billion in 2025 at a CAGR of 12%[2].

The technologies of these fridges and smart appliances and shelves at home will enable autonomous/automatic shopping lists, changing the customer experience and the food retailers demand calculations to better match supply and improve stock management.

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Technologies in-store can reduce considerably the labor costs. Shoppers engage with these technologies, with more than half of customers preferring to use self-checkout over cashier-assisted checkouts

Introduction of digital technologies in-store

In the future, a high degree of digitalization could reduce the labor hours needed to run a future supermarket by around 40%, which proves that a strategy towards the implementation of technological features may be a competitive and efficient way to move forward[1].

Increasing innovations of payment methods

Long queues were cited as a pain point in the shopping experience by 60% of the more than 5.000 respondents in a *Capgemini* survey conducted in 2019[2].

If given the option, 60% of the survey participants prefer self-checkout over cashier-assisted checkout[2].

Food retailers need to continue to innovate in payment methods to comply with shoppers' demands.

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The smart shelves and smart shopping cart markets will growth at rates superior than 25% in the following years and the 5G will reach the 3.5 billion of subscriptions by 2026

Increasing use of sensors in food retailers' stores

The global post COVID-19 smart shelves market is expected to grow from $1.8 billion in 2020 to $7.1 billion in 2026 (CAGR of 25.1% during the forecast period)[1].

The global smart shopping cart market is predicted to reach $931.22 million in 2020 and $2.913 million by 2025, growing at a CAGR of 25.62%[2].

Implementation of 5G

Globally, the number of 5G users is expected to increase from less than 200 million in 2019 to 1.02 billion by 2023[3].

According to *Ericsson* research, from November 2020, 5G will have 3.5 billion subscriptions by 2026, making it the quickest generation ever to be pushed out globally[3].

According to the most recent *Adobe Digital Insights* analysis, 5G will increase e-commerce sales by $12 billion by 2021[4].

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Shoppers are willing to share their data to receive personalized recommendations and exclusive deals so, consequently data monetization is going to increase in a near future

Increasing use of data and analytics

According to a study by *McKinsey* (2015) food retailers can improve their operating margins by up to 60% simply by harnessing the power of Big Data[1].

There are 3 distinct types of big data that are currently widely utilized by food retailers: scan data (collected in-store when items are sold, providing numeric data on units sold, prices, time of day sold, among others); panel data (data such as the age of the shopper, number of people in the household, income levels and others); and card data (related to each shopper activity, collected through loyalty cards and/or credit cards)[1]. The data collected can then be used to personalize the offer and consequently increase the shoppers' loyalty[2], but also to predict demand and improve stock management and better match supply and demand.

According to an article by *Food Navigator*, a growth in the use of data and analytics is observable in the online sector, however, the food retail industry still 'has a long way to run[3].

Data monetization

As of 2017, researchers conducting a study at Deloitte believed that more than 80% of shoppers, by the year 2020, would barter, track or sell their private data in exchange for convenience, customization or savings.[1]

Additionally, according to Statista, in 2020, in the retail sector, 19% of companies would quantify the value of data in their own accounting systems, while 36% monetized data assets and insights through products and services.[2]

In line with its increasing value, companies are starting to create a new revenue stream by selling their data. Examples of food retailers doing that are Target and Kroger, which are using their data to create personalized add campaigns for brands and agencies that can then run on their websites. [3]

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A positive economic growth is expected since the country is recovering from the pandemic. However, active population in Portugal is decreasing and this might imply labor shortage

Economic and private consumption growth

In Portugal, COVID-19 and the restrictive measures applied by the government resulted in a contraction of private consumption of 5% in 2020 (annual variation), where in 2018 and 2019 there was an annual positive variation of 4,2% and 3,6% respectively. Nominal GDP also had negative annual variation 5,3%[1].

The Portuguese minister of Finance João Leão forecasts economic grown in 2021 to be 4,5% of the previous year GDP or higher[2].

Labor shortage

Portugal is aging rapidly and, if the trend continues, the country will lose 40% of the active population (able to work) by 2070[3].

One in every five Portuguese people is over the age of 65, which means that there are currently only three active people for every one over the age of 65. This ratio is predicted to be cut in half by 2070 (from 3 to 1.5 people for each individual over 65)[3].

2020 was the year in which there was the greatest shortage of talent in the last decade[5]. 60% of organizations acknowledge to having difficulty recruiting suitable people (a 3% increase from 2019 and an 11% increase from 2018)[4&5].

It appears that there is an increasingly scarcity of talent in the country, as just 35% of businesses reported having this issue in 2016[4].

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Purchase decisions are very dependent on discounts and, with the economic effects of COVID-19, shoppers may decide depending on price. Retailers are increasing purchases from local producers

Increasing polarization of demand

Portugal is the leader in terms of promotional dependency. Portuguese shoppers buy at least one item with a promotion, 60% of the time they go shopping. Portugal is also one of the countries where private-label brands have grown the greatest, increasing by two percentage points to 40.3% of total goods sold (in 2020)[1].

As a result of the economic crisis caused by the COVID-19 pandemic, the unemployment rate is predicted to increase in 2021(8.3%), reach 7.3% of the active population in 2022, and fall in 2023 (6.7%), 2024 (6.5%), and 2025 (6.5%)[2].

Globalization of suppliers

The annual world trade growth has averaged 6% in the last 20 years, far outpacing the world's output of 3%, during the same period [3].

Additionally, when compared to the past decade, studies show that data flows across countries 45 times faster. Moreover, these data flows have significantly more impact than the flow of manufactured goods registered before [3].

This easy and fast connection between countries, allowed, for example, *Lidl* to support Portuguese producers by exporting their products, thus internationalizing Portuguese products to be commercialized in *Lidl*'s international store network. These have amounted to 228 products to 27 European countries resulting in 150M€ exported in 2019.

Despite this, with the COVID-19 pandemic, there has been an increasing bet in local products, as those were most hit by the health crisis [4].

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Resources scarcity and the increase in prices and restrictions on quantities are concerning the industry and the population. One of the consequences are food waste reduction strategies.

Decreasing food waste

Regarding world wide data, it is estimated that roughly a third of the world's food is wasted, which represents approximately 1.3 billion tons of food a year. The UN estimates the direct economic consequences of food waste to be $750 billion a year [1].

Current figures point to 88 million tonnes of food waste per year in Europe and about one million in Portugal (data collected in 2020) [2&3].

For Portugal, studies indicate that in food retail, distribution is responsible for 5% of the total food waste and consumers at home are responsible for 42% [4].

Several food retailers in Portugal already have partnerships with non-profit organizations, such as *Refood* and proceed with donations to charity institutions. Some also provide discounts and identify products with special labels (*Aldi*, *Lidl*) when products are close to expiration date [5].

Continente, for example, also created the initiative Zer0% in which it creates daily 5 kg boxes with fruits and vegetables that are close to surpassing the optimum point of consumption and sells it cheaper [6].

Resources scarcity

According to a study conducted by *PwC*[1], the demand for natural resources will increase drastically by 2030 when compared to 2016. A growing global population is expected to demand 35% more food, that includes vegetable oils, dairy, meat, fish and sugar. The production of these goods will also imply an increase in demand for water and electricity. Globally, demand for water will increase by 40% and for energy by 50% by 2030. Climate change amplify the consequences of the increase in demand since, as an example, it has the potential to reduce agricultural productivity by up to a third across large parts of Africa over the next 60 years.

In Portugal, regarding water availability, a study by the UN called "*Water Exploitation Index*" defends the situation is not problematic, however, an analysis by the *World Resources Institute* with 2040 as time horizon, identified Portugal as "high risk" country for hydraulic stress, meaning the consumption of water is between 40% and 80% of the average annual availability of the country and therefore, measures should be implemented to prevent the situation from escalating and to use this resource more efficiently[2].

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Greenhouse gases emissions and plastic pollution have social, environmental and economic negative impacts, therefore its reduction should be a priority for food retailers
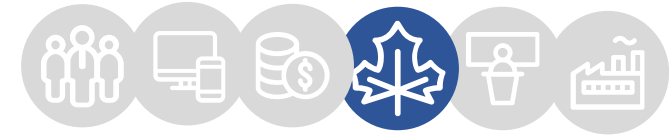
Growth of climate change impacts

Climate change consequences are getting more severe for the population, so actions are required to slow it down and try to reverse its impacts. The food sector plays a critical role in climate change, being responsible for about 25% of worldwide greenhouse gas emissions, for the usage of 50% of the world's arable land and for the consumption of a great proportion of the world's freshwater[1]. The main responsible are the production and transportation of livestock, crops, and food, nevertheless, the average grocery store emits 1,383 metric tonnes of CO_2 per year from energy consumption and another 1,556 metric tonnes of CO_2 from leaked refrigerants[2].

Fighting against plastic pollution

In Portugal, plastic makes up 72% of waste on Portuguese beaches[3]. Plastics can take from 20 years to 500 years to decompose [4]. From 2009 to 2016 the recycling rate of packaging waste was around 60%[5], and there are plastic products that cannot be recycled, such as straws or coffee cups [6].

Among other companies, food retailers operating in Portugal, such as *Jerónimo Martins, Lidl* and *Sonae* signed the "Pacto Português para os Plásticos", promising to reduce single use plastics and with defined objectives to be achieved by 2025[7]. Food retailers already implemented strategies to reduce plastic pollution: *Lidl* compromised in 2021 to reduce in 20% the plastic consumed and to use plastic 100% recycled in products of private label, to achieve until 2025[8]. *Jerónimo Martins* uses recycled plastic in the majority of its private label and card/ paper already represents 60% of materials used[9]. It also already uses reusable containers to transport products from its warehouses[9]. Additional strategies need to be implemented.

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Businesses are concerned about the emergence of new regulation and taxes and one of the areas of intervention may be the single-use of plastic since it is causing many environmental and social issues

Regulatory landscape

According to 5,050 CEOs around the world surveyed by PwC, the top ten concerns about potential threats to an organization's growth prospects are over-regulation (42%), tax policy uncertainty (31%) and increasing tax obligation (30%)[1].

Because unprecedented fiscal deficits are driving many governments to raise product taxes, it is critical to know whether Portugal has a fiscal deficit. The International Monetary Fund anticipates that Portugal will close 2021 with a deficit of 5% of GDP and a public debt of 131.4% of GDP. The perspective is that the trajectory of improvement in public finances only starts in 2022 with the deficit falling to 1.9% of GDP and public debt to 125.6%. The economic recovery will allow the deficit to continue to improve to 1.4% in 2023. In the following year, Portugal will again regenerate a surplus, with 0.5% of GDP, followed by a surplus of 0.3% of GDP both in 2025 as in 2026[2].

Banning single—use plastic

Between 1960 and 2014, plastic production increased 20 times, from 15 million tons to 311 million. Furthermore, it is expected that, by 2050, there will be more plastic in the oceans than fish[3].

Currently, 400 million tons of plastic are manufactured annually and food producers and retailers are responsible for a considerable part of this number[4]. Besides, half of the plastic produced (200 million tons of plastic) is used to produce single-use plastics (SUPs)[5].

In the European Union, 80% to 85% of marine litter is plastic, with SUPs accounting for 50%[6].

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Emissions on CO_2 by common used refrigerants and the health of the Portuguese population are two themes raising concerns and therefore further regulation may be implemented

Increasing regulations of products' storage

It is estimated that, on average, 25% of refrigerants of food retailer systems leak. Although the existence of an alarm, often the level of leakage do not trigger it and so refrigerants are not repaired. As a consequence, around 400 kilograms of HFCs are released in a typical American supermarket each year[1].

Analysis have shown that preventing leaks or replacing the refrigerants could eliminate more than 100 billion tonnes of CO2 equivalent emissions by 2050. This is why "preventing refrigerant pollution is one of the single most effective actions one can take against global warming"[1].

Increasing regulations of products

The numbers regarding obesity are worrying and that is why some actions need to be made. One can say that Europe faces an 'obesity epidemic' as obesity rates almost tripled in 40 years. As obesity comes with a series of other health complications it can be fatal, raising governments' concerns. 44% of type 2 diabetes cases and 23% of heart diseases are attributed to being overweight or obese. Also, from 7% to 41% of cancers, depending on the area of the body, are attributed to this condition, which results in the death of at least 2.8 million people each year. "Being overweight or obese is, therefore, recognized as being the fifth leading cause of death, according to the WHO"[2].

Portugal ranks fourth among the *OECD* countries with the most obese population. Besides, according to the latest *Health at a Glance* report, 67.6% of Portuguese population over 15 years of age is overweight or obese[3].

In April 2021 the European Parliament called for a better treatment and management of obesity and new legislation will tend to appear in the future[2].

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Regulations will continue to be implemented regarding payments and data protection

Increasing regulations of payments

Between 2011 and 2020, global losses due to payment fraud tripled from $9.84 Billion to $32.39[1]. Furthermore, it is expected that in 2027 these losses will be 25% higher than in 2020[1]. Global losses will continue to increase however at a lower growth rate.

Furthermore, despite the high volatility of the market, the cryptocurrency market capitalization is clearly registering a high increase[2] which was accentuated since the last quarter of 2021. Meaning, regulations are expected to increase and some policies adapted [3].

Total Cryptocurrency Market Capitalization [2]

Increasing regulations of data privacy

In 1995, Europe created the *European Data Protection Directive* stablishing "minimum data privacy and security standards", which was differently implemented between members. Later in 1994, with the rise of internet, the first online banner add appeared. In 2011, a *Google* user sued it for accessing his emails. Two months after that, Europe decided that "a comprehensive approach on personal data protection" was needed, creating the *General Data Protection Regulation* (GDPR) [4].

The GDPR was launched in 2016 and in 2018 all organizations had to comply with it [4].

When new threats and concerns emerge, new regulations will be created and put in place.

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Food retailers can complement the shopping experience in store by offering a dining space. To increase efficiency, supply chains are becoming more complex and controlled with technology

Combining shopping and eating

In the UK, *Waitrose* has already rolled out restaurants in selected branches, where customers can sample special menus developed by local chefs that only use products that can be found in store [1].

In Portugal, *Pingo Doce* already has restaurants in at least 37 of its 471 stores (data of 2019). These restaurants offer a varied menu of dishes, side dishes, grilled dishes, pastas, pizzas, salads and desserts, ready to be eaten at the time [2].

Continente, in 2021 offers prepared meals for takeaway and a partnership with Uber Eats[3] and owns the *BAGGA* cafeteria, however still does not offer a space in-store for customers to dine.

Evolving supply chain

The food supply chain is being reinvented in several different ways.

One example of this is *Mercadona*. Differently from the other companies, *Mercadona* offers the transportation, the pallets and boxes to the suppliers to transport the products to the stores. Another example, is the case a refrigerator breaks down, the company assumes the responsibility. This is in line with their desire to stablish a close relationship based on trust with its suppliers[3].

Furthermore, *Auchan* has introduced "collection points" in 25 stores across Portugal for their local producers to sell the products directly to the customer, in order to create a sense of community and cooperation.[4]

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Brands may be at risk if smart technology is responsible for the grocery shopping. Also, D2C allows better customization of product offerings and cost savings by eliminating the need for an intermediary

Disintermediation of brands

According to *Thought Works* the percentage of time that customers use branded prefixes in their search terms is declining[1], which means, for example, that brands will not be taken into account by the voice assistant when choosing which product to buy.

According to data by *Google/Peerless Insights*, relative to the US until August 2017, considering *Amazon Echo/Dot* and *Google Home*: "*62% of those who regularly use a voice-activated speaker say they are likely to buy something through their voice-activated speaker in the next month*" & "*44% of those who regularly use a voice-activated speaker say they order products they need like groceries, household items, etc, at least once a week*"[2], demonstrating that in the US voice shopping can already be considered common practice.

Increase of Direct to Consumer (D2C)

The D2C industry has been rapidly expanding and it was expected to grow by 19.2% in 2021[3].

According to the Direct to Consumer Purchase Intent Index, more than 80% of end consumers are expected to make at least one purchase from a D2C brand in the next 5 years[3].

43% of Americans are familiar with D2C brands and 44% believe D2C brands deliver a higher quality product at a lower price point than traditional competitors[4].

More than half of consumers prefer to buy directly from brands rather than multi-brand retailers and 50% of consumers prefer to browse brand websites (rather than retailer websites) because they provide more in-depth information[5].

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The rivalry among food retail chains will increase due to lack of loyalty and high bargaining power of customers. This increase represents a threat to profitability rates of retailers

High competitive pressure

According to *Nielsen*, 64% of Portuguese families shop in more than four brands. In 2019, only 11% of Portuguese choose only two brands, with an even lower number referring to shoppers who exclusively use one brand. *Nielsen* also indicates that 22% buys in three brands, 35% in four and 29% even reaches five. The market research company considers that data such as these prove the "high competitiveness of national retail" [1].

Pressure on profitability

The president of Centromarca, Nuno Fernandes Thomaz, said in an interview with the *Jornal de Negócios* that the margins will be narrower since the suppliers have been suffering from significant inflation of raw materials and with the increase in the price of the packaging and transport costs[1].

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With vertical integration, food retailers can increase and improve their products, like *Jerónimo Martins* did by acquiring *Serraleite* and *Sonae SGPS* by acquiring *Gosh Food*

Vertical integration

The number of deals regarding the acquisition of suppliers by European grocers there was an increase of 133% from 2016 (6 deals) to 2017 (14) [1]. It this value has been increasing.

In the US, there have been many cases of companies moving up the supply chain: *Kroger* vertically integrates dairy products. As of 2018, it produced 40% of its private label milk in-house [2]. *Walmart* expands to the meat category, by creating its own supply chain for Angus beef [3].

In 2015, the *Jerónimo Martins* group acquired a factory to the agricultural company *Serraleite*[4]. This resulted in the expansion and support in the category of dairy products.

A recent example of vertical integration in Portugal occurred in September 2019 where the Portuguese group *Sonae SGPS* acquired a British company, *Gosh Food*, that specializes in the production and commercialization of food products of plant origin[5]. This acquisition, done through a subsidiary, *Sonae Food4Future*, was done in order to diversify and expand into the vegetarian/vegan product categories.

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3.1

Pre-Determined & Uncertainties

| Justification on uncertainty and impact levels of identified trends
|Additional informational regarding the critical uncertainties and the respective extremes

To create the uncertainty matrix, the drivers of change were classified according to uncertainty and impact level. The justification for the classifications can be found below (1/5)

Scale:

[0-2]	Low
]2-4]	Medium-low
]4-6]	Medium
]6-8]	Medium-High
]8-10]	High

MEGATREND	UNCERTAINTY	UNCERTAINTY LEVEL	IMPACT LEVEL	UNCERTAINTY	IMPACT
Decreasing population in Portugal	Populational Variation	There has a been a tendency for the Portuguese population to decrease. Despite the negative trend, migration balance is difficult to predict and depends on external factors to the country, making harder to predict the population variation in following years and in the long term, therefore the uncertainty of this trend is medium-low.	A variation in populational size might impact sales and therefore net income, however as relative variation is not significant, and movements in consecutive years may balance each other, the impact of this trend is low.	4	2
Aging population in Portugal	Aging Population	As the fertility rate is lower than the death rate in Portugal and the life expectancy is increasing, it is very likely that the percentage of older people over the total population will continue to increase. Only a migratory balance of young people could change this tendency. Therefore the uncertainty is low.	An aged population may impose restrictions on technologies implementation, and therefore not contribute to an increase in sales and/or cause a loss of a segment of clients in case the technologies are implemented. Knowing technology implementation requires investment, the impact on balance would be even more evident. Consequently, the impact is medium.	2	5,5
Increase of generational gap	Size of generational gap	The uncertainty level is low because the population evolution trends show that the gap between elderly and young generations is increasing steadily. The new generations have different needs and preferences when compared to older generations, where the majority of people will not accept and adhere to new technologies, highlighting the gap between generations.	The impact is medium, because similarly to the trend considering aged population, the existence of differences between generations will imply that the companies will have to considered both groups' demands and preferences in order not to lose a segment. This will imply some restrictions to full automation and to e-commerce, which nevertheless will have to be implemented to comply with younger tech-savvy generations. This implies an impact in food retailers business models and balance sheet.	2	6
Increasing desire for convenience	Desire for convenience evolution	There is a clear tendency for convenience, with companies shifting to proximity stores and buyers shopping more frequently and lower quantities. Companies will continue to steadily invest in proximity stores with a wide variety of product. Furthermore, the proportion of sales that will be conducted through online channels is increasing, which also represents a pursue for convenience. Although there is an uncertainty on the degree of adoption of e-commerce, both channels represent the main future preferences of shoppers therefore the uncertainty is low.	With the increase in desire for convenience, companies will have to continue to invest in proximity stores, continuing to provide a wide variety of products, therefore high investments will be required to be made. The impact of this trend will be observed on the business models and balance sheet of food retailers and it will be relevant, being assessed as medium-high (8).	1	8
Increasing time availability and Homeworking	Time availability/Homeworking	The uncertainty was considered to be medium-high because the evolution of the homeworking when compared to working from the office is not clear. It is still not possible to predict if it will be equality split, majority homeworking or majority working from the office. Additionally, several lines of work such as 1st line jobs and customer service do not allow homeworking, therefore in the time horizon considered, there is considerable uncertainty in the velocity of the trend, even though its tendency is for an increase in homeworking and more time availability.	The impact was assessed as medium-low because the impact will be mostly in the consumers preference for e-commerce vs shopping in a physical store which might impact food retailers business model while adapting to these preferences. No other impact was considered relevant.	6,5	3
Transforming shopping in an experience	In-store shopping as an experience	Food retailers want to differentiate and attract customers by offering them experiences in store, however, in case online shopping becomes the main sales channel, there will be no return to providing these in store experiences. As it not possible to predict with certainty if in-store experiences will continue to increase or actually decrease as physical stores are no longer a priority, the uncertainty of this trend is medium-high.	In-store experiences are meant to increase sales and attract more customers, impacting net income and market share in case there is more differentiation between companies. At the same time, investments are required in order to provide these experiences impacting the balance sheet. On another hand, turning the grocery shopping into an experience instead of just a transaction implies a change in the business model. For all the reasons above, this trend was assessed as medium-high impact.	6,5	7,5
Increasing awareness of climate changes	Shopper attitude towards climate changes	There is a clear and stable tendency for products, processes and choice of suppliers with a lower negative impact in the environment, therefore the uncertainty regarding direction and velocity of this trend is low.	In order to reduce climate changes and negative environment impacts, the companies have to do investments in finding and applying more sustainable solutions in suppliers for example for plastic products, or to implement technologies which will inform the client of products carbon print, which will impact the companies' balance sheet, therefore the impact was considered to be medium-high.	2	7
Increasing health awareness	Shopper attitude towards health issues	Uncertainty of this trend is medium because some studies point to an increase in the consumption of healthier products, but others defend the increase will not be significant due to the products higher prices, low convenience and perceived worst flavour, making both directions of this trend plausible. Nevertheless an increase is more likely, reducing uncertainty to medium.	The impact is medium because a shift in the products demanded will require food retailers to adapt their business model, suppliers, products presented in store and others, impacting as well the companies' balance sheet. In case these products represent a higher or lower margin when compared to products not considered as healthy, the companies' net income may also be impacted.	6	5

To create the uncertainty matrix, the drivers of change were classified according to uncertainty and impact level. The justification for the classifications can be found below (2/5)

Scale:
[0-2] Low
]2-4] Medium-low
]4-6] Medium
]6-8] Medium-High
]8-10] High

MEGATREND	UNCERTAINTY	UNCERTAINTY LEVEL	IMPACT LEVEL	UNCERTAINTY	IMPACT
Increasing Customization	Degree of Customization	The uncertainty level of this trend is medium because despite consumers' increase desire for customization, their willingness to share their data and regulations on data protection may jeopardize this customization and therefore it is not certain to predict the level and velocity of which customization will happen until 2030.	The impact is medium-high because customized offers for each client can increase sales and therefore net income, there is a need for an adaptation of the business model as offer would be completely focused on client's specific needs and preferences and if only one or some of the food retailers offer customization, this might result in an increase in its/their market share(s).	6	7
Decreasing Loyalty	Loyalty level evolution	The uncertainty level is low because customer loyalty is low despite loyalty programs, and Portuguese shoppers tend to shop in several food retail chains. Unless there is a revolutionary change in loyalty programs it is not likely that customer loyalty will increase.	The impact is medium because in case loyalty to one specific food retailer increases or decreases drastically when compared to the others, it will affect the companies balance and market share, however, when compared to the impact of other megatrends, this impact is not as considerable.	2	5,5
Increasing e-commerce	Shoppers' E-commerce usage	E-commerce is increasing, however financial constraints, consumers' preferences or portion of the Portuguese population that are not willing to buy online, may pose limitations to a higher proportion of sales done true electronic platforms. As it is not possible to predict with certainty, in Portugal, in the time horizon considered, if the proportion of sales done through e-commerce will be high or low, but still following an increasing tendency, the uncertainty of this trend is medium-high.	Impact of e-commerce is medium-high because it might increase net income, as well as enable the collection of customer data that enables customization of offer and might enable the increase in margins. If the proportion of sales done online increases significantly, the business model of the companies will also have to be adapted and it might imply a significant reduction in the number and area of physical stores and associated costs, impacting the balance sheet as well. For all the reasons considered above, the impact of this trend was classified as medium-high.	7	7,5
Demand for an omnichannel experience	Omnichannel adoption level	The uncertainty of this trend is medium-low because there is a constant and continuous increase in the integration and coherence between the companies several channels, as customers are demanding, however its velocity is not completely certain. The uncertainty was considered 3/10 as it will depend on the financial capability and investment to achieve the omnichannel level of implementation, nevertheless it will likely continue to increase at a stable rate.	Omnichannel experience will mostly improve the shopper experience and increase his/her satisfaction. Additionally, it might result in a sales increase, but the impact in the company in the business model, balance and market power will not be very significant, therefore the impact was considered medium.	3	5,5
Increasing automation of supply chain	Degree of automation of supply chain	There has been a clear constant increase in automation of the supply chain, nevertheless it may depend slightly in investment capabilities and technology development. Overall, the uncertainty of this trend was assessed as medium-low.	Automation of the supply chain, will enable more effective processes and decrease costs and labor requirements, increasing the companies' net income. Investment requirements will impact the companies' balance sheet. The impact was assessed as medium when compared to the other trends.	3	5
Using bots to predict shopping lists	Predictive analytics level of usage	Predictive bots require investment and availability of data, therefore, their developments and usage is not certain. Thus, the uncertainty level was considered medium.	Impact was considered medium because predictive bots may enable an improvement in stock management and cost reductions, however the impact and changes in customer experience and sales are highly dependent on privacy regulations and may not be huge.	4,5	4,5
Introduction of digital technologies in-store	Digital technologies in-store usage	In case e-commerce becomes the main sales channel, there is no high return in investing in in-store technologies, if physical stores remain an important sales channel, it is highly relevant to improve in-store experience and increase convenience and easiness to shop in store, therefore food retailers should invest highly in these technologies. Knowing that e-commerce adoption level is uncertain, then, investment in this technologies is also uncertain, being assessed as medium-high.	Technologies in-store require high investment and may differentiate food retail chains influencing market power and sales. Consequently, the impact of this trend is high.	7	7
Increasing innovations in payment methods	Innovations in payment methods	Uncertainty was assessed as medium-low because innovative payment methods have been developed and implemented, with a clear tendency for them to continue to being developed. The uncertainty level was small but existent due to the possibility of no relevant innovations to appear.	New and more convenient payment methods may increase sales, require an adaptation of the business model and require investment, impacting the balance sheet, consequently, the impact level was considered medium-high	3	6,5
Increasing use of sensors in food retailers' stores	Sensors in store usage evolution	The uncertainty was assessed as medium-low because these type of technologies are already starting to be studied and implemented; however, it requires an adaption from the population and it is not certain in which time horizon they will be in place across several retail chains and in a considerable scale.	The impact was assessed as medium because these technologies will have an impact in the companies' costs, but also require a high investment.	3,5	6

To create the uncertainty matrix, the drivers of change were classified according to uncertainty and impact level. The justification for the classifications can be found below (3/5)

Scale: [0-2] Low
]2-4] Medium-low
]4-6] Medium
]6-8] Medium-High
]8-10] High

MEGATREND	UNCERTAINTY	UNCERTAINTY LEVEL	IMPACT LEVEL	UNCERTAINTY	IMPACT
Implementation of 5G	Level of 5G usage	The uncertainty level was assessed as low as 5G is already expected to be implemented in Portugal, with the only uncertainty if it will reach all locations.	The impact was assessed as medium-high because the implementation of 5G will enable and potentiate other technologies such as the development of customized advertisements to an individual, automations in-store and in the supply chain.	2	7,5
Increasing use of data and analytics	Level of collection and analysis of data	The uncertainty level of this trend is medium-high because its direction and velocity depends on external factors such as regulatory pressures regarding use of data and right to privacy as well as the financial capability for a company to collect, analyze and store customers' data, therefore it not possible to predict if data will be highly used or if companies will not be able to use it to their advantage.	A significant increase in collection and analysis of data will enable food retailers to offer personalized products, promotions and highlights to the buyers, according to their preferences and historic searches. This will impact sales and the business model of food retailers, simultaneously, gathering, analyzing and storing this data will require considerable investment that will be reflected in the companies' balance sheet.	8	7
Data monetization	Data monetization evolution	The data monetization is related to the creation of monetary value by collecting and using the data. As mentioned above, the uncertainty level was considered medium-high because its direction and velocity might be influenced by regulatory pressures.	The impact was assessed as medium-high since data collection and usage require investment and might impact significantly the profitability and market power.	8	7
Increasing polarization of demand	Polarization level of demand	The uncertainty is medium-low because this trend has been observed in the past years, however, its velocity may be variable depending on many external factors.	The impact was assessed as medium because the polarization of demand might translate to a significant increase in sales of private label products. These products tend to have lower prices, impacting the food retail chains' market power and net income.	3,5	5,5
Globalization of suppliers	Globalization level of suppliers	The uncertainty was evaluated as medium-high because the direction might be towards local suppliers due to COVID-19 transportation restrictions, local support awareness and ambition to reduce CO2 emissions and pollution caused by transportation. Alternatively, the direction might be towards global suppliers because, despite environmental concerns, consumers demand product variety and goods unavailable locally.	The impact was also assessed as medium-high because a shift in suppliers might imply adjustments in the business model and a reduction or increase in costs and product margins, therefore impacting the company's balance sheet.	6,5	6
Economic and private consumption growth	Economic evolution	The uncertainty level was assessed as medium-low because the economy is expected to start recovering post-pandemic, supported by the recovery plans implemented by the government. Nevertheless, some factors might endanger or low-down this recovery.	The impact was assessed as medium-low, because economic recovery and growth will impact food retailer sales and therefore their net income, but not significantly when compared to the impacts of other trends.	2,5	3
Labor shortage	Availability of labor force	The uncertainty is low because there is a clear and constant decrease in the Portuguese active population, with a steady emigration rate. Unless there is an abnormal positive migration balance, it is not likely that the availability of the labor force will increase.	The impact was evaluated as medium-low because, with a labor shortage, retailers will have to provide higher salaries and better benefits to their employees, affecting their costs and bottom-line.	2	4
Decrease of food waste	Level of food waste	There is a clear tendency for food retailers to implement strategies to reduce food waste in line with several perspectives (economic, social,...), however they need to abide by regulations, thus uncertainty level is low but not null.	Reducing food waste through discounts or partnerships might increase net income, however the business model, balance sheet and market power are not likely to be significantly impacted, therefore the impact of this trend was assessed as medium-low	2	3
Resource scarcity	Level of resources availability	According to studies, it is likely that by 2040 Portugal will have water shortage problems, and therefore, it is likely that up to 2030 the problematic will increase continuous. For this reason, there is low uncertainty of the direction of this trend, However, the velocity has some uncertainty, because it will depend on the strategies implemented and in the consequential increase efficiency in water usage.	Low resources availability might impact prices of the products, retailer's margins and result in stock-out shortage. Consequently, this may result in decrease in sales. For these reasons, the impact of this trend is not neglectable, but when compared to the impact of other trends it is not as high, and therefore, it was assessed as medium.	3,5	4,5
Growth of climate change impacts	Climate change impacts	The uncertainty was assessed as medium-low because climate changes have been steadily increasing. However, behavioural changes and environmental regulations might reduce its increase rate.	Similarly, to the other trends related to climate change and plastic pollution, the impact is medium-high because, to reduce climate changes and negative environmental impacts, the retail food chains have to make investments in finding and using more sustainable solutions, which will impact the companies' balance sheet.	3,5	7
Fighting against plastic pollution	Usage of single-use plastic	The uncertainty is medium-low because there is an evident and constant trend to reduce the use of single-use plastic, which will not be likely to change unless due to investment costs.	The impact was considered to be medium-high because, similarly to the trend related to climate changes, in order to reduce plastic pollution and usage, retailers have to make investments in finding and implementing more sustainable materials, which will impact the companies' balance.	3	7,5

To create the uncertainty matrix, the drivers of change were classified according to uncertainty and impact level. The justification for the classifications can be found below (4/5)

Scale: [0-2] Low
]2-4] Medium-low
]4-6] Medium
]6-8] Medium-High
]8-10] High

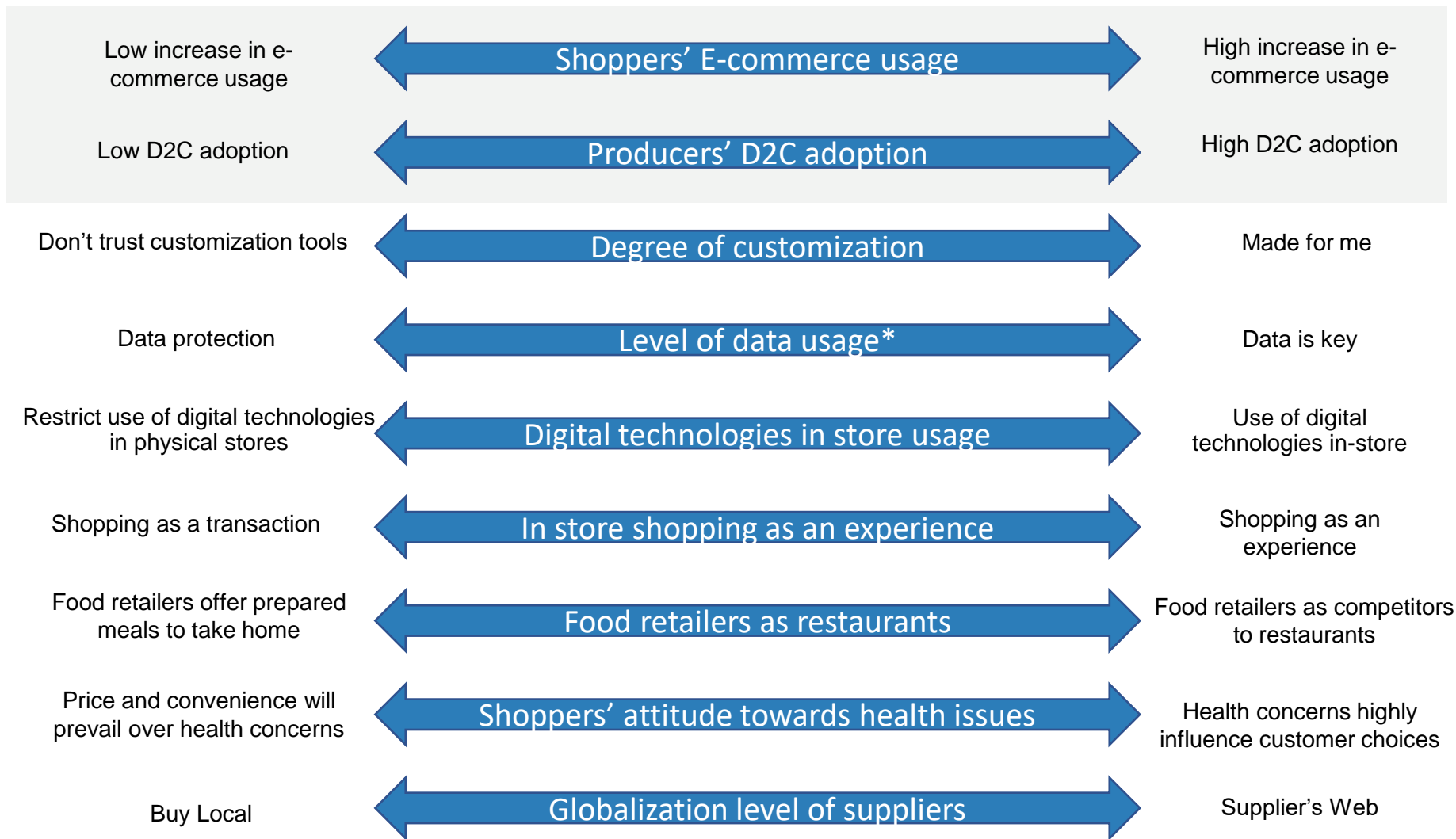| MEGATREND	UNCERTAINTY	UNCERTAINTY LEVEL	IMPACT LEVEL	UNCERTAINTY	IMPACT
Regulatory landscape	Evolution of regulatory landscape	The uncertainty level was evaluated as low because concerns and regulations continue to increase at a low velocity and regular rate.	The impact level was considered medium-low because regulations might require some business model adjustments and investments that impact the balance sheet.	1,5	4
Banning single-use plastic bags	Evolution of regulations on use of plastic	Regulation in plastic usage is increasing regularly and slowly; therefore, there is low uncertainty in the direction and velocity of this tendency.	Impact is medium due to the need to invest in alternatives to comply with regulations and fines in case they are violated.	2	6
Increasing regulations of products' storage	Evolution of regulation on products' storage	Due to environmental concerns, regulation in storage tend to increase slowly and it is not a main priority concerning change; therefore, there is low uncertainty in the direction and the velocity of this trend.	The required alternative solutions and investments can impact the retailers' balance sheet and, therefore, the level of the impact of this trend was assessed as medium.	4	5,5
Increasing regulations of products	Evolution of regulation on products	Regulations in products due to health, environmental and other concerns are moderately increasing because there is a raise in people awareness concerning this subjects; therefore, there is low uncertainty in the direction and velocity of this trend.	Changes in regulations of products may require food retailers to adjust their private label products and the remaining products they offer in-store. Hence, the required investments will impact the balance sheet. For this reason, the impact was assessed as medium-low.	2	3,5
Increasing Regulations on Payments	Evolution of regulation on payments	Regulations in payment methods are continuously and gradually increasing due to the new risks related to data and cybersecurity; therefore, there is low uncertainty in the direction and velocity of this trend.	The impact was assessed as medium-low because new payment methods will improve customer experience and require a significant investment. However, they will not impact the business model or market power significantly.	2,5	3,5
Increasing regulations on data privacy	Evolution of regulation on data privacy	Regulations in data privacy and data usage are moderately increasing; consequently, there is low uncertainty in the direction and velocity of this trend.	The impact was assessed as medium because the use of data enables retailers to customize offers. Consequently, the revenues might increase, and the business model will change since it will be focused on individual needs. It also requires a significant investment, impacting the balance sheet.	3	6
Combining shopping and eating	Supermarkets as restaurants	The uncertainty of this macrotrend is medium, because it is not possible to predict if food retailers will offer high-quality restaurants or simple spaces where customers can have a quick meal, or even only offer meals to take home, making the direction of this trend uncertain. The fact that several hypermarkets and food retailers already offer some meals to be consumed in store, reduce the uncertainty level as it is not likely that this offer will disappear entirely.	Transforming spaces to have a quick meal into a service comparable to a restaurant, will require a high investment and for the business model of food retailers to be adapted, influencing the top-line as well depending on the price positioning and demand for this service, therefore the impact of this macrotrend is medium-high.	5,5	7
Evolving supply chain	Supply chain evolution	The supply chain is constantly and gradually becoming more complex and disperse. Therefore, there is low uncertainty in the direction and velocity of this trend.	Changes in the supply chain may imply a shift in the business model, require investments or reduce market power as shoppers are more disperse throughout the supply chain, thus the impact of this trend was assessed as medium.	2	4,5
Desintermediation of brands	Brands level of relevance	The velocity of this uncertainty is low in Portugal. It is not likely that disintermediation of brands will happen in Portugal in the considered time horizon (2030). Therefore, the uncertainty level of this trend is low.	If there is disintermediation of brands, private label products may gain an advantage as they are priced at a lower price range. From another perspective, if a particular brand is dominant in sales, the sales of the other brands will suffer a reduction. This will impact companies balance and bottom-line; therefore, the impact was assessed as medium.	3	5
Increase of Direct to Consumer (D2C)	Producers' D2C adoption	The uncertainty of this trend was assessed as medium-high, because this trend is already starting to appear with some companies already practicing D2C in Portugal, however it is not certain at what velocity and what percentage of sales could be done D2C in the considered time horizon, therefore the uncertainty regarding velocity is significant.	The impact is high because with its implementation, food retailers will lose part of their sales and margins, will have to adapt their business model and may lose some of their market power if not adapted or reinvented properly.	7,5	8,5

To create the uncertainty matrix, the drivers of change were classified according to uncertainty and impact level. The justification for the classifications can be found below (5/5)

Scale: [0-2] Low
]2-4] Medium-low
]4-6] Medium
]6-8] Medium-High
]8-10] High

MEGATREND	UNCERTAINTY	UNCERTAINTY LEVEL	IMPACT LEVEL	UNCERTAINTY	IMPACT
High competitive pressure	Competitive pressure	Competitive pressure in the industry is high and there is no reason to believe it will decrease. With an increase in desire for convenience and low prices, there is an increase in competitiveness and benefits offered to attract customers. For these reasons the uncertainty of this trend is low.	High competitive pressure and the strategies used to attract customers, like discounts or investment in the physical stores, may imply a high impact on the companies' balance sheet and bottom-line. Consequently, the impact of this trend was considered to be high.	2	8
High pressure on profitability	Profitability pressure	The uncertainty level of profitability pressure is medium-low because it is not likely that the pressure will decrease. Predictions point to a constant profitability pressure, and retail food chains already have low margins. However, slight variations in the preference for home cooking than other alternatives such as restaurants or cafeterias might cause a variation in profitability.	Pressure on profitability impacts companies' balance and income significantly; therefore, the impact of this trend was assessed as medium-high.	3	7,5
Vertical integration	Vertical integration evolution	Vertical integration results mainly from the desire of having a diverse and considerable private label portfolio. Regarding the velocity of this trend, integration is a complex business strategy and, for this reason, it is a trend that is evolving slowly. Hence, its uncertainty level is low.	Vertical integration is a costly process with demanding initial capital and it can impact the P&L concerning cost management efficiency. Moreover, it allows the retailers to get better control over the quality of products. For these reasons, the impact was assessed as medium-high.	2,5	6,5

After the identification of the critical uncertainties, the respective axis continuums and extremes were analysed

Low increase in e-commerce usage	← **Shoppers' E-commerce usage** →	High increase in e-commerce usage
Low D2C adoption	← **Producers' D2C adoption** →	High D2C adoption

When considering the several combinations of critical uncertainties these where the ones that elicit the most relevant narrative, and therefore were the ones used as axes of the scenarios.

Don't trust customization tools	← **Degree of customization** →	Made for me
Data protection	← **Level of data usage*** →	Data is key
Restrict use of digital technologies in physical stores	← **Digital technologies in store usage** →	Use of digital technologies in-store
Shopping as a transaction	← **In store shopping as an experience** →	Shopping as an experience
Food retailers offer prepared meals to take home	← **Food retailers as restaurants** →	Food retailers as competitors to restaurants
Price and convenience will prevail over health concerns	← **Shoppers' attitude towards health issues** →	Health concerns highly influence customer choices
Buy Local	← **Globalization level of suppliers** →	Supplier's Web

*Since the critical uncertainties *Level of collection and analysis of data* and *Data monetization evolution* are correlated and not independent, they were joined in a unique critical uncertainty named *Level of data usage*.

To improve the shopping experience, the use of data will allow the customization of offer

Degree for customization

Don't trust customization tools
- Customization for shoppers is usually obtained by either them making changes to the design or characteristics of a products or by adapting the offer and suggestions made to each buyer. The use of data that together with AI softwares, predicts the shopper behavior, may be a propeller of customization.[2]
- In the food retail industry, customization is more commonly obtained by using data.
- However, nowadays, with the **increasing regulations around data usage, barriers are rising**.
- Shoppers and regulators are more concerned about how companies use sensitive data, therefore an **important factor for food retailers to consider is the safety of the systems used to store and share that data**[1].
- Currently, **many systems are still underdeveloped**, further **delaying the demand for data-based customization and decreasing shoppers' trust in these systems**[1].

Made for me
- In the food retail industry, customization can be represented in many ways, for instance, through **meal kit services** that can be created to be tailored to shoppers' needs.
- Meal kit services have had a rapid boom, and it is forecasted to globally grow by **24.14 billion USD by 2027, representing an increase of more than double the value of 2020**[2].
- There is still a gap in the ability to personalize food recommendations and the promotions by the food retailers, but it is decreasing[3].
    - As of 2017, **35% of Amazon's total product sales were generated by personalized recommendations from AI technology**.
    - In the US, software company *Kibo* helps retailers personalize the shopping experience through clickstream data of individual shoppers[3].
- Nowadays, the largest player with potential to innovate customization in this industry is Amazon, through its innovative business model Amazon Go[3].
    - **60% of US adults would like to have an Amazon Go store in their area, highlighting demand**[4].

Level of data usage

Data Protection
- The **regulations imposed on data are increasing and control the type of data that is safe for companies to have access to, and how they can use that data**.
- Additionally, with limitations being imposed on the integrity and confidentiality of data, the vulnerability of certain systems have forced a step back on the use of data, this includes the food retail industry[1].
    - There are many **concerns with some *Amazon* technology used in stores**, such as the **recording of biometric data of shoppers in Amazon's cloud**.
        - At the moment, common usage of biometric data was seen on phones, as they use face recognition and fingerprint ID software.
        - However, *Amazon One* is a software that records information regarding the **fingerprint of your palm** to create your unique signature to be used as a method of payment.
        - Despite being innovative, it raises concerns regarding the safety of sensitive data and how it can be used.[5]

Data is Key
- There is a requirement to create a profile when going shopping for groceries. Every large retailer has an app that is required. In this app, basic information like your name, cellphone and email and address is saved. However, the app is able to extract what are your consumption habits and preferences, each day of the week.
- The example of *Amazon Go*[6]:
    - An innovative business model that collects data of customers as they use its app.
    - **Sensors and cameras spread around the shop that match your behavior and habits to your profile.**
    - This way, by having access to your data, the **food retail chain can create a pattern based on your choices**, thus, it becomes able to guide you through your shopping experience, even being **able to make personalized suggestions**.
- New examples of this in Portugal are the *Pingo Doce GO* store and *Continent GO*.

With the increase in e-commerce, customer experience and digital technologies in store are a possible strategy to continue to attract shoppers to physical stores

Digital technologies in-store usage

Restrict use of digital technologies in physical stores

- As new business models gain popularity, physical **stores will start to close,** and those that remain will **shift their purpose and goals**[1].
- Due to the Covid-19 pandemic, many customers are shifting to click-and-collect options and home delivery, which will most likely continue and grow in the future[2].
- Delivery could change everything about grocery shopping. It is possible that **grocery stores may serve only as pick-up and delivery hubs and not allow customers inside.**[2]
- As a result, **food retailers will not invest in new technologies** in physical stores because shoppers will not take advantage of it, it requires **high investment** and it will not provide the expected returns.

Use of digital technologies in-store

- Given the convenience of e-commerce, if physical stores are to survive, they will need to **provide shoppers new reasons to visit them**, specifically by **transforming shopping from a core activity into an enjoyable lifestyle activity**[3].
- Technological advancements enable supermarkets to evolve in ways that make food purchasing as painless as possible. Supermarkets of the future will overcome today's pain points by allowing for quick delivery, quick payment, minimal lines and digital displays with helpful information[4].
- **Disruptive technologies** such as robotics, the Internet of Things (IoT), artificial intelligence (AI), virtual reality, blockchain technology, drones and 3D printing are just a few examples of technologies that are **changing how shoppers buy and how food retailers will operate in the future**[5].

In-store shopping as an experience

Shopping as a transaction

- Due to the pandemic and the subsequent economic crisis, the Portuguese shoppers prefer the proximity stores because they can go more often and buy less at each time, as it is a way to manage their budgets better[6].
- If household income do not increase, shoppers will not choose the retail food chains because they want a convenient or beneficial experience but because of the discounts and of the **lower prices of products**[6].
- In 2019, the promotions represented 46% of purchases made, whereas, in 2011, they accounted for only 22%[6]. In 2020, there was a slight decrease in this percentage due to the lockdowns, but Portugal remains the **leader in promotional dependency**[7].
- "(the weight of promotions) continue to grow because today we have a **shopper who clearly takes part in the promotions circuit**, that is, he/she buys something here and another there, depending on the prices he/she likes most. And the proximity of the chains helps that", according to General Director of *Centromarca*[6].

Shopping as an experience

- The grocery store of the future will be influenced by technological advancements and will be more focused on the customer experience[2].
- Customers will choose the store not because of the products but because it provides a **convenient or beneficial experience**. Instead of simply purchasing food, food retailers' stores will be a place where people can learn about it and enjoy it in new ways. This means that retailers will provide cooking classes, wine tastings, restaurants and the possibility to relax while the shopping is being done for them[2].
- **Younger generations value the experience far more than the products or the price.** They are more likely to spend money on a memorable experience than on material goods[2].

Price and convenience may influence health decisions. Food retailers' meals offer could evolve to restaurants

Shoppers' attitude towards health issues

Price and convenience will prevail over health concerns
- Besides the several campaigns warning for the risks of unhealthy eating habits, there is a gap between knowledge and action due to several factors:[2]
  - Price: In 2019, **70% of Portuguese consider that healthy and sustainable products are too expensive, and only 15% are willing to pay more** in order to consume these products[1].
  - Availability: During the daily routine, it is **easier and quick to cook and eat fast food**[2].
  - Socialization: More common in young people, they tend to make unhealthier choices since, many times, they are more socially accepted, for example, to prefer a regular bread rather than an integral bread in a burger[2].
  - Taste: On peoples' minds, fast food is **perceived as tastier** despite the several amazing healthy options available nowadays. Besides it provides **a feeling of pleasure and satisfaction** different from healthy food[2].

Health concerns highly influence customer choices
- Portuguese are **willing to pay more, at least for products that do not contain artificial additions**[3].
- **Restaurants** with the fast-food label are **incorporating healthier and vegetarian solutions** onto their menu, like soups, salads and fruits, which shows an increasing trend related to the increase of availability of healthy products[2].
- In a study conducted in 2021, **11% of participants revealed to have increased the consumption of processed and fast food. However, 17% said that they decreased their consumption**[4].

Food retailers as restaurants

Food retailers offer prepared meals to take home
- Food retailers already offer convenience to customers by **offering prepared meals to take home**[5&6], or offer a small section of their store where customers can eat **quick meals before or after shopping**[7].
- As food retailers lack market knowledge, skilled employees, equipment and brand equity in the restaurant/food services industry[8], they might decide not to enter this industry and directly compete with restaurants.

Food retailers as competitors to restaurants
- With shopping transforming into an experience, just offering quick meals and meals to take home is no longer enough to attract customers. **Food retailers' stores will offer a comparable experience as a restaurant**, where meals would be prepared by renowned chefs, using ingredients available and chosen in the respective grocery store. Customers could also go to learn new recipes and buy the required ingredients[9].

COVID-19 has highlighted a rising demand for buying national products, however there has been an increasing interest for international products

Globalization level of suppliers	
Buy Local	*Supplier's Web*

• During the Covid-19 pandemic, due to most borders being closed and the outbreak affecting many regions, global supply chain saw significant disruptions. For example, **there has been a recent trend towards helping small businesses**.
 	
    • Shoppers want to support local businesses.
 	
    • According to a survey, **72% of surveyed participants believe they will visit local business more often after the crisis**[1].
 	
• Moreover, with the **raising awareness for healthier products**, it is more difficult to have global suppliers due to the **requirements and characteristics of those products.**
 	
    • The shelf life of healthier product is shorter, as they do not have as many additives as processed food, therefore decreasing the ability for global suppliers to deliver these products at a lower price and in short time periods.
 	
    • Thus, at the current level of development of supply chains, **healthy products are associated with local products.**
	• The increasing circulation of goods, technology and people results in faster development and **race to deliver the best shopping experience in the world**, as barriers between countries decrease.
	
	• With shoppers' **increasing demand for products of different origins, there is also a rising demand for global suppliers**.
	
	• A clear example of this is the **growing consumption of exotic fruits**[2]:
	
	    • In European countries, import values show that there is **an increasing interest in exotic fruit varieties**. From 2015 until 2019, the value for such products increased by **40%**[2]**.**
	
	    • This number can be a result of higher prices or that more exclusive varieties are being imported.

5.1

Recommendations

| Strategic Options justifications on impact and risk

Justifications on Impact and Risk for each Strategic Options are provided below (1/3)

OPTION	JUSTIFICATION OF THE IMPACT	JUSTIFICATION OF THE RISK	IMPACT	RISK	TIME HORIZON
Re-design HR policies to avoid labor shortage	With the new technologies and automation of processes, human capital required to perform the tasks will decrease, however it is important that companies are able to retain good employees in order to provide a service of excellence.	The actions that may be implemented have low risk, as there is no need for high investment and despite the uncertainty of the results that will be obtained, the food retailers will benefit for attempting to reduce the problem of low labor availability. This strategic option is relevant for all the scenarios. For the reasons above, it should be implemented in the short-term.	Low	Low	ST
Create sustainability goals	Currently, companies and buyers are more and more aware of sustainability issues, however, it is not certain that buyers are willing to pay more for sustainable goods. Nevertheless, these strategies will improve buyers' perceptions of the companies' image and will most likely result in cost reduction. However, impacts in sales, customer experience, loyalty level and increased efficiency in supply level will most likely not be considerable.	The risk is low because this is a tendency with low uncertainty, relevant for all scenarios and that do not imply high investments or a drastic shift in operations.	Low	Low	ST
Re-locate big warehouses to strategic locations	It will decrease transportation costs and CO_2 emissions, also allowing for faster processes from the warehouse to delivery points. As the majority of current warehouses tend to already have a good location given the strategy that was in place at the moment of the establishment, the impact is not considerably high. Nevertheless, the creation of dark stores and the increase in e-commerce may have other implications for the ideal locations of warehouses.	High investment is needed to stablish the new warehouses and investigate the best locations. Due to the low impact and high risk, this strategy should not be considered for implementation.	Low	High	N/A
Increase customization in physical store	It will improve the customer experience and may result in increased sales, but the impact is most likely not significant since there are not many disruptive possible features.	Requires high investment and innovative solutions to allow personalization of offer in-store. Additionally, shoppers might be overwhelmed with all the available information. Due to the low impact and high risk of this strategy, it should not be considered for implementation.	Low	High	N/A
Increase proximity stores/hypermarket ratio	In the interviews made, it was possible to conclude that hypermarkets are losing their relevance in terms of sales and customer preferences. Contrarily, convenience stores are becoming more important. This recommendation will originate a more efficient allocation of resources and an increase in sales since proximity is the main factor when choosing a physical store in this industry. The increase of consumption in these stores will compensate the decrease in hypermarkets.	The risk is low because there is a clear tendency for shoppers' preference of convenience stores over hypermarkets and there will continue to exist hypermarkets for the shoppers that prefer them. Regarding the variety of assortment, online platforms will be able to complement the physical stores and therefore shoppers can buy online the products that did not find in the convenience stores.	Medium	Low	ST
Increase customization in website	It will improve the customer experience and sales since products and promotions will be easier to find by shoppers and according to their preferences and buying habits. It also increases loyalty because the more purchases one does in one food retailer, the more information is available for the retailer to increase the personalization of the experience.	E-commerce facilitates the collection of data and the personalization of contents and there is evidence showing that people value it and are willing to disclose their data. Customization of offer is already being done and technology is continuously being developed and improved. The only risks are investment requirements and data protection safety and regulations.	Medium	Low	ST
Further develop e-commerce platform to be user-friendly	The impact was considered to be medium since the continued development of the website and app improves customer experience and consequently, can be translated into increasing loyalty level and sales volume.	The risk was assessed as low because despite requiring a considerable investment, there is low uncertainty associated since the basis is already established and it is a demand of the customers.	Medium	Low	ST
Invest in technology in-store	The impact was considered medium because with the implementation of new technologies in-store, many pain points of the shoppers will be solved and the overall customer experience will be improved. Additionally, food retailers will be able to reduce costs with labor.	The risk was considered medium as it requires significant investment, and the retailers are unsure if the customers will accept the new technologies. Furthermore, if the retail food chains want to reverse the situation, it implies more costs.	Medium	Medium	ST

Justifications on Impact and Risk for each Strategic Options are provided below (2/3)

OPTION	JUSTIFICATION OF THE IMPACT	JUSTIFICATION OF THE RISK	IMPACT	RISK	TIME HORIZON
Provide dinning area in-store & improve takeaway	The impact is medium because this option is directly linked to a potential increase in revenues, if it is successfully implemented and accepted by shoppers. Additionally, it can improve customer experience and lead to an increase in loyalty towards a food retail chain.	The risk is considered to be medium since it implies a new area of expertise and additional investment. Furthermore, there is some uncertainty related to the acceptance of people since food retailers are, nowadays, not associated to this type of service.	Medium	Medium	MT
Automate supply chain	Automation of the supply chain will imply considerable cost reduction and increase efficiency of the supply chain. Despite impacts in sales and customers being low, the impact of this strategy for the company is considered medium.	The risk of this strategy is medium because automating the supply chain requires considerable investment, with considerable changes in operations and it would be difficult to revert in case the results obtained would not be as successful as expected.	Medium	Medium	ST
Use predictive analytics to improve stock management	The impact is medium because this technology would imply a more efficient stock management, resulting in cost reductions and a more efficient supply chain, simultaneously supportig companies to avoid stock-outs and therefore improving customer experience.	The risk of this strategy is high because these technologies are still being developed and tested and require high investments, with no data proving the return on investment.	Medium	High	LT
Refill stations to reduce single-use plastic	The impact is medium because these refill stations would improve customer experience by causing less plastic pollution and would allow customers to buy in bulk, most likely increasing the quantities bought and influencing loyalty of buyers towards companies that provide this option. After the initial investment, this strategy would also allow a cost reductions in packaging and transportation of the goods.	The risk is high, because implementing it would imply high investment and a drastic shift in operations. Additionally it is not certain that buyers would accept this change in case convenience is much more important for them than pollution and sustainability concerns.	Medium	High	MT
Re-invent hypermarkets value proposition and create new services	The impact is considered medium because the creation of new services in the hypermarkets might improve the customer experience in the physical stores. Consequently, it can increase their loyalty and the sales volume. Furthermore, by providing new services, the food retailers will differentiate themselves from their competitors.	The risk was assessed as high because to re-invent the hypermarkets value proposition and create additional services is necessary a significant investment. In addition, it is difficult to revert the decision as it would require additional expenditure. Furthermore, it is not certain that shoppers will visit the hypermarkets despite the improvements in-store since they prefer to go to proximity stores.	Medium	High	MT
Reduce carbon footprint	The impact is considered to be medium due to the increase of customer awareness towards climate changes, people value the effort of companies to decrease their impact, thus potentially resulting in accrued sales and increase in loyalty. Additionally, some regulations may also arise which can negatively impact companies that do not meet certain criteria.	The risk is considered to be high due to the large investment required to implement a supply chain that is carbon neutral (EV based transportation). Moreover, such strategic option has implications in the business model as, since most food retailers do not operate their deliveries, it would require to partner with a distribution and logistics operator that has such capacity (carbon neutral fleet). This imply the strategy would be hard to revert as these contracts are usually done for the medium or long term.	Medium	High	LT
Use drone delivery system	The impact is considered medium because these drones would serve as an alternative delivery solution which would improve the delivery time and the convenience for customers. Additionally, it reduces delivery costs and represents an ecological alternative. However, in the city, drone-deliveries are more difficult due to the lack of space and there are limitations to the products that can be transported.	The risk is considered high due to the needed investment, to acquire the technology and the equipment itself. Additionally, it impacts the business model, since it would operate as an addition to the current delivery methods being used. Moreover, it is more relevant only in the two scenarios where e-commerce sales are high.	Medium	High	LT

Justifications on Impact and Risk for each Strategic Options are provided below (3/3)

OPTION	JUSTIFICATION OF THE IMPACT	JUSTIFICATION OF THE RISK	IMPACT	RISK	TIME HORIZON
Re-segmentation of customers & re-design loyalty strategies	The impact of this strategic option was assessed as high since the re-segmentation and, consequently, the reformulation of the loyalty programs can immediately impact the profits and the customers' loyalty.	The risk was considered low since the investment is not significant, it does not represent a drastic shift in the business model, it is easily reversible and relevant in all scenarios.	High	Low	ST
New store concept	The impact is assessed as high because this new concept of *Come & Go* store will increase sales and serve as complement for the online platforms of food retailers , improving customer experience and loyalty levels.	The risk is considered to be medium because it requires a high investment in new stores, it is difficult to revert and it depends on the acceptance of the shoppers.	High	Medium	MT
Integrate producers to offer more and better private label products	This strategic option's impact was considered high since retailers will have better control over the production of private label products. This can increase the sales volume and improve customer satisfaction by offering quality products at a reduced price.	The integration of producers was considered a medium risk because it represents a high investment. Also, it is more relevant for the scenarios with high D2C since it would be a strategy to compensate for lost sales.	High	Medium	MT
Invest in delivery capacity and efficiency in terms of delivery times	The impact is considered high since it would increase competitiveness and online sales as the delivery time is one of the barriers of e-commerce. This would be directly related to the improvement of the customer experience and to the increasing in efficiency of the supply chain.	The risk was considered medium due to the investment required to improve delivery capacity. Additionally, this option is more relevant in the two scenarios where e-commerce usage is high.	High	Medium	MT
New partnerships with suppliers to offer new category of products	The impact is considered high due to the potential effect that a successful product partnership can have in sales. Additionally, with partnerships aimed towards national suppliers, it can lead to an increase of loyalty levels, since Portuguese customers value supporting national companies.	The risk was considered to be medium since establishing a new partnership with a suppliers requires moderate investment. Moreover, the success of the product lines acquired with the partnership is uncertain.	High	Medium	MT
Invest in Dark stores	The impact of investing in dark stores was assessed as high since it increases efficiency in the supply chain and allows a cost reduction in the delivery of online orders.	The risk was considered medium because investing in dark stores represents a drastic shift in operations, and it would be costly to revert. Furthermore, it is uncertain if e-commerce will increase considerably in Portugal to justify an investment in dark stores.	High	Medium	MT
Acquire a distribution company (vertical integration of delivery)	The impact of this strategy would be high because food retailers would be offering a new service for their suppliers, collecting new margins from it. This would also be a good strategy to continue to collect some revenue and make a profit from the sales of the goods of companies doing D2C, instead of losing that revenue entirely. Furthermore, by acquiring a company which would already have the know-how and the assets to efficiently provide transporting services, food retailers would also be able to be more efficient in their own deliveries (both inbound and outbound logistics).	The risk of this strategy would also be high because this acquisition would require a very high investment and changes in the business model of food retailers. Moreover, the acquisition may be unsuccessful in case the integration of the companies fails, and may result in losses for both. Additionally, this strategy is more relevant for scenarios where D2C is high, and not for the 4 scenarios and would also be difficult to revert, therefore, it should be implemented in the long run, depending on the conditions verified at that moment and all due diligences should be performed preceding a company acquisition.	High	High	LT

Interviews

Associação Portuguesa de Empresas de Distribuição

Representation of a group of companies in the retail, wholesale and e-commerce sectors
Dr. Gonçalo Lobo Xavier - General Director of *APED*

Topics Addressed	Answers obtained	Main conclusion
E-commerce	• "E-commerce is one of the bigger concerns of retail chains." • "E-commerce numbers increased during the pandemic, but after the critical stages, the e-commerce level decreased again only for 2% above the initial level" because " people want the products immediately available and due to the fresh products". "Portugal is not at the level of the North of Europe due to the aged population", however "Food retail chains have to have the necessary infrastructure to respond to the few online orders." • "E-commerce is not profitable.", "food retail is a business of high volumes with low margins, and so the value chain has to be very efficient." • 30% of transportation costs are fuel so the high prices represent a challenge. Businesses have to have e-commerce, but they have to find solutions. Partnerships with *Glovo* or *UberEats* represent easy solutions because of motorbikes and electric motorbikes. • "Shoppers like to go to physical stores to hand-pick the products and to search for the promotions. They only buy certain products if the price has a discount."	The Portuguese food retail industry still has low levels of ecommerce usage, however food retailers should start developing their e-commerce infrastructure and thinking about possible strategies to make it profitable.
Direct to Consumer (D2C)	• "Portugal is the fifth country where more products are sold in promotion, with 50%" which means that "people are not loyal to the brand but rather to the discounts." • "D2C could only result with a multinational brand." • Private labels do not always work, "*Lidl* had only private labels, but people never bought the private label corresponding to *Coca-Cola*." • "Private brands are here to stay, and retailers are betting on a premium positioning, but with the cheapest price (*PVP-Preço de Venda ao Público)* in all segments."	There is a possibility of D2C but only for brands to which customers are loyal. Portuguese population consumption is more moved by discounts than by brands, so this strategy may not be possible for some. Private labels seem to have high acceptance for the majority of the products type.
Supply chain	• "No more hypermarkets will be opened. More medium size stores will be opened in urban centres and the pandemic just came to accelerate this trend. *My Auchan* and the new concept of the *LIDL* stores at the train stations are examples of it."	Food retailers are focusing more on convenience stores.
Sustainability	• "Another big concern of retailers is the environmental sustainability, however, it is only a concern of the younger population. People with over 50 years old care about it but it does not influence their shopping behaviour" • "Food retail chains have a fundamental role in educating the clients towards more sustainable practices like recycling and have a more rational use of plastics"	Although food retailers are starting to adopt several measures related to this cause, due to regulations or brand image, a lot of people are not really changing their habits and that is why food retailers play an important role in educating them.
Automation and human resources	• Regarding payments, "people will be substituted by machines but not all customers will accept or understand it". Once again, "retailers have to induce certain human behaviours". • There will be "a high pressure on human resources and employees will be reskilled".	In some roles, people will tend to be substituted by machines. However, companies should reskill them in order to perform non-cognitive tasks. Innovative methods still have flaws and low engagement by some buyers.

Confederation of Portuguese Farmers (CAP - *Confederação dos Agricultores de Portugal)*

Socio-professional agricultural organization
Dr. Luís Mira – General Secretary of CAP

Topics Addressed	Answers obtained	Main conclusion
E-commerce	• "It is more likely to increase in non-perishable products, however if the customer knows the brand and trusts the quality of the products, it can increase in perishables as well" • "Food retailers want the trust of the shoppers and therefore will not purposefully send sub-optimal products. Therefore, once people understand they can trust they will receive optimal products, online purchases may increase" • "With the appearance of faster and more ecological delivery methods, such as amazon drones, people are more likely to buy online" • However "some people like to go to the physical store", so "it is not certain which option will prevail"	E-commerce of perishable products is possible but more likely will be lower than e-commerce of non-perishable goods. People like to go to the store and to hand-pick their fresh products.
Direct to Consumer (D2C)	• "D2C involves activities that most producers will not be able to execute, such as outbound logistics, marketing, client support. Only powerful and stable producers, or a group of several producers would be able to do D2C" • "If the clients know the company they are much more likely to buy directly from them. Companies such as "*Vale da Rosa*" or "*Maçã de Alcobaça*" might be able to do D2C, but in general the shopper does not recognize the companies that produce the perishable products that are sold by food retailers. Nevertheless, it would be easier to do D2C for producers of non-perishable and branded products such as wine"	There is a possibility of D2C of perishable products, however only for brands known by the shoppers and for companies that have the capacity to handle all the additional activities that would be required.
Automation and supply chain	• "There is a clear tendency to automate processes in-store and the supply chain. *Mercadona* already has a fully automated central warehouse and automatic requests to stock each store which is done with high frequency, sometimes twice a day." • "Food retailers are automating processes in-store such as the check-out. As an example, *Decathlon* does not have employees in the check-out, only for sporadic client support. This allows cost savings and employees more focused on the client experience"	Food retailers should invest in automations in the supply chain and technologies in-store to ensure cost reduction and more efficiency of the processes, while simultaneously, improving client experience and satisfaction.
Products origin and carbon footprint	• "Portuguese shoppers are more aware of the environmental impact of importing products, nevertheless, they are very price sensitive and are used to wait for promotions due to their high frequency. Additionally shoppers have lost the notion of buying products only on the respective season and only the ones produced in our country" • "We go to a restaurant and the fruits available are pineapple and mango, which are not produced in Portugal"	Consumers are more aware of negative environmental impacts and want to support national producers, however the majority is not willing to pay higher prices
Offer of meals	• "There is a clear tendency for an increase in prepared meals and takeaway, that provide convenience to buyers and to save time by not cooking"	Smaller stores, focused on perishable products and prepared meals are a tendency for the future.

NielsenIQ

Information, data and statistics focused organization
Drª. Paula Barbosa – Retail Services Director

Topics Addressed	Answers obtained	Main conclusion
E-Commerce	• "There are two different spectrums in e-commerce: the food and non-food products. The latter is rapidly increasing, but with COVID the first is now catching pace since variety of offering increased." • "68% of shoppers don't intend to buy food-products online, thus e-commerce represents 2% of sales." • "The CEO's of *Jerónimo Martins* and *Sonae* do not fully believe in the potential impact that e-commerce can have in the food industry. I believe it won't replace but it will complement physical stores." • "At the moment, the e-commerce food retail market is not profitable. I believe there are going to be new functionalities being added to the current model, such as hypermarket serving as support for deliveries." • "The takeaway component of stores is an important improvement point. Currently, it is useful, but it does not satisfy the shoppers' needs. The solutions need to be cheap but focus on quality."	Currently, only a small percentage of shoppers intend to buy food products online. The e-commerce will complement physical stores representing a considerable shift in the industry. In order for the e-commerce food retail market to become profitable, the current processes need to be adapted and improved. The takeaway products have potential to become a considerable part of the retailers' portfolios, but the quality and variety of this service needs to improve.
Direct to Consumer (D2C)	• "D2C can have great impact in the retail industry. More and more the consumer has a greater bargaining power to determine the market and with online this will only increase." • "There will have to exist an aggregating platform that is able to gather multiple relevant brands. A platform like *Glovo* that goes to the store to make the customers' purchases. Or for example a platform like *Getir* that owns their own dark stores and warehouses. This will most likely influence retailers' relationships with suppliers, as pressure and competition increases. Only if a brand has a very strong reputation, like *Nespresso*, can operate alone." • "In order to adapt to this increase in D2C rates, food retailers will need to differentiate their business model. Currently, in Portugal, private label sales are around 30%, and this number will most likely increase. There are 2 major differentiation factors: private label and perishable products with quality."	Due to the e-commerce channel increasing in popularity, shoppers now have a higher bargaining power over retailers, thus, raising the potential success of D2C in the food retail industry. Only larger companies can successfully penetrate the D2C market alone, while others will most likely join aggregating platforms in order to diversify and increase their reach. The percentage of private label sales for food retailers will most likely increase and can potentially act as a competitor for brands trying to sell D2C.
Products origin and buyers' preferences	• "Currently, 74% of shoppers consider important to have information regarding the origin of the products and 45% of customers are willing to spend a bit more on national products, however, of course intention is one thing and actually doing it is another." • "I believe that shoppers like to be surprised, introduced to new products and can be influenced. For instance, 5 years ago, everyone would purchase eggs based on price. Then, brands such as *Intermarché* and *Lidl* started to commercialize free range eggs. Later on, the movement of selling biological eggs started. The fact that buyers shifted their buying habits for these products shows the influence that food retails can have over buyers."	Shoppers' mindset regarding what products to purchase and how they do so can be influenced.
Geographic locations of stores	• "The market is highly saturated. Now that the COVID lockdown is easing, buyers return to physical stores. Additionally, with remote working, medium cities will grow and gain more importance, resulting in retail chains having to reconsider where to open stores."	Market is heavily saturated and with remote working, there could be a shift in consumer's geographical locations, potentially impacting future long term (more than 10 years) decisions regarding store locations.

Pingo Doce (Jerónimo Martins)

Food retail chain
Drª. Isabel Pinto – CEO of *Pingo Doce*

Topics Addressed	Answers obtained	Main conclusion
E-commerce	• "E-commerce will continue to be an additional service because it is not profitable." • "The Portuguese market values convenience, and more and more proximity stores are opening. For this reason, the Portuguese shoppers do not have an extreme need to order online because it is quick to go to a physical store." • "E-commerce increased because of the pandemic but decreased when the lockdown ended." • "*Pingo Doce* have a partnership with *Mercadão* that has a market share of 25%. The service is very good because when one product is not available, an employee calls the customers to advise and ask if they want to choose another one." • "E-commerce will not be a big portion of the market because the food retailers own the stores, so they want that customers go to the stores."	E-commerce penetration will continue to be low in Portugal as the customers do not need to shop online because of proximity stores. E-commerce will remain as an additional service.
Direct to Consumer (D2C)	• "It is essential to always have what the shoppers want in the stores. So, if brands want to do D2C, *Pingo Doce* will not retaliate" • "E-commerce is very expensive, and brands are unable to do so. One possibility is for several brands to come together, but that's basically what Glovo does."	D2C is not a concern because e-commerce costs are so high.
Labor shortage	• "Most retailers, especially the discounters and *Continente*, do not have service sections but self-service." • "There is no specialized labor. For *Pingo Doce* to have a butcher's section, it needs butchers. To have a bakery, *Pingo Doce* needs bakers. There is no workforce, and this is going to be a big problem in the long run and technologies cannot replace people at this level."	*Pingo Doce* is concerned about labor shortages, which is harming retail services. In this aspect, technology cannot replace people.
Technologies in-store	• "*Pingo Doce & GO* at *Nova SBE* is not profitable, but it is part of a value proposition for the shopper." • "The technology is costly, and its maintenance as well." • "Electronic price tags are practical but also very expensive."	Technology has many advantages, but it is still expensive to implement and maintain.
Sustainability	• "Demands towards sustainability entail several costs. Companies must always be making improvements because the planet needs it and because customers demand it." • "The *Jerónimo Martins Group* has already won several awards for sustainability." • "All the food that is wasted is because it cannot be given away. You cannot sell or donate hot food after 3 or 4 hours, so it has to be thrown away."	Sustainability and the fight against food waste are well present in the strategy of the *Jerónimo Martins Group* and *Pingo Doce*.

Continente (Sonae MC)

Food retail chain
Eng. Luís Moutinho – CEO of *Sonae MC*

CONTINENTE

Topics Addressed	Answers obtained	Main conclusion
E-commerce	• "E-commerce in food retail will grow in a limited way because food purchases are more recurrent, and it is a sensory experience." • "South Korea's e-commerce has a 20% penetration in food retail. In England, e-commerce is between 10% and 13% and in Portugal below 2%." • "Online has tripled because of the COVID-19 pandemic. Currently, e-commerce has dropped again but is above 2019 values. In the next few years, it is expected to grow 20% a year. The problem is that the base is small (2%)." • "*Continente* has over 20 years of experience in the online channel and has 60% of the market share."	The e-commerce in Portugal is low (2%). Despite having increased because of the Covid-19 regulations, it has already decreased. The ratio will increase around 20% in the next few years.
Direct to Consumer (D2C)	• "Some brands have worldwide strength to make D2C." • "D2C is happening with renowned brands like *Nike* and *Adidas*. In food retail, this is unlikely to happen. The customer experience does not point in that direction as it is not like buying sneakers or an appliance." • "If brands start doing D2C, retailers will make an "ultimatum", whether they want to continue to be sold by food retail chains or not."	It is unlikely that brands will start selling through the D2C channel in food retail. If that happens, retailers will put pressure on them.
Private label products	• "Each operator has its value proposition regarding the private label products. For example, discounters' assortment is 80% of private label brands, and the remaining 20% is to attract customers to the store. In *Pingo Doce*'s supermarkets, about 50% of its products are private label." • "*Continente* has a 30% penetration of its private label brand, and the objective is to maintain this percentage and improve the quality of the products." • "Private label products do not always have the greatest margin because these products are cheaper but with good quality." • "Prices difference of private label products and renowned brand products vary between 20% and 30%."	Private label products have different penetrations in different retailers. There is a concern to keep prices low and increase quality.
Technologies in-store	• "*Continente Labs* is changing the check-out process, which is an unpleasant moment because you have to pay and put your purchases in the bags. *Continente Labs* is a prototype, and the objective is not to open more stores of this type. The idea is to replicate the concept for existing stores." • "*Continente* has different payment methods such as traditional check-outs, single-line, self-check-out and payment and product scanning with the *SIGA App*. The goal is to have diversity so that customers can choose." • "We don't want exclusivity. We want customers to choose." • "The biggest problem with incorporating new technologies in the store is the compatibility with the technologies already in the store."	Retailers must provide a variety of payment methods, so customers can choose what they prefer. The biggest obstacle to incorporating new technologies in stores is the compatibility with existing technologies.
Hypermarkets	• *Continente* has 41 hypermarkets. They are under pressure as proximity and convenience are gaining weight. Convenience stores are a trend. However, there will still be space for hypermarkets." • "Fifteen years ago, it was said that hypermarkets were going to disappear, but they still exist." • "The strategy is to reinvent hypermarkets, for example, by reducing their area, creating new spaces such as a sitting areas, takeaway, bakeries."	Proximity stores are the preferred choice of the Portuguese for the sake of convenience. However, hypermarkets will not disappear as retailers are already reinventing them.

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THANK YOU

Ana Marquês 23809

Mariana Henriques 32173

Marisa Costa 44851

Tomás Santos 44818

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