



Team Phoenix

Mayo Business Plan Competition

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The Phoenix Mug



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Table of Contents

Executive Summary	1
Business Overview	2
Operating Plan	3
Market Analysis	5
Sales and Marketing	9
Management Team	11
Financial Plan	12
Conclusion	16
References	19

Executive Summary

This business plan outlines a portable self-brewing and self-heating mug, branded as “Phoenix Mug”. A general overview of the coffee and warm beverage industry reveals a demand for a cheaper and more portable alternative to current solutions. Furthermore, current brewing alternatives utilize single-use plastic units that are both wasteful and are difficult to be broken down. As a result, single use brewing pods continue to contribute to the ever so growing waste piles around the world. This demand presents an opportunity to provide consumers with a cheaper, portable and environmental alternative to a trendy and growing market. The primary demographic for this mug are Gen X, Gen Z, and Millennials and we will target them through social media and influencers related to warm beverages. Financial forecasts indicate that the Phoenix Mug will realize a net gain of \$134,000 in the first year of operations. If scaled up to 25 manufacturing employees at 2026, the mug will take in a net gain of \$39,150,000 that year. Given this demand for a cheaper, portable and more environmentally friendly alternative, the team is confident that the Phoenix Mug has the potential to be both scalable and sustainable for years to come.

Business Overview

The Phoenix Team's mission is to provide the market with an easy to use, portable, eco-friendly, self-brewing and self-heating mug. This idea stemmed from the frustrations of drinking cold and stale coffee after a long commute to work, paying for expensive coffees before class, and using bulky, complicated, and expensive brewing devices on camping trips. By providing means for a simple-to-use and portable mug, the consumer is able to brew the perfect cup of coffee, anywhere, anytime regardless of the situation. With the target audience being warm beverage drinkers, the mug can be adaptable to multiple beverages such as coffee, hot-chocolate and tea. The company will begin with small-scale manufacturing to dedicate more resources to an aggressive social media campaign. This company will be incorporated, which would bring along benefits such as asset protection through limited liability, corporate identity creation and the ability to easily raise credit and capital.

Operating Plan

Strategic company operations will be divided into three phases:

Phase 1:

This phase has a high emphasis on R&D and Pre-Launch Marketing. Phase 1 spans the two quarters of 2022.

R&D:

This task consists of continuing to develop and conduct market research for the Phoenix Mug, so that the customer can get the best product possible. The first strategy is to finish creating the minimal viable product so that the team can start beta testing the product with local consumers. At the start of this R&D period, provisional utility patents will be filed so that the Phoenix team will have a competitive advantage in having exclusive rights to both self-brewing and the pod structure.

Pre-Launch Marketing:

The team will utilize popular social media platforms such as Instagram, Youtube and TikTok to advertise the mug. A budget of \$8,000 will be dedicated in 2022 to pay for becoming sponsors for popular and trendy influencers in the coffee industry. Pre-ordering on Kickstarter will be utilized so that the team will be able to start collecting funds to mass produce the product. The main goal of this first campaign is to raise awareness about this product and start to gather market research such as features that the consumers will like to see in future iterations of the mug. Additionally, by showing that there is a need for this product, the team will have greater success at getting additional funding from investors.

Phase 2:

This phase includes the initial production stages with product marketing. Phase 2 spans the last 2 quarters of 2022 and the entirety of 2023.

Initial Production:

In order to reduce the cost of the mug, the team plans to secure multiple manufacturers to produce the various components in mass quantities. By doing so, the price per unit is reduced from \$265 to \$68.80. This will also reduce the overall retail price of the product to \$174.99. Once the parts are ordered, the team plans on renting a small 4000 square foot warehouse and hiring 5 people for \$20 an hour to build 1200 mugs in 2022. From the data from the Pre-Launch Marketing Campaign in Phase 1, the team plans on integrating new features on the mug which will provide more consumer usability. Additionally, the team plans on outsourcing the design of the package, so that the user will be able to get the high quality feel of the product as soon as they receive the package.

Marketing:

Further marketing initiatives during phase 2 is explained in the section titled “Sales and Marketing”.

Phase 3:

This phase focuses on scaling production and nationally securing distribution partners.

Scaled Production:

A focus on scaling production by hiring new team members in both the manufacturing and marketing departments to scale production and awareness of the product on the national and international scale.

Distribution Partners:

If Phase 1 and Phase 2 are successful, distribution partners will need to be secured to further the awareness of the product. Further goals to talk to major market competitors such as Dunkin’ and Starbuck to both rent the patent for the pod structure and place the Phoenix Mug on their shelves will be achieved at this time.

Gantt Chart of Operating Plan:

Phase	Task	2022		2023		2024		2025	
1	R&D	■							
	Pre-Launch Marketing	■							
2	Initial Production		■	■	■				
	Marketing		■	■	■	■	■	■	■
3	Scaled Production					■	■	■	■
	Distribution Partners					■	■	■	■

Market Analysis

According to IBISWorld, Consumers spent \$46.2 billion on coffee in 2021 and has an economic footprint of 1.6% of the total U.S gross domestic products¹. This figure is forecasted to grow at a Compounding Annual Growth Rate (CAGR) of 2.20% from 2021 to 2026². More importantly it is also predicted that by 2025, 83% of spending and 21% of volume consumption will be attributed to out-of-home consumption¹. According to the National Coffee Association (NCA), 62.0% of US adults drink coffee on a daily basis, 42% of which are aged 25-39³. From this analysis on the total addressable market, it can be concluded that entering this growing market will be an opportunity for sustainable profitability.

Within this large addressable market, our target demographic is focused on Gen X, Millennial, and Gen Z consumers who enjoy coffee and other warm beverages on the run. The team wanted to cater to a large demographic as we understood the misery of drinking cold and stale coffee after a long commute to work, paying \$5 for a cup of coffee before class, and using complicated brewing devices on camping trips.

Although this target audience is broad, many time-strapped consumers moved toward drinking gourmet instant coffee, which attributes to a high demand for portable coffee pods such as K-cups. Our product

was also designed around fixing a flaw in the portable coffee industry as most competitors utilize single use plastic pods to hold the coffee. By creating a pod that can be used multiple times, the product will provide an alternative to competitors products, as ours will have a reduced environmental footprint. This shift will target the Millennial and Gen Z demographics.

Another significant aspect of the market is the barrier to entry. Although 47.2% of the market share is made up of Starbucks and Dunkin' brands¹, our team will only need to focus on the cost for building a network of suppliers, manufacturers, distributors and retailers, as well as material cost and intellectual property. Throughout this business plan, we will, or already have, addressed overcoming these barriers to entry.

Product

The Phoenix Mug is the first portable self contained, brewing and heating mug designed specifically for our consumers lifestyle. The ability to quickly brew everything from coffee, hot chocolate and tea anytime, anywhere has never been more accessible or convenient.. The product also includes a phone application where users can pair their mug directly to the app, giving them the capabilities to set the type of drink and brew directly on the application. Unlike other products on the market, we offer consumers an easy to use alternative to enjoy a hot beverage on the road while reducing their environmental footprint through reusable pods.

The product works by having the user prep the mug by filling the mug with water, and inserting a filled reusable pod into the cap. Whenever the user wants to brew a cup of coffee, they open their phone application, select the type of drink they want and press brew. From here, the mug will heat the water to the proper temperature and when the proper concentration is reached, the coffee is ready for consumption. The overall process is simple for the user and is designed with safety as the number one priority. ***Figure 1*** depicts the functionality of the Phoenix Mug. Additionally, the mug has the ability to self-clean if the user selects the self-clean on their app after they add water and a cleaning agent into the mug. Detailed

drawings of our product can be seen in *Figure 2* and *Figure 3*. In the future, the company plans to provide multiple volume sizes by utilizing more advanced battery technology.

Competitive Analysis

When it comes to portability, environmental concerns, and ease of use, the Phoenix Mug has an advantage over its competitors. Most major competitors that promote self-brewing devices sell stand alone coffee makers where the consumer is bound to the location of the maker. Additionally, these competitors utilize single use plastics, which are harmful for the environment. Other competitors who promote self-heating mugs, only warm previously hot liquid. Leading competitions within the coffee brewing industry, such as Starbucks, Keurig, Nespresso, and Ember Mug, have managed to minimize consumer cost by reducing the unit cost due to scaling.

- A typical beverage drinker who buys Starbucks, will spend \$6 per visit. Assuming they visit Starbucks 5 times a week, they would spend \$1,560 per year. Starbucks receives 37.8 million customers per month which accounts for 36.2% of the Coffee & Snack Shop market in the US¹.
- Keurig, owned by the Dr. Pepper Snapple Group, sells both the non-portable brewing mechanism and the single-use plastic coffee pods known as K-cups. The non-portable brewing mechanism will cost between \$60-\$250⁴. However, each pod will cost \$0.75. If the consumer drinks two cups a day, over the course of the year, they would spend \$547.50 on K-cups alone.
- Nespresso, owned by Nestle, sells both non-portable brewing mechanisms and single-use plastic coffee pods. The non-portable brewing mechanism will cost between \$150-\$600⁵ and the average pod cost is \$1.15 for 7.77 ounces of coffee. If the consumer drinks two cups a day, over the course of the year, they would spend \$876 on the pods alone.
- The Spirited Mug, owned by HitModern, is a mug with a unique brewing process involving the use of a magnetic stirring rod. These mugs are individually priced at \$30⁶. The main drawbacks with this product are the lack of a heating system and the ability to only accommodate dissolvable freeze-dried coffee.

In order to successfully appeal to consumers, the Phoenix Mug both focuses on the creation of a new product which highlights the best features of each of the competitors while retaining the advantage of being eco-friendly. Outlined in *Table 1*, Is a competitive analysis assessment which compares the competitiveness for the Phoenix Mug, Nespresso, Ember Mug, and Keurig. The Phoenix Team plans on filing a utility patent application for the ability to brew and heat up beverages in a portable mug. This will give the team a competitive advantage when it comes to producing a unique product. Filing a patent allows the company to claim the intellectual property of the Phoenix Mug's function and method of brewing. Having this type of leverage prevents other competitors from stealing the functions and drawings of each of the components to the mug.

Another factor to take into consideration is the longevity of the product itself. According to the manufacturers of our competitors, the life span for the Keurig and Ember mug are 5 and 6-8 years respectively⁷. Due to the simple design of the Phoenix Mug and the properties of the materials, the life span should be expected to extend to 14.5 years with the battery life being the limiting factor. The ability to have a life span that lasts more than double than the next competitor, gives the Phoenix Mug another competitive advantage.

Sales and Marketing

Since the Phoenix Mug is designed for a diverse age group, it is necessary to explore marketing strategies to capture each age group. A big marketing tool that our team intends to utilize is social media. Since the main target audience of our product is Gen X, Millennials, and Gen Z, social media is a great platform to use to increase awareness of our product. To capture Gen X and Millennials, Facebook ads will be utilized. To cater to Gen Z and Millennials, Instagram and TikTok will be the primary focuses of social media marketing.

Facebook advertisements are extremely popular and easy to use. The Ad Manager allows for our team to set a daily budget as well as what type of action will be paid for. These actions include views, clicks, and downloads⁹. For our ads, we would highlight the differences between our products and what is currently available. The main difference being that our product brews the coffee directly in a mug, which is a truly portable form that is not currently on the market. Additionally, some other features to highlight would be the reusable coffee pod and charging capabilities.

Additionally, The Phoenix Mug will utilize TikTok as part of its social media marketing. TikTok has become one of the biggest social media platforms. However, the advertisement process is a bit more expensive and caters towards large companies. However, the Phoenix Mug intends on creating a profile that will feature the product and participate in many viral trends as a way to reach Gen Z and Millennial audiences. Another way the team intends on using TikTok is through the use of influencers. By teaming up with influencers, it will allow for our product to reach even larger audiences. Additionally, there is a lot of evidence to support that using influencers as a form of marketing is extremely beneficial as recent surveys show 90% of respondents believe influencer marketing is an effective form of marketing⁸.

In order to sell and distribute Phoenix Mug, we plan on using different methods as the company grows. To begin, we plan on using Kickstarter. Using Kickstarter will allow for pre-orders so that we can begin selling our product. As the company grows, we will first partner with small retail stores before moving up to major retail stores such as Walmart and Costco as well as using our own website and

Amazon. In partnering with retail stores, we would have them sell our mug at their physical locations. Additionally, we will offer our product on our own website. At the beginning, we would limit the amount of mugs sold through our website to ensure a smooth shipping process. As the company grows, we will partner with shipping companies to allow for more sales to be made through our website. Due to its growing size, we are also planning on using Amazon to sell our mugs. As the product grows, there is potential to create custom pods to team up with coffee chains such as Dunkin and Starbucks, but that would likely not be explored until the company grew.

Management Team

Our management team consists of three mechanical engineering students at the College of New Jersey. Although we all have engineering backgrounds, each member of the team offers a wide-range of expertise to handle both engineering and business challenges. Each member is in contact with friends or family members in the business world who provide guidance on the appropriate estimations and business practices.

Managers:

Jason Rosen - Co-Founder, COO and CFO

Mr. Rosen is a senior mechanical engineering major with experience in product development and prototyping. He has expertise in finance and electronics. He is involved in a few clubs on campus including, the Professional Academic Society of Technical Advancement Club, the American Society of Mechanical Engineers (ASME), The Society of Professional Engineers (SHPE), Chess Club, and Theta Tau. He also has an affinity for adapting products to meet the consumers standards based on changing trends. Mr. Rosen's curiosity to be well rounded when it comes to creating a start-up will be useful when it comes to co-lead a successful team.

Jessica Ruby - Co-Founder and CMO

Ms. Ruby is a senior mechanical engineering major at The College of New Jersey and is involved in my different organizations on campus including Society of Women Engineers (SWE), American Society of Mechanical Engineers (ASME), Omicron Delta Kappa Honor Society (ODK), Tau Beta Pi Engineering Honor Society, and Professional Academic Society of Technical Advancement Club. Jessica holds leadership positions in SWE as treasurer and in Professional Academic Society of Technical Advancement Club as secretary. Her goal after college is to work as a design engineer and work her way up to program management.

Brett Murphy - Co-Founder and CTO

Mr. Murphy is a senior mechanical engineering major at The College of New Jersey who specializes in the design of the inner capsule as well as the pod and cap designs. Mr. Murphy uses his skills in solidworks and Ansys to accurately model the Phoenix Mug to ensure that all of the components are successfully integrated into the main assembly. Additionally, he is also involved in the American Society of Mechanical Engineers and serves as one of the Founding Fathers in the Kappa Delta Rho Nu Gamma Chapter. He is also involved in club sports as the shortstop and sergeant at arms on the TCNJ Club Baseball team.

Financial Plan

1200 units is the predicted unit production for the 2022 fiscal year. We plan on initially selling the mug at a retail price of \$174.99 per unit . This price is competitive with other products in the home brewing and the portable mug markets. At this price point, the price will exceed the variable cost, which insures both long and short term profitability when scaled to higher volumes. Assuming production will begin in 2022, the income statement will project both sales and pricing for the fiscal 2022 year.

Phoenix Corporation Income Statement For the Year Ended December 31, 2022		
	Total	Per Unit
Sales Revenue - Mug	209,988.00	174.99
Sales Revenue - Pod	57,600.00	4.00
Cost of Goods Sold		
Materials	82,560.00	
Labor	4,800.00	
Total COGS	87,360.00	72.80
Gross Profit	180,228.00	102.19
Operating Expenses		
Rent	25,935.00	
Equipment Purchased	2,000.00	
Marketing	8,000.00	
Overhead	2,500.00	
Total Operating Expenses	38,435.00	32.03
Operating Profit	141,793.00	70.16
Interest Expense	7,500.00	6.25
EBIT	134,293.00	63.91
Tax Expense		0.00
Net Income	134,293.00	63.91

As the income statement shows, given a sales volume of 1200 Phoenix mugs, the company will yield a net profit of \$134,293.00 in 2022. The largest of the expenses being materials costing \$82,560.00 per 1200 units and rent costing \$25,935 (3,990 square feet at \$6.50 per square foot per year). A total of \$2,000 will be allotted to equipment. The team also plans on participating in a moderate to aggressive marketing campaign with a budget of \$8,000. Additionally, a budget of \$2,500 is given to overhead. In order to support the initial cost of goods, the team will need to take out a 5-year loan of \$100,000 at a 7.5% APR. Alternatively, to reduce personal liability, and improve the team's chances at getting seed money, the team plans on raising money through a campaign on Kickstarter. This will also provide a greater outreach through marketing.

It is estimated that it will take one working hour to produce 5 mugs which translates to 240 hours per all 1200 mugs. This results in a \$4,800 labor cost at \$20 per hour. Data from our income statement is then used as a basis for our projected balance sheet for the end of the 2022 year.

Phoenix Corporation Balance Sheet (USD) December 31st, 2021	
Assets	
Current Assets	264,293.00
Cash & Cash Equivalents	0.00
Accounts Receivable	0.00
Inventory	0.00
Supplies	264,293.00
Total Current Assets	
Long-Term Assets	
Property, Plant, & Equipment	2,000.00
Total Long-Term Assets	2,000.00
Total Assets	266,293.00
Liabilities & Stockholder's Equity	
Current Liabilities	
Accounts Payable	0.00
Notes Payable	0.00
Total Current Liabilities	0.00
Long-Term Liabilities	
Long-Term Debt	100,000.00
Total Long-Term Liabilities	100,000.00
Stockholder's & Equity	
Common Stock	0.00
Retained Earnings	166,293.00
Total Stockholder's Equity	166,293.00
Total Liabilities & Stockholder's Equity	266,293.00

The shown balance sheet is based on the assumption of winning \$30,000 from the MBPC. All revenues are assumed to have been received and expenses paid in cash. Supplies and inventory are consumed through production and sales. The information on the cash flow statement is derived from the income statement and the balance sheet.

Phoenix Corporation Statement of Cash Flows For the Year Ended December 31, 2022		
Cash Flows from Operating Activities		
Cash Receipts from Operating Activities	209,988.00	
Cash Disbursements from Operating Activities	<u>(123,795.00)</u>	
Net Cash Provided by Operating Activities		86,193.00
Cash Flows from Investing Activities		
Purchase Equipment	(2,000.00)	
Net Cash Provided by Investing Activities		(2,000.00)
Cash Flows from Financing Activities		
Business Loan	100,000.00	
Interest Expense	(7,500.00)	
Net Cash Provided by Financing Activities		<u>92,500.00</u>
Net Increase in Cash		176,693.00
Cash at Beginning of Period		<u>30,000.00</u>
Cash at End of Period		<u><u>206,693.00</u></u>

The investments made in the production equipment will allow for an increased production in the 2023' financial year. Additionally, the team will have a total of \$206,693.00 by the end of the 2022 year. A near total distribution of the cash flow will be re-invested to insure continued operations as a \$22,000 per year will be taken out to pay off the loan. With this cash flow, a projected unit production of 2300 is predicted. Overall, this business model will yield a projected cash flow of \$299,502.00 in 2023. Since, the limiting factor in production is labor, if 25 people are employed for 40 hours per week, the Phoenix team can produce 261,000 mugs per year. As shown in **Table 2**, Assuming sales could match capacity, this volume will achieve an EBIT of \$39,153,655.00.

Conclusion

The Phoenix Mug is the first portable self brewing and heating coffee mug. The product combines aspects of both portable coffee mugs and self-heating mugs to make a user-friendly mug that can brew coffee within itself. This eliminates the stress of getting ready for work and prevents the user from drinking cold coffee during their long commute. The Phoenix Mug has a wide audience range and will be joining a \$46.2 billion industry. Our product aims to allow the user to brew the perfect cup of coffee anytime and anywhere. Overall, through the support of the Mayo Business Plan Competition, Phoenix Mug has great potential for future growth.

Table 1: Competitive Strength Assessment

Competitive Strength Assessment										
(rating scale: 1 = very weak, 10 = very strong)										
Key Success Factor	Importance Weight	Phoenix Mug		Nespresso		Ember Mug		Keurig		
		Strength Rating	Weighted Score	Strength Rating	Weighted Score	Strength Rating	Weighted Score	Strength Rating	Weighted Score	
Retail Presence	0.1	7	0.7	10	1	8	0.8	10	1	
Environmental Sustainability	0.15	9	1.35	4	0.6	7	1.05	3	0.45	
Ease of use	0.15	8	1.2	5	0.75	8	1.2	6	0.9	
Portability	0.15	10	1.5	2	0.3	10	1.5	2	0.3	
Price Point	0.15	4	0.6	7	1.05	6	0.9	8	1.2	
Self-Brewing	0.15	10	1.5	10	1.5	0	0	10	1.5	
Maintain Heat	0.15	10	1.5	0	0	10	1.5	0	0	
Totals	1		8.35		5.2		6.95		5.35	

Table 2: Income Statement for Maximum Manufacturing Capacity (25 employees)

Phoenix Corporation		
Income Statement		
For the Year Ended December 31, 2022		
	Total	Per Unit
Sales Revenue - Mug	45,672,390.00	174.99
Sales Revenue - Pod	12,528,000.00	4.00
Cost of Goods Sold		
Materials	17,956,800.00	
Labor	1,044,000.00	
Total COGS	19,000,800.00	72.80
Gross Profit	39,199,590.00	102.19
Operating Expenses		
Rent	25,935.00	
Equipment Purchased	2,000.00	
Marketing	8,000.00	
Overhead	2,500.00	
Total Operating Expenses	38,435.00	0.15
Operating Profit	39,161,155.00	102.04
Interest Expense	7,500.00	0.03
EBIT	39,153,655.00	102.01
Tax Expense		0.00
Net Income	39,153,655.00	102.01

Figure 1: Schematic of Product Functionality

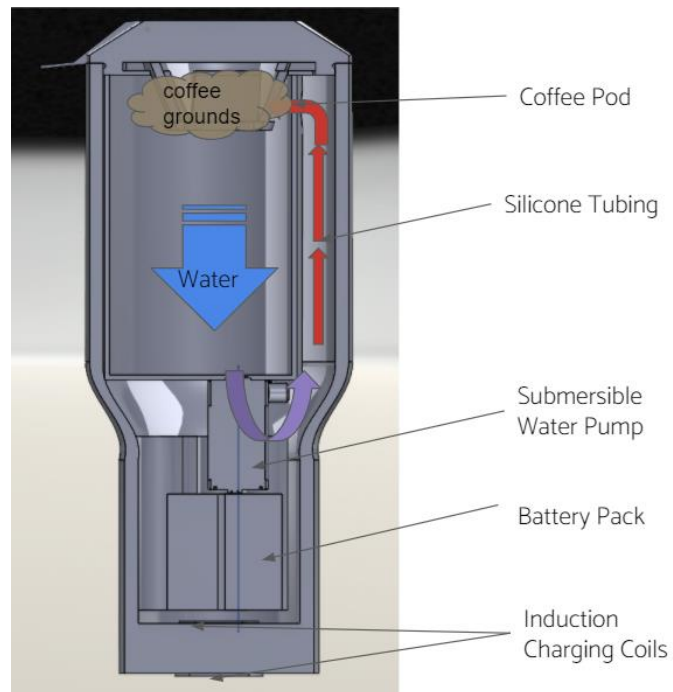


Figure 2: CAD model of Phoenix Mug



Figure 3: Expanded CAD model of Phoenix Mug



References

1. IBISWorld, I. (n.d.). *Industry market research, reports, and Statistics*. IBISWorld. Retrieved January 14, 2022, from <https://www.ibisworld.com/>

2. *Coffee - worldwide: Statista market forecast*. Statista. (n.d.). Retrieved January 14, 2022, from <https://www.statista.com/outlook/cmo/hot-drinks/coffee/worldwide>
3. *National Coffee Association*. NCA. (n.d.). Retrieved January 14, 2022, from <https://www.ncausa.org/Newsroom/NCA-releases-Atlas-of-American-Coffee>
4. Whole Latte Love. (n.d.). *The long-term cost of a Keurig is frightening*. Whole Latte Love. Retrieved January 14, 2022, from <https://www.wholelattelove.com/blogs/articles/the-long-term-cost-of-a-keurig-is-frightening#:~:text=The%20Actual%20Cost%20of%20A,the%20time%20of%20this%20writing>
5. *Nespresso Vertuo Coffee Pods & Capsules: Nespresso USA*. Nespresso Vertuo Coffee Pods & Capsules | Nespresso USA. (n.d.). Retrieved January 14, 2022, from <https://www.nespresso.com/us/en/vertuo-coffee-pods>
6. *Home*. Techanova. (n.d.). Retrieved January 14, 2022, from <https://techanova.us/product/automug/>
7. What is the lifespan of a Keurig coffee maker? Monsieur Coffee. (2020, August 11). Retrieved January 14, 2022, from <https://monsieurcoffee.com/coffeemakers/what-is-the-lifespan-of-a-keurig-coffee-maker/>
8. How much does facebook advertising cost?: 2022 pricing guide. WebFX. (2022, January 11). Retrieved January 16, 2022, from <https://www.webfx.com/social-media/pricing/how-much-does-facebook-advertising-cost/>
9. Geysler, W. (2021, December 20). What is influencer marketing? - statistics, Trends & Market Size. Influencer Marketing Hub. Retrieved January 16, 2022, from <https://influencermarketinghub.com/what-is-influencer-marketing/>