

Product attribute optimization using social data

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Introduction

Product development is one of the quintessential aspect of competitive advantage a company focuses on. Product offering has no less part to play in building market share, brand image and the very much sought after, customer loyalty. A product is nothing but a collection of multiple attributes to serve the functional, emotional and aspirational needs of users. With spiralling cost and risks associated with a new product launch, it is imperative to strike a right balance between desirability, feasibility and affordability. And, the best person to know what to develop is the consumer herself. Is it? Might not be 100% dependable!

Traditionally, companies have been doing market research to collect consumer preferences and doing conjoint analysis on the collected data are quite prevalent for understanding what customers value most and optimize the product consequently. This approach is heavily dependent on veracity of the survey and premise that customers can appropriately quantify what they prefer. During the survey a customer might respond more intuitively than rationally which is generally not the case when the actual purchase is made. Also, it's a very time and resource heavy activity.

Under Digital Transformation, more and more companies are making their presence felt online. Whether it is setting ecommerce store or collecting voice of customers (online) from Facebook, Twitter or Ecommerce market places, the efforts to collect online data is like never before. Along with this social listening, the companies are also focusing on star ratings to quantify the customer satisfaction. Merge this information to the competitive intelligence data provided by different market research aggregators and we have a vast data pool which not only reveals customer preference, but also the sales data which validates the hypothesis. Gap analysis (both price & product) follows the suit.

Traditional Conjoint Analysis

Conjoint analysis is a statistical study to determine the benefits/preference people perceive and associate with multiple product attributes. It starts with a primary market research activity where respondents are required to rank the placards with disparate values of multiple attributes of a product, as deemed valuable by the customer, followed by conjoint analysis of the collected data. This is intended to measure the prominence of attribute combination, which would be utilized for product development and estimation of market size and revenue. Despite widespread use of Conjoint, there are multiple challenges with this analysis:

- a) **Complexity:** With multiple variables to analyse for, the study becomes a bit complex and difficult for comprehension. Also, influenced by method of data presentation, function form, change in utility value by intended usage etc.
- b) **Irrationality of respondents:** The whole premise of this analysis is people undertaking the surveys are behaving as rationally as they do during actual product purchase. But, as highlighted by Gordon Wyne (2006), that's not always true. This could be because of multiple reasons like large number of variables and product attributes, personal interest, fatigue etc.
- c) **Time and resource intensive:** Primary research, by design, require more time, human and financial resources. A bottle neck may arise due to any of the factors.

Technology has seen plenty of advancements over the decades, with cars nowadays being equipped with several sensors such as LIDAR, cameras, radars and more. With different technologies being adopted in the car, a supercomputing chip with Deep Learning technology is what helps to drive the car.

Approach

1. Leveraging Sales Data

Multiple market research firms provide sales data of different brands in a domain (for e.g. PC sales). This data is rich with information like product name, product attributes, price ranges, time etc. Using this data as predictor and sales units/revenue as response variable, multiple statistical models can be developed to find the relative importance of an attribute to the sales. This would empower the product design team to focus on the attributes that matters the most to a customer, consequently resolving the doubt of which would be given more weightage: a 4GB RAM or a 500GB SSD. Such study, across brands would validate if customer preference changes with brands. Ratings given on own website or marketplace can also be integrated in the analysis.

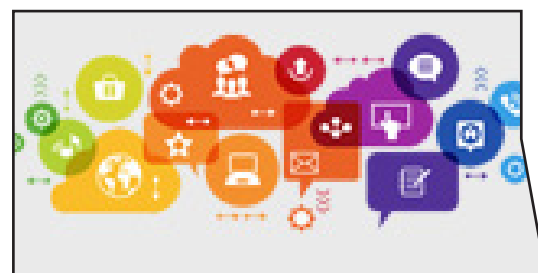


A crucial aspect to observe here is that the rank of on-sales-influence of an attribute may differ from one product series/style to other. For one product style, product material could be of highest influence while for other, it could be RAM size.

As proposed in a paper published by Kris Johnson et al. (2014), the product attributes can be utilized in developing a model to predict the sales of a product which is yet to be launched.

2. Social Listening

With more and more user being vocal about their experience with the product, Social Listening attained a key role to play. People are talking on not just Facebook or Twitter but also on websites like Epinions.com and Cnet.com. Listen to the consumers using advanced text mining & Natural Language Processing(NLP) technologies and learn what is going good or what are the pain points customers are facing with your or competitor's product. Brainstorm over frequently used keywords and get a heat map of what interests people most. Go back to the drawing board and make sure that your next product hits where it matters! Though segmentation is nothing new but effective targeting is more about demography and psychographic variables; which is why understanding behaviour and lifestyle is imperative. What follows as next step is micro segments based on the comments posted across platforms. A micro segment would help in being too exact with what the customers want and design the portfolio accordingly.



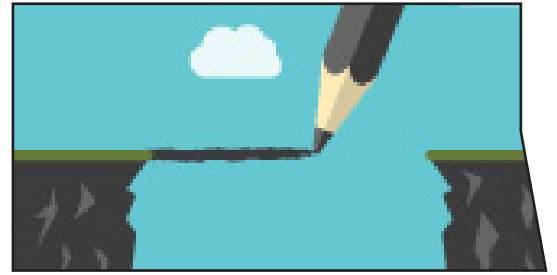
3. Cookie Capture

Cookies can be a great source of information as they track what people search or what interests them. With data collected from targeted cookies, analysing the products of interests can give us prized information of what attributes appeal to customers the most. Since this is very dynamic, it can help in taking tactical steps like introducing a new SKU. With a wider time range, one can understand how the preferences are changing and plan to introduce new product series.



4. Product Offering Gaps

Realizing the gaps in product portfolio of competitors is an opportunity that could be capitalized on with products customized to the need. With traditional and advanced data harvesting engines, attribute level data of all products offered on a website can be captured effectively. A matrix of products vs. features created using the secondary data collected from different websites could be a great tool to identify the white spaces and get the first mover advantage.



Challenges

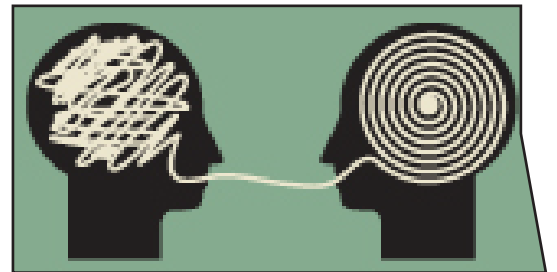
1. Data Assimilation

With myriad of data sources at hand, the real challenge is coordinating and combining the data sources to blend the data in a way which is not only manageable but also provide one true story. All the data sources should talk to each other instead of being put up in a silo and increasing the size and complexity of data. Thanks to your technical team, the same product might have a different name on your website, catalogue sheet used by merchandisers, supply chain systems, sales support database and promotion's database used by the marketing team. Though it is not in your control, but your competitor website will definitely call the product with a different name and identifier id. All these make it difficult to analyse and compare the competition with your own product and implement intelligent solutions internally.



2. Sentiment Distillation

Understanding what customers are talking about is a very critical phase in product offering. It is imperative to know what people like or dislike about your product, why people are using alternate products and what feature change the market is vying for. This will help not only in tweaking the current offering but also designing the product for future. Enabling companies in understanding which platform most buyers flock to, they can now be more aggressive on the specific platform. According to an HRB publication by Susan Fournier et al. - "Armed with traces of revealed opinions and behaviours, managers can at long last discover the manifestations and ripple effects of their actions on consumer behaviour. Social listening competency will be critical to competitive advantage in the digital age".



Till date, the text mining or Natural Language Processing (NLP) capability is still in developmental phase and pose challenges in correctly extracting, categorizing and summarizing the comments posted across different forums and websites. Though, with increase in inbuilt libraries and classes for NLP, the task is becoming easier every day, there still lies a challenge in deriving actionable insights

3. Review & Rating

A product comes under multiple variants with different attributes. A website might show same reviews and rating across all the variants or it may be different. Also, a rating can be further divided into multiple levels or it might be one single rating which is calculated based on backend algorithm running over numerous ratings given by customers. Assimilation and attribution of these ratings and reviews to one single variant is rather tough but is worth every drop of sweat since it helps in designing and managing the portfolio.



How Minerva can help you reach your goals

1. With the current features, how competitive is the product OR What product features are most prominent in the market?
2. What is the price of a closest competitor product OR How the prices are moving for a time period of interest?
3. Which competitor is offering the highest promotions & discounts OR What are the most featured promotions for this festive season?
4. Which website/aggregator is offering the target products?

By coalescing the colossal data, which organizations collect every day, with advanced analytics, Minerva takes your dashboards to the last mile from the stage of data pukes to actionable recommendations. The efficient data mining engines map oddly named but similar products from diverse data sources as one, enabling the user to tie the story and get one true picture of business. With advanced statistical models running at the backend, Minerva can even tell you exactly which product feature has the highest influence on revenue. This information can be leveraged for future product designing.

Minerva assists the users with filtered social listening, to get a better grip on ever elusive and evading relevancy in social data. A subscriber can understand what is being talked about the product and category to circle what customers are looking for and design a better product proposition. Get to know the brand, realize the competition, gain insights on campaigns and top of all – empathize with the customer

About Course5 Intelligence

Course5 Intelligence enables organizations to make the most effective strategic and tactical moves relating to their customers, markets, and competition at the rapid pace that the digital business world demands. We do this by driving digital transformation through analytics, insights, and Artificial Intelligence (AI). Our clients experience higher top line and bottom line results with improved customer satisfaction and business agility. As we solve today's problems for our clients, we also enable them to reshape their businesses to meet and actualize the future.

Rapid advances in Artificial Intelligence and Machine Learning technology have enabled us to create disruptive technologies and accelerators under our Course5 Intelligence suites that combine analytics, digital, and research solutions to provide significant and long-term value to our clients.

Course5 Intelligence creates value for businesses through synthesis of a variety of data and information sources in a 360-degree approach, solution toolkits and frameworks for specific business questions, deep industry and domain expertise, Digital Suite and Research AI to accelerate solutions, application of state-of-the-art AI and next-generation technologies for cognitive automation and enhanced knowledge discovery, and a focus on actionable insight.



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