The impact of supply chain disruptions caused by the COVID-19 pandemic on inflation and its effect on consumer goods companies – Case Study "The Kraft Heinz Company"

Duarte Simões Bessone Pereira de Gouvêa

MASTER IN

INDUSTRIAL ENGINEERING AND MANAGEMENT

ABSTRACT

Since the outbreak of the Covid-19 pandemic, consumer goods supply chains have been severely disrupted. Lockdowns and other restrictions imposed by governments to combat the virus' spread have resulted in increased demand and supply shortages. Due to a scarcity of some materials, prices have risen dramatically. Furthermore, logistics networks were damaged, resulting in longer delivery lead times, and logistics operational costs escalated drastically due to increases in energy, fuel, and labor prices. The situation has gotten significantly worse since Russia's invasion of Ukraine. Energy and fuel costs have risen, and there is little indication that they will decrease. All these cost increases have had a significant impact on consumer goods companies, which need to pass on some of these increases to the final consumers despite their best efforts to prevent it, or risk losing their profit margins. This paper provides insights into all these concerns in depth, demonstrating how the pandemic has impacted supply chains and how this has resulted in price rises and supply shortages that are affecting consumer goods companies around the world. Furthermore, it demonstrates how all these risks may be turned into opportunities if organizations develop cost-cutting strategies to offset these additional costs and, as a result, are able to provide more competitive prices. Furthermore, a case study is offered that demonstrates how the problem has impacted The Kraft Heinz Company and how the company is addressing it. All the issues discussed are supported by literature. Following that, the methodologies used to reach conclusions are presented, followed by the results reached through the application of the same methodologies. Lastly, a conclusion is reached on the themes studied and concrete answers are provided.

1 INTRODUCTION

Consumer goods markets have been undergoing significant changes since the start of the Covid-19 pandemic. Government-imposed restrictions, along with an already-existing shift in consumer behaviour, resulted in shortages of specific materials, disrupting consumer goods companies' supply chains. As a result, the prices of these components skyrocketed to previously unimaginable heights. Factory closures in China in early 2020, as well as lockdowns in several other nations, labour shortages, strong demand for tradable commodities, logistics network disruptions, and capacity limits, have also resulted in significant increases in freight costs and delivery times (Wang & Kamali, 2021). With the relaxation of Covid-19 restrictions in 2021, additional supply chain issues arose because of the massive increase in demand, which caused prices to skyrocket. Companies try to predict raw material inflation and mitigate the impact of this inflation on profits. They can potentially turn the negative impact of inflation into a positive one by seizing opportunities to achieve a competitive advantage that allows them to grow their market share by lowering their pricing. As a result, the high inflation brought on by these disruptions can be a major opportunity for those organizations prepared to take advantage of it. Due to a scarcity of critical ingredients and packaging materials, food and beverage companies are suffering this effect in large quantities. Additionally, global logistical networks were severely impacted. The lack of people in distribution centres throughout the world, along with a continuing driver shortage and a few unique occurrences, caused damage on global logistics networks and spiked logistics operational expenses. Due to the pandemic's disruption of the network, international container costs are continuing to grow. It is hurting haulage throughout Europe, resulting in higher costs and decreased availability. As a result, both raw materials and final items are under tremendous cost pressure (Swiftpak, 2021). Russia's invasion of Ukraine has aggravated the situation further, particularly with the escalation of energy and fuel prices.

It is critical to understand how supply chain disruptions induced by the pandemic, and later the war in Ukraine, are affecting supply performance and, as a result, prices, not only for consumer goods companies, but also for governments and other public organizations all around the world. The unpredictability of lockdowns and other Covid-19 restrictions, as well as the development of the war in Ukraine could cause more disruptions beyond 2022. As a result, it's essential to learn from past mistakes in order to predict and avoid future consequences, especially given the risk of inflation continuing high for longer than expected. These events have had a major impact on The Kraft Heinz Company, one of the world's leading food and beverage companies. As a result, the company is an ideal case study for this research.

This study's objective is to demonstrate how these disruptions effect inflation, how inflation affects consumer products companies, and what these companies can do to turn this threat into an opportunity. Lockdowns and other restrictions to prevent the spread of the pandemic have caused disruptions in the supply chains of thousands of consumer goods since the first half of 2020. The effects of the various disruptions have varied. The most significant of these, and the most relevant to this research, is higher inflation on a variety of items. Price rises across the supply chain are having a significant impact on consumer goods companies. As the cost of raw materials, packaging materials, labour, energy, and logistics rises, these businesses find it harder and harder to keep their prices competitive without drastically reducing their profit margins. Companies, such as The Kraft Heinz Company, must come up with cost-cutting efforts to offset these additional expenditures to stay competitive. To achieve these savings and maintain competitive prices, strong partnerships with suppliers are critical. Kraft Heinz will be used as an example in this study to demonstrate how companies have been affected by these problems and how they are dealing with them.

Three methodologies will be used to assess the impact of supply chain disruptions on inflation, and thus on The Kraft Heinz Company, as well as what the company can do to mitigate this impact. To begin, a practical analysis will be conducted to demonstrate how businesses evaluate and comprehend the impact of inflation on their costs, using an ABC methodology. Furthermore, an example of a strategy to mitigate this impact, supported by a sensitivity analysis, will be given an analysed. Secondly, two interviews with Kraft Heinz employees who are directly involved with these issues will be done. These interviews will provide a thorough understanding of the problem, its impact on the business, and what the company is doing to tackle it. Finally, a SWOT analysis will be performed to determine the company's competitive position in the current circumstances. This form of analysis will reveal the company's current state and assist in determining what types of initiatives can be implemented.

2 PROBLEM DEFINITION

Lockdowns and other restrictions were implemented by governments all around the world to prevent the spread of COVID-19. These measures had a big impact across diverse sectors.

One of the most serious issues was a lack of employees in industries, which reduced production, and in airports, seaports, and distribution centres, which disrupted global logistics networks. Furthermore, the closure of restaurants, cafes, and other food and beverage establishments resulted in a significant increase in supermarket product sales, putting pressure on its manufacturing and delivery. Consumers were also drawn to internet shopping because of the first lockdown, which resulted in a surge in demand for particular goods, and consequently shortages. Through all the lockdowns, online shopping became a necessity. In fact, the proportion of retail sales via the internet has nearly doubled to 27.9% in the last years, as seen in Figure 1.

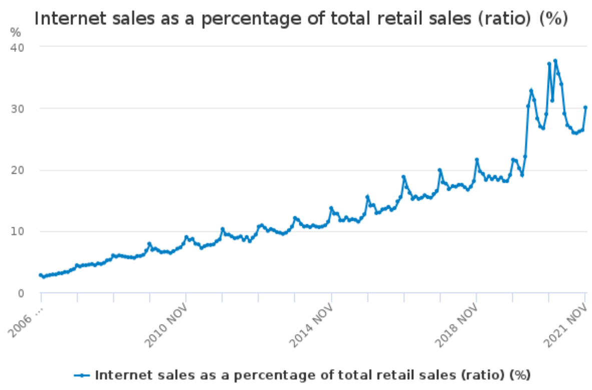

Figure 1. Internet sales as a percentage of total retail sales (ratio) (%)

Source: (Office for National Statistics, 2021)

After the Covid restrictions were lifted in 2021, consumption returned to pre-Covid levels. Due to this rise, as well as the changes in consumer behaviour brought on by the initial lockdown, certain resources were in limited supply. As a result, the cost of these resources has increased, as have their lead times. Paper and foil packaging materials were particularly vulnerable. As a result, consumer companies all over the world had a difficult time not only obtaining these materials, but also obtaining them at a reasonable cost.

Increased consumption necessitated adding more trucks to the fleets of European transportation businesses. This expansion coincided with a persistent driver shortage and rising fuel prices. As a result, to keep their drivers and be profitable, these companies had to raise costs for their consumers.

As previously said, paper was one of the most affected materials, with paper prices in the UK rising by between 38 and 45 percent by 2021. As a result, the costs of products packaged in this manner were significantly influenced. To remain competitive, consumer goods companies are absorbing some of the effects. However, because the increases are so significant, consumer prices will have to rise as well. As it can be seen from Figure 2, the Producer Price Index (PPI) for corrugated and solid fibre box manufacturing is at an all-time high.

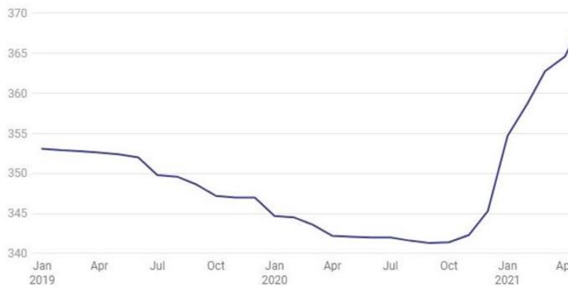

Figure 2. PPI for corrugated and solid box manufacturing

Source: (FRED, 2021)

Furthermore, the cost of fuel and energy continues to rise. In Europe, this increase, combined with growing truck driver salaries, resulted in higher logistics expenses, which had a significant impact on the final cost of finished goods.

The Kraft Heinz Company is a multinational food and beverage company based in Chicago. It is now the third largest food and beverage company in North America and the fifth largest in the world, due to the merger of Kraft Foods and Heinz in 2015. Procurement is the most important business function to address in this paper. Procurement is responsible for acquiring the goods necessary to support the company's operations. Procurement can be divided into four categories: direct, indirect, logistics, and external manufacturing. Ingredients and Packaging are the two categories of Direct Procurement.

This study will focus on The Kraft Heinz Company. Kraft Heinz, as one of the world's largest food and beverage companies, has been adversely hurt by high inflation and supply performance issues. Kraft Heinz is trying to mitigate this impact as much as possible. However, as mentioned before, some of the impact will have to be passed on to the customers and final consumers. Later in this study we will see how Kraft Heinz is addressing the issue and what kind of initiatives can be created to fight it.

3 LITERATURE REVIEW

A report by the European Central Bank in 2021 provides a good insight into how the fall of pandemic related restrictions affected prices. As more limitations loosened, economy swiftly reopened and people resumed their travels and visits to restaurants. They started buying more with the money they weren't able to spend during the lockdowns. Businesses found it easier to raise prices without losing customers while the economy was growing. However, not everything moves at the same speed. As companies rebuilt supply systems that were severely harmed by the pandemic, they are found it hard to keep up with fast expanding demand. Transporting goods became more complex and expensive due to challenges such as a shortage of shipping containers. The longer such problems persist, the more likely corporations are to pass these expenses on to their customers in the form of higher pricing. The epidemic has altered the way we live and work, as well as the items we require. Consumers are buying more of certain things, such as electronics and home improvement supplies, than manufacturers had anticipated. Prices rise when businesses can't keep up with the rate at which people desire to acquire items (European Central Bank, 2021).

The increased inflation reflects the latest changes as the supply-demand mismatches caused by the pandemic and other policy-related developments. Examples of these developments are the expiration of the temporary valued-added tax cut in Germany or the in the shelter component of US consumer prices. When the pandemic hit in 2020, businesses cut raw material orders. For this reason, when restrictions started to drop in 2021 a lot of businesses were unable to keep up with the increased demand. Furthermore, the pandemic generated huge disruptions in worldwide logistics networks. Shipping containers routes were disrupted, and lead times increased enormously, aggravated by events such as the closure of the Suez Canal (IMF, 2021).

Before Russia's invasion of Ukraine and consequent sanctions imposed by European governments, oil, gas, and electricity had already all increased in price across the globe. Many variables influenced energy prices: less wind in the UK caused windmills to stop spinning, droughts in Brazil caused dams to produce less power, and 2020's harsh winter reduced oil and gas stocks. This, combined with rising demand in 2021, caused prices to skyrocket. Because energy accounts for a big portion of both companies' and people's spending, the price of oil, gas, and electricity has a significant impact on total inflation: rising energy prices accounted for half of the 2021 increase in inflation. Because they are influenced by so many factors, energy costs are known to fluctuate a lot (European Central Bank, 2021).

According to financial experts at the European Central Bank, over the course of 2022, inflation was predicted to decrease. Energy costs were expected to fall as the supply catches up with demand, and base effects would be removed from the yearly price comparison used to assess inflation. However, they also highlighted that because the epidemic was unprecedented in contemporary history, the recovery process could be unique. The significant supply chain disruptions could take longer to overcome, which was what we are seeing happening in real time. They also mentioned in a report in November 2021, that because of the green transition, energy prices could continue to grow. Of course, at this point the war in Ukraine was still too far ahead to be considered (European Central Bank, 2021).

The inflation crisis worsened after Russia invaded Ukraine. Energy prices did not begin to decline in 2022, contrary to earlier estimates made in late 2021. Instead, prices have increased massively and are still very unstable.
Following Russia's invasion of Ukraine, prices for oil, coal, and gas skyrocketed and have been unstable ever since. As stated in an European Central Bank report, when news of a potential Russian invasion of Ukraine increased in December 2021, volatility in the price of energy commodities started to rise

As we can see in Figure 3, consumer price indexes for both the United States and the eurozone are on the same levels in 2021 and 2022. However, producer price indexes in the eurozone have skyrocket in comparison with the ones in the United States, due to the gas crisis rooted in the Ukraine war. Energy prices, which are the main cause of inflation, rose by 45 percent in March and 38 percent in April in Europe. The core inflation rate in the eurozone, which excludes energy, food, alcohol, and tobacco, was 4.2 percent in June. This rate set a record but also highlights how unevenly distributed the total rate is. Although consumer price indexes are still on the same level for both the US and the eurozone, the eurozone's CPI can escalate once manufacturers start passing through prices to consumers.

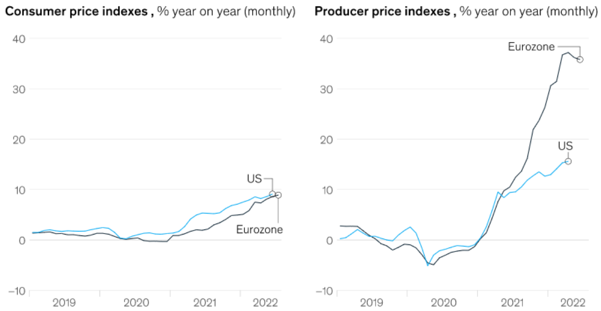

Figure 3. Consumer- and producer-price inflation surged in the United States and the eurozone in 2021 and 2022

Source: Eurostat; national-statistics websites; McKinsey's Global Economics Intelligence analysis

A high-inflation climate is unstable and unsafe for many businesses to operate in. Responding to inflation is crucial right now, but any actions taken must carefully consider future inflation, how it will affect the business model of the organization, and how long it will take for a reaction to take effect. A report by McKinsey & Company explains how in a setting of high inflation, analytics can be utilized to enhance decision-making, with the sophistication of the analytics being based on the needs of the firm. Analytics will need to be more accurate in industries with highly specialized operations and narrow margins, such consumer packaged products, to help create a sophisticated understanding of risks. However, high-margin businesses (such as those in software development or luxury items) may benefit from a more conceptual approach, which does not need the creation of deep analytics. The majority of organizations employ forecasts and scenarios created externally when creating inflation reactions, yet inflation forecasting is a distinct and complicated topic in and of itself. On the other hand, analytics for decision-making cannot be outsourced. Businesses can utilize a flexible, analytically complex strategy to help them decide how and when to react without having to resort to direct inflation forecasts. In the technique, the sorts of exposures are broken down and the extent of exposure is evaluated (Govindarajan, Comolli, Zhang, & Venkatesh, 2022).

A different report also by McKinsey & Company provides deep insights into Procurement strategies in unstable times with high inflation predictions. Maximizing spend on current contracts whose prices aren't inflation-indexed and pursuing clawbacks on unindexed contracts that covered periods when commodities prices declined are often two immediate commercial opportunities to reduce volatility. Managers can quantify the degree to which inflationary pressure should effect supplier costs by using digital and analytics technologies to boost cleansheet research and identify how much purchases should cost for significant portions of corporate spending. Collaboration between suppliers can increase efficiency and possibly aid the business in looking beyond pricing to changes in quality or requirements or strategies to utilize less in order to increase future resilience. In order to assess the potential impact of inflation on the prices the company charges its own consumers, businesses might also think about enhancing coordination between the pricing and procurement departments. Accelerating value engineering and modifying batch sizes or order frequency are two defensive, technical levers to combat inflation. A potential medium-term technological lever that can help enhance resilience is reducing SKUs or high-cost features and qualities by altering specifications. Depending on the industry, optimizing supplier footprints for better control over logistics, cost, tariffs, and inventories are alternatives to combat volatility in the short-to-medium term. Strategic inventory stockpiling, a greater reliance on vendor-managed inventory, increasing cross-industry collaboration to share commodity exposures, and working along the end-to-end supply chain to derisk specific nodes could be longer-term volatility challenges (Ibáñez, Rugamas, Kuehl, & Kohli, 2022).

Research on negotiation is becoming more and more popular, unlike most other research. A book on negotiation theory by Leigh L. Thompson explores what is making negotiation grow as a field. The increased demand for negotiation courses in business schools is a leading factor for the growth, as more and more scholars are required to teach these courses.
Negotiation research comes from economic theory. Therefore, there are clear performance measures. One of these measures is the level of integrative agreement, which refers to mutually beneficial outcomes. The opposite of these agreements are compromise agreements, which require parties to put important interests behind. Research on negotiation has revealed that people lose hundreds of thousands of dollars during negotiations, because they are unable to reach mutually beneficial agreements, mostly due to the parties' mental framework (Thompson, 2006).
Parties can use different negotiation strategies based on the situation. High-stakes negotiations frequently result in high levels of anxiety. Dealmakers become preoccupied with (perceived) dangers as a result, rather than identifying all potential sources of leverage and considering all available solutions. Negotiators are more prone to make poor tactical decisions in those circumstances, either caving to pressure from the other side or unintentionally bringing about their own worst fears. Selecting a cooperative or competitive stance is only one part of a strategic negotiating technique, and thinking in such absolutes is nearly always fruitless. Dealmakers will be able to unlock much more value by analyzing connections between one negotiation and others with the same party over time (and even with other parties), examining carefully whether they are negotiating about the right issues, and concentrating on when and how to engage with the other side most effectively (Hughes & Ertel, 2020).

4. RESEARCH METHODOLOGY

4.1 Practical Analysis (ABC analysis)

The West region's Drinks & Brunch External Manufacturing portfolio will be examined in detail. The costs of the various components of each product will be assessed in order to estimate the impact of inflation on the company in 2022.
There are six different suppliers in the Drinks & Brunch portfolio, totaling 65 products. The names of the suppliers will be represented as A, B, C, D, E, and F for reasons of confidentiality, and the product identification numbers will be represented as 1 to 65. In addition, all numerical figures such as component/product costs, volumes, total spend, and impact will be fictitious.

It is feasible to calculate the projected spend in 2022, as well as the impact on the company, by combining the pricing of each product in 2021 and 2022 with the expected total volume for 2022. Furthermore, all the pricing of each component of each product will be examined. For further investigation, the different material categories will be grouped using an ABC analysis. Based on the Pareto principle, ABC analysis is a well-known and useful categorization. For instance, Group A inventory goods are those that account for around 70% of a company's sales yet only occupy 10% of the inventory. They are vital to the operation of the business. The items that make up Group B inventory account for around 20% of the company's sales and 20% of the inventory as a whole. Items in group C make up around 70% of inventory but only account for 10% of firm sales (Lung Ng, 2007).

After evaluating the impact of price increases on the portfolio in 2022 using an ABC analysis, an example will be given on the evaluation of a possible strategy to mitigate the risk of volatile materials for the following year. The circumstances of when purchasing stock of a certain material in advance to reduce the impact of possible price increases in the future are feasible will be evaluated. A sensitivity analysis will be done as well to support the study.

4.2 Interviews

To analyze how the current supply chain disruptions are impacting the Kraft Heinz Company, two interviews will be conducted with different company stakeholders who work directly with these issues. One of them will be with a member of the External Manufacturing team for the West Region, who is in constant contact with the current price increases across different materials, and the other will be with a member of the logistics team for the UK, who is directly in touch with both the energy and fuel increases, as well as the lack of truck drivers, which are highly impacting logistics costs.

The information acquired from these interviews will be used not only to create overall conclusions for the study, but also to contribute to development of the SWOT analysis described in the next section. The two stakeholders can shed further light on how supply chain disruptions and price increases are affecting Kraft Heinz, as well as what the business is doing to address these challenges. Furthermore, because the stakeholders are all highly skilled professionals, they can explain how and why we arrived at this position, as well as what the future holds for the next few years.

4.3 SWOT analysis

A SWOT analysis, which stands for Strengths, Weaknesses, Opportunities, and Threats, is a framework for assessing a company's competitive position and developing strategic planning. Internal and external aspects, as well as existing and future potential, are all evaluated using this tool.

According to Alan Sarsby in his book SWOT Analysis, there is a tendency to want to start with the first quadrant (Strengths). However, this will most likely lead to a long list of strengths, not necessarily related to the external factors. Therefore, it is important to start with the external factors, and then build the internal ones based on whether these could help or harm the company. He argues that is the best way to classify the factors within the quadrants. Strengths are internal and helpful factors, whereas Weaknesses are internal and harmful factors. In the same line, Opportunities are external and helpful factors, whereas Threats are external and harmful factors. Furthermore, internal factors are helpful or harmful based on their effect on external factors. For this reason, Strengths are factors that can either aid an Opportunity or mitigate a Threat. On the contrary, Weaknesses are factors that can prevent the company from leveraging an Opportunity or that can expose the company to a Threat (Sarsby, 2016).

5. RESULTS DISCUSSION

5.1 Practical Analysis (ABC analysis)

With the practical analysis done to Kraft Heinz's Drinks & Brunch External Manufacturing portfolio, it was possible to estimate the impact of price increases on the company. To calculate this impact all the components of each of the 65 products were analyzed. By categorizing the components, it is possible to assess the impact per raw material category and analyze which raw materials have the highest impact on the costs. Using this analysis, the Procurement team can compare the increases requested by its suppliers with the overall market picture, which helps gain a leverage for negotiations.

In Table 1, we can see the split of the total spend with all suppliers from Kraft Heinz's Drinks & Brunch External Manufacturing portfolio. As expected from the analysis so far, the material categories with the biggest impact were carton, corrugated and injection molding in regard to packaging materials, and fruits, oil and sweeteners in regards to ingredients.

Table 1. Total portfolio product category impact

Category	2022 Budget	Average Price Increase	Impact
Blow Molding	€ 48,713.52	28%	€ 10,556.92
Cartons	€ 1,883,306.43	17%	€ 305,482.09
Cocoa	€ 976,206.66	9%	€ 58,628.29
Corrugated	€ 433,142.62	24%	€ 91,824.10
Cotton	€ 2,197.96	0%	€ -
Dairy	€ 208,825.11	15%	€ 30,659.95
FA	€ 600,063.90	-13%	€ (112,247.56)
Flexible	€ 804,528.63	13%	€ 68,548.71
Fruits	€ 1,764,060.65	19%	€ 338,687.60
Glass	€ 288,813.64	-8%	€ (25,074.32)
Injection Molding	€ 834,108.54	16%	€ 142,286.06
Labels	€ 42,198.26	6%	€ 4,753.19
Metals	€ 1,190.23	17%	€ 173.15
Nuts	€ 118,644.62	6%	€ 7,062.18
Oil	€ 893,484.43	48%	€ 288,453.58
Others	€ 34,659.89	0%	€ -
Processed grains	€ 574,515.87	7%	€ 28,229.56
Sweeteners	€ 1,310,220.66	13%	€ 106,112.38
Grand Total	**€ 10,818,881.63**	**12%**	**€ 1,344,135.87**

The different material categories were categorized using an ABC analysis for a further analysis of the impact of price increases on the total portfolio. As seen in Table 2, four materials were identified as type "A", five materials as type "B" and nine as type "C". Items A together represent only 22% of the total number of materials, but 55% of the total spend. Items B represent 28% of the total number of materials and 33% of the spend. Lastly, items C represent 50% of the total number of materials, but only 12% of the spend.

Table 2. Total portfolio ABC analysis

Item classification	Number of categories	% of categories	Amount spent (consumption)	% consumption	Impact	Impact %
A	4	22%	€ 5,933,794	55%	€ 808,910	57%
B	5	28%	€ 3,565,328	33%	€ 478,865	34%
C	9	50%	€ 817,499.02	12%	€ 127,024	9%

Items A have the biggest impact in the portfolio, amounting for almost 60% of the total impact. Items B have the second highest impact and items C the lowest.

As previously mentioned in the literature of Chapter 3 and will be reinforced several times throughout this chapter, buying stock in advance of a material whose price is volatile and/or expected to increase can be a solid option to mitigate the risk of both a cost impact and a supply constraint. Long-term suppliers with high value contracts might even be willing to lock prices without shipping the materials to the customer, which does not translate into any extra storage costs. However, for the purpose of studying the feasibility of purchasing stock in advance, we will exclude this option and run an analysis considering the company would have to store the goods.
Kraft Heinz will continue to serve as our case study. As seen from the analysis done above, prices of carton and corrugated packaging materials were highly impacted. Therefore, we will use these as an example and evaluate the feasibility of purchasing a high amount of carton and corrugated packaging for one of the company's best-selling SKUs in the Netherlands, to mitigate the risk of high volatility in 2023. Table 3 shows how much the price impact will be in 2023 if no action is taken.

Table 3. Impact of 2023 price increases in the packaging materials of product X

Product ID	Component Description	Quantity per 1,000 cases	2022 price	Volume 2023 (cases)	2022 spend	Expected price increase	Impact
X	Corrugated Box	1,000	€ 0.50	300,000	€ 150,000	25%	€ 37,500
X	Carton box	20,000	€ 0.25	300,000	€ 1,500,000	25%	€ 375,000

In these conditions, if Kraft Heinz would take the decision to purchase the packaging materials now and store them throughout 2023, the company would lose 21 thousand euros on the corrugated boxes and would save 141 thousand euros on the carton boxes. Therefore, in these conditions, the ketch up company should only take the approach of purchasing stock in advance for the carton boxes of Product X.

For further analysis, a sensitivity analysis was done using two variables – price increase of the packaging material and 2023 sales volumes, for both corrugated and carton boxes. In Table 4, we can see that for carton boxes the price increase in 2023 needs to be at least close to 20% for the strategy of purchasing stock and store it to be sued throughout 2023 to be feasible. If the price increase of the material is higher than 20%, an increase in sales volumes will lead to higher savings.

Table 4. Sensitivity Analysis Carton

		Price increase Carton						
	€ 141.000	5%	10%	15%	20%	25%	30%	35%
Volume	100.000	- 53.000 €	- 28.000 €	- 3.000 €	22.000 €	47.000 €	72.000 €	97.000 €
	150.000	- 79.500 €	- 42.000 €	- 4.500 €	33.000 €	70.500 €	108.000 €	145.500 €
	200.000	- 106.000 €	- 56.000 €	- 6.000 €	44.000 €	94.000 €	144.000 €	194.000 €
	250.000	- 132.500 €	- 70.000 €	- 7.500 €	55.000 €	117.500 €	180.000 €	242.500 €
	300.000	- 159.000 €	- 84.000 €	- 9.000 €	66.000 €	141.000 €	216.000 €	291.000 €
	350.000	- 185.500 €	- 98.000 €	- 10.500 €	77.000 €	164.500 €	252.000 €	339.500 €
	400.000	- 212.000 €	- 112.000 €	- 12.000 €	88.000 €	188.000 €	288.000 €	388.000 €
	450.000	- 238.500 €	- 126.000 €	- 13.500 €	99.000 €	211.500 €	324.000 €	436.500 €
	500.000	- 265.000 €	- 140.000 €	- 15.000 €	110.000 €	235.000 €	360.000 €	485.000 €

5.2 Interviews

The first interviewee was Stuart Alldridge. Stuart is the current Strategic Project Manager for Northern Europe Logistics at Kraft Heinz. In the Logistics area particularly, Brexit, combined with the pandemic effect, had a huge impact. It was firstly felt by the lack of heavy goods vehicle drivers. The UK as whole was missing around 100,000 drivers. Brexit contributed for about a third of this lack of supply. When lockdowns started to drop and the economic activity started to increase, the demand for moving consumer goods around increased, as it was already mentioned various times throughout this paper. In the summer of 2021, due to this lack of drivers, Kraft Heinz struggled to meet customer service targets. As Heinz was leaving close to a million dollars a day behind at the NDC, the team

quickly realized it had to pay whatever it took to distribute the products. So, for several months until the end of 2022, Heinz was paying a 75% uplift on freight-to-customer transportation. After Christmas 2021, the market got a bit better, with more drivers available, particularly due to the 30% increase in driver's wages.
In 2022, another massive event disturbed logistics costs once again. Russia's invasion of Ukraine led to fuel prices skyrocketing. Kraft Heinz transportation contracts work with a fuel floater mechanism, which means we pay or are credited according to fuel price variations. Therefore, Heinz passed from the usual 1 to 2% credit to a 10% monthly on cost. Furthermore, the same happened with energy. As Wincanton operates Kraft Heinz' NDC, all energy costs are passed on to us. Heinz was looking at 30 to 40% increased costs in energy at the warehouse, particularly due to the massive gas price increase. At one point, the price of oil surged to $139 per barrel, the highest level in nearly 14 years, while the wholesale price of gas for next-day delivery more than doubled (BBC, 2022).
Adverse situations create opportunities to get ahead of the competition. Projects that were not interesting before, since the UK warehouse is automated and deliveries are 85% full loads, can now be interesting, as the base cost went up. Fuel and electricity price increases can create opportunities for projects that were not relevant before. Options as railways, direct deliveries from factories, new warehouses, and other network redesigns become more and more interesting for the Business. As Stuart said, "it changes the potential root to market, and it changes the footprint.

The second interviewee was Cristina Pires Pedroso. Cristina is the External Manufacturing Lead for the Better Meals category, which represents around $100 million yearly spend, and between 20 and 30 different external manufacturers with over 1000 SKUs. Cristina splits the impact of lockdowns on prices in two parts. The first part is the direct impact on the supplier, which is the impact on the conversion cost. The energy increases and the lack of labor in the market were the two main factors driving this. The second part is the indirect impact on ingredients and packaging. As most of Kraft Heinz agreements with external manufacturers are based on open books, which means ingredients and packaging are paid according to the market price, suppliers do not suffer in case the cost goes up, since it passes on directly to Kraft Heinz. Cristina mentioned that the main issue was not only the cost increase, but also the availability in the market, since without the goods available, the supplier cannot produce and Kraft Heinz cannot sell, which brings a big sales loss to the company and risks the loss of shelf space to other competitors. Supply chain disruptions have coincided with the unanticipated increase in consumer goods demand. Unusual during an economic slump, the jump in goods demand caught many suppliers off guard, and they soon found themselves pressed for time to meet demand. As a result of this uptick, production of consumer goods was slowed down due to shortages in essential resources (Remes & Kohli, 2021). From a price perspective, her biggest supplier, which represents 50% of the portfolio, had a cost increase of over 10% this year on ingredients and packaging alone, which is a big hit on the company's budget. On top of that, the service level of this same supplier has been very low, due to the lack of labor and late ingredient deliveries, which consequently delay production and delivery to KHC. According to a research by the British Chambers of Commerce (BCC), 90% of manufacturers and 75% of businesses with more than 50 employees had a shortage of skilled workers in their own business or those in their supply chain.

5.3 SWOT Analysis

Figure 4 is Kraft Heinz' SWOT analysis. As any analysis of this type, it is split into four quadrants – Strengths, Weaknesses, Opportunities and Threats.

	INTERNAL FACTORS	EXTERNAL FACTORS
POSITIVE	**STRENGTHS** • Strong and diverse team • High service level to customers • Strong logistics networks • Strong partners with innovative solutions	**OPPORTUNITIES** • Strong need for new ideas • New opportunities arise with severe market changes • Partnerships with suppliers to grow together • New opportunities for sustainable solutions • Projects that were not sustainable before become more interesting
NEGATIVE	**WEAKNESSES** • High rotation in roles – lack of knowledge in certain areas • Cross-functional collaboration can be improved • Low visibility on extra costs and supply chain losses	**THREATS** • Lack of labor availability in the market • Lack of availability of certain materials • Inflationary pressures • Energy and fuel prices skyrocketing • Environmental regulations

Figure 4. Kraft Heinz SWOT Analysis

Kraft Heinz has powerful Strengths, which make it a tough competitor in its most relevant markets. It has a strong and diverse team, not only in Procurement, but also across all other functions. s. It has good partnerships with global logistics suppliers with strong networks. On top of that, its partnerships with suppliers allow the company to stay competitive through innovative solutions.
As any other company, Heinz also has some Weaknesses. Since, it is a huge multinational, with thousands of different roles across the zones, the job rotation occurs fast. Although this is positive for its employees' carriers and to bring new ideas to the table, it can generate a lack of knowledge in critical positions, which can hurt the company.

As mentioned earlier in this paper, critical situations like the one consumer goods companies are living now create opportunities. The huge impacts material availability and prices caused by the lockdowns, and later the war, brought to the surface different ways to get ahead of the competition. A massive opportunity was described sharply by Stuart Alldridge in the first interview done in this research. As Stuart mentioned, critical market situations can bring old project ideas back to life. Projects that were not interesting when specific costs were low can become extremely interesting once these costs go up. For example, railway deliveries become much more interesting if the fuel cost is very high. Additionally, not only old ideas can become more interesting, but also new ideas can arise from extreme circumstances. New problems require new solutions, and the first to discover these new solutions will benefit the most. As times of war bring people together, critical market situations bring the different players in the supply chain closer as well. Customers and suppliers closely to thrive together, which shines light on the partnerships and gives birth the further collaboration. Furthermore, the last couple of years have pushed the world to give more and more importance to sustainability. Sustainable solutions are still a recent subject on companies' to-do lists. Therefore, as they have not been explored for long, they are full of new opportunities. As consumers turn to more sustainable options, Kraft Heinz can leverage on this thirst and be the first to offer some of these options and be able to claim them through strong marketing strategies. Lastly, the lockdowns of the past years have pushed the world into a fast-paced digitalization. This means consumers are looking for new ways to buy. Achieving the easiest, fastest and most interactive solutions for consumer needs can further increase or even bring new revenue to the company.

The threats posed by the severe market changes of the last few years have been vastly described multiple times throughout this paper. Cristina Pedroso, in the second interview done in this research has given good examples of the negative effects to the company caused by the lack of labor in the market and availability of certain materials. This is currently still a threat Heinz is dealing with daily, which is putting huge pressure on the procurement teams across the world. As described earlier in this paper, the short supply of materials is causing massive inflationary pressures and driving prices through the roof. Among these are energy and fuel prices, drastically worsened by the sanctions put on Russia after its invasion of Ukraine. Additionally, as mentioned before, the world is giving a huge importance to climate impact. Environmental regulations imposed by governments are not only taxing manufacturers, but also causing decreases in production output.

6. CONCLUSIONS

As mentioned, several times during this study, the main cause of the present inflation and supply crisis were the lockdowns to fight the Covid-19 pandemic. They were the source of the supply chain disruptions, which led prices to escalate. There were also some natural causes, as bad crops, which contributed to the supply shortage of certain raw materials. This shortage coupled with the increased demand after the world opened in 2021 caused the prices of these materials to increase massively. Furthermore, there were certain local events, like Brexit in the UK, which aggravated the crisis further. Lastly, the sanctions imposed on Russia during the war in Ukraine by European governments gave birth to the energy and fuel crisis we are living today. All these factors together have put the world in an inflationary crisis never seen before.

FMCGs and other consumer goods companies across the world had to understand the main cost drivers impacting their portfolios. By doing this, Buyers can use fact-based studies to start conversations about certain areas of increase, with justification for a price rise required. Taking the example of the analysis done to the Kraft Heinz's Drinks & Brunch External Manufacturing portfolio, we could see the impact of the different commodities had on the total portfolio spend. Carton, corrugated, and injection molding materials suffered the biggest price increases among packaging materials. In the same line, fruits, oil and sweeteners had the biggest price increases from all ingredients in the portfolio.

As Stuart Alldridge mentioned in his interview, adverse situations bring new opportunities. Since the market has completely shifted, companies can leverage on these new opportunities not only by coming up with new ideas, but also by brining back old project ideas which did not make sense before. Projects that were not feasible when certain costs were low, can now be extremely interesting when the same costs are high. Intermodal solutions, for instance, are much more attractive with higher fuel prices, as their prices get more competitive. Furthermore, as times of war bring people together, critical market situations can bring the different players of a supply chain together as well. If the customer is successful, the supplier will be successful by extent. Therefore, collaboration with suppliers through strategic alignment, continuous improvement and innovation is a great example of how to leverage opportunities generated by the current crisis. In the past 2 and a half years, the world has moved towards sustainable solutions at a fast

pace. There are hundreds of new sustainability initiatives in the market. Companies can leverage these solutions to get ahead of competition, as well as meet CO_2 emission targets imposed by governments across the world.
As the current market is still highly unstable, companies need to prepare themselves for the future. Offsetting the impact of inflation through savings projects is a great way to prepare. However, although cutting costs during a crisis is beneficial, companies need to keep a long-term view, if they want to come out on top once the dust settles. Investments are still required to leverage opportunities like the ones mentioned in the paragraph above. Another great way to prepare for the future, is to try to lock prices for critical materials. As Cristina Pires Pedroso mentioned in her interview, the External Manufacturing had an easier time than other Procurement teams at Kraft Heinz because they booked ingredients and packaging stock in advance. This means that if the market price goes down the company loses possible profit, but if there is a lack of that same material in the market and the price goes up the company is not only safe from the hit, but also guarantees the delivery of that stock on time. In unstable markets like the one we have now, this is a great way to mitigate risks. A variety of sourcing and contracting strategies can be used by businesses to limit their exposure to additional expenses. Other strategies also include pass-through pricing and financial hedging.

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