New Product Development for Philips Coffee Maker

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Executive Summary

To successfully launch a product, companies must evaluate their target markets' preferences for each of said product's attributes. We explored such product preferences for two separate market segments of coffee-maker consumers and concluded that each segment holds vastly different predilections. As a result, Philips should introduce two separate products that appeal to the tastes of each segment starting with segment 1's immediate opportunity. The opportunity with segment 1 will generate a total market share of 51.8% for Philips while adding our second product focused on segment 2 generates a total overall market share of 61.8%.

Introduction and Background

Philips, a leading health technology company that produces consumer products in personal wellness and domestic appliance categories, requested our help identifying a new product design and market segmentation strategy for their coffee makers. The Dutch enterprise, which was established in 1891, now does business in over 100 countries, many of which have large coffee-drinking populations.

In the consumer packaged goods industry, it is estimated that 70-80% of newly introduced products fail within the first year, and the eventual failure rate can be as high as 90%. To help Philips mitigate risk of new product introduction and analyze potential return, we used data from a conjoint analysis study and utilized mixture multinomial logit models to assess the importance of product attributes for each consumer segment. This allowed us to build an optimal product that greatly appeals to the target, thereby gaining the greatest share.

Data and Methodology

To help Philips analyze consumer preferences for coffee makers and evaluate the market potential for a new coffee machine, we leveraged data from a conjoint analysis study of 185 respondents. These participants completed eight choice sets, indicating which product profile they would purchase from the subset of options listed in each set. Respondents evaluated the coffee machines based on their brand, capacity, price, and whether or not they had a filter and/or a grinder.[1] We must assume these attributes are comprehensive of all relevant characteristics consumers consider when purchasing in the category. We used the Glimmix software to fit multinomial logit models for different segment sizes. This enabled us to determine the optimal number of segments (two) and the utility that each segment would get from each attribute. Identifying and targeting segments is critical to Philips success because this approach allows for economies of scale; Philips can efficiently serve the needs of a sizable consumer segment.

We supplemented the model results with contextual information. Researching consumer trends in coffee consumption, we were able to better understand the broader context and consumer preferences for grinders and filters in particular. News articles and industry reports provided details on the growing market for at-home coffee and consumers' developing interest in artisanal whole bean coffee (which requires users to grind) over pre-ground coffee (Mordor, 2020; Wallace 2020). To a lesser extent, external research revealed that health conscious

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[1] See Appendix I for a full list of attributes and levels.

consumers use filters for various benefits such as removing chlorine, bad taste, and odors from water used to make coffee (Braun, 2020).

Key Findings

We found that the two-segment model has the lowest BIC (a criterion for model selection for which the lowest score is preferred), and therefore 2 is the optimal number of segments for our sample. Parameter coefficients for price, capacity, and grinders, attributes Philips can control, were significant, meaning they would be replicated in other samples. Roughly 74% of the market belonged to segment 1 and segment 2 accounted for 26%. Each segment retains unique attribute preference with respect to the segments, products, and brands. Specifically: [2]

Segment 1: 74% of the market	Segment 2: 26% of the market
Favorable attitudes towards Philips; see Krup's as average given the brands' p-values. Relatively price-sensitive; $59 is the price that interests them to buy the coffee maker. Prefer a larger capacity carafe (15-cup), the utility of which is five times higher than the average. Desire a grinder as well, but including a filter in the coffee maker results in an unfavorable change in utility, 8.6 times worse than the average.	Do not distinguish between brands. Favor a relatively small carafe capacity; the utility for a 5-cup capacity is four times higher than the average. Less price-sensitive. If the coffee maker prices at $79, it will have 5.7 times higher purchasing intentions than the average. Including a filter in the coffee maker will not change purchasing intentions. Adding a grinder does not help to boost sales (the p-values of brands, price, and filter are insignificant).

Cuisinart's product designs are meaningful benchmarks for Philips given that they offer valued characteristics (e.g., 15-cup capacity or grinder), but their offerings pose greater competition than Krups. Product 3 in particular captures about half of the overall market (before introducing a Philips machine). Krups, on the other hand, does not perform well in segment 1 since their product designs do not fulfill needs. Their product line includes 5-cup and 10-cup capacities, which means they are not serving consumer's need for a 15-cup capacity. In fact, the utility of 15-cups in segment 1 is 5 times higher than the average. Krups' product line also lacks grinders and their weak market share suffers accordingly.

Philips' immediate opportunity is to meet the needs of the large segment with a product that offers their preferred characteristics. A $59 Philips coffee maker with a 15-cup capacity, no filter, and a grinder would result in a total market share of 51.8%, and most importantly, meet segment 1's needs.[3] Philips would take share predominantly from Cuisinart's $79 product-the

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[2] See Appendix II for current product attributes and their utilities among each segment.
[3] See Appendix III for details on product 1.

only other product with a grinder-because Philips (a more favored brand) would offer the same grinder functionality and greater capacity at a lower price.

Future product development should consider segment 2 since this segment accounts for about one-quarter of the market. A 5-cup Philip's coffee maker for $79 with a filter but no grinder would help Philips meet their needs and raise market share to 41.9% within this segment.[4] It is important to note though that the filter is not a value-add feature, the attribute's weak performance in our models could be due to the fact that no products currently offer a filter. We can infer that consumers are unaware of the benefits of a filter and perhaps Philips could message on the enhanced taste to generate demand for this unfamiliar feature. Messaging should also accentuate the benefits of freshly grinding coffee to assure the growing customer base interested in this attribute that they are getting the best quality coffee. In time, we estimate the overall market share for Philips' products would increase from the original 51.8% with the one new product, to 61.8% with both. It is important to note that costs associated with adding a water filter or other features must be taken into account, and are beyond the scope of our analysis.

Conclusions and Recommendations

Philips should enter the coffee maker market with at least one product in the near term. Philips should launch a product aimed at gaining the most overall market share. Since segment 1 is three times larger than segment 2, the optimal product profile would meet segment 1's needs by introducing a $59 Philips coffee maker with a 15-cup capacity, no filter, and a grinder. Marketing efforts should highlight that they have the largest capacity available and offer the sought after grinder to maximize impact. Philips can then expect a 51.8% overall market share.

For Philips to dominate the entire category without isolating over one quarter of consumers, the company should launch a second product to meet segment 2's needs in the longer term. Development can be financed by profits from the first product. A $79 coffee maker with 5-cup capacity and a filter would cater to segment 2. Messaging must emphasize the benefits of the filter since this is an unfamiliar feature and convey the premium offering given consumers' preference for the moderate price. Philips can differentiate itself from competitors with the filter because, unlike with segment 1, adding a filter will not affect the consumers' odds of choosing the product. Both products would boost Philips's segment 2 market share to 41.9%, as well as increase overall market share to 61.8%.[4]

A second strategy would be to launch both products, as specified, at the same time to acquire as much market share as possible from the get-go. We believe that the first strategy is optimal because developing one product at a time would require a smaller initial investment in development and marketing, as well as the opportunity for Philips to focus the majority of its resources on the product it is launching. Furthermore, Philips should allocate resources towards studying both segments' response to filters once the second coffee machine is launched, as well as the influence of other features like product design (e.g., color, shape, number of buttons) on consumers' purchase intentions to continue to maximize their market share.

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[4] See Appendix IV for details on product 2.

Appendices: Tables, Exhibits, Figures

Appendix I: Attributes and levels

Attribute level	Brand	Carafe capac-ity	Price	Water filter	Auto-grinder
1	Philips	5 cups	$59	Yes	Yes
2	Krups	10 cups	$79	No	No
3	Cuisinart	15 cups	$99		

Appendix II: Products profiles and estimates (with optimal Philips product for segment 1)

Krups Coffee Maker			Cuisinart's Coffee Maker		
Level (Product)	Seg 1 Coeff	Seg 2 Coeff	Level (Product)	Seg 1 Coeff	Seg 2 Coeff
5-cup (1)	-0.173	0.414	10-cup (3)	-0.322	0.271
10-cup (2)	-0.322	0.271	15-cup (4)	-0.495	0.685
$59 (1)	0.19	0.213	$99 (3)	0.087	0.785
$79 (2)	-0.277	0.572	$79 (4)	-0.277	0.572
No Filter (1/2)	0.855	-0.107	No Filter (3/4)	0.855	-0.107
No Grinder (1/2)	-1.119	0.698	With Grinder (3)	1.119	-0.698

Appendix III: Market share predictions per segment (with first product)

Market Share	1: Krups	2: Krups	3: Cuisinart	4: Cuisinart	5: Philips
Segment 1	2.6%	1.4%	23.3%	3.9%	68.8%
Segment 2	35.8%	44.4%	2.3%	14.1%	3.3%
Overall	11.2%	12.6%	17.9%	6.6%	51.8%

Appendix IV: Market share predictions per segment (with both products)

Market Share	1: Krups	2: Krups	3: Cuisinart	4: Cuisinart	5: Philips
Segment 1	2.6%	1.4%	23.3%	3.9%	68.8%
Segment 2	21.5%	26.7%	1.4%	8.5%	41.9%
Overall	7.5%	8%	17.6%	5.1%	61.8%

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