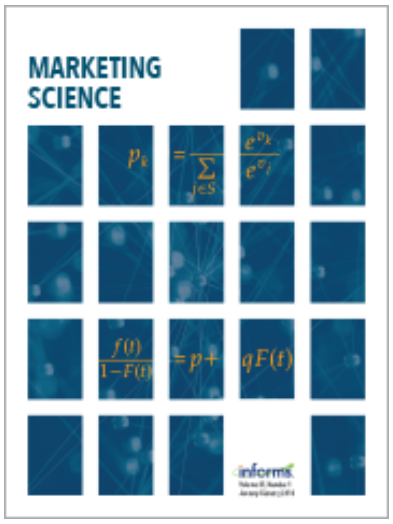


Marketing Science

Publication details, including instructions for authors and subscription information:
http://pubsonline.informs.org

Practice Prize Paper—Category Optimizer: A Dynamic-Assortment, New-Product-Introduction, Mix-Optimization, and Demand-Planning System

Ashish Sinha, Anna Sahgal, Sharat K. Mathur,

To cite this article:
Ashish Sinha, Anna Sahgal, Sharat K. Mathur, (2013) Practice Prize Paper—Category Optimizer: A Dynamic-Assortment, New-Product-Introduction, Mix-Optimization, and Demand-Planning System. Marketing Science 32(2):221-228. https://doi.org/10.1287/mksc.1120.0746

MARKETING SCIENCE
Vol. 32, No. 2, March–April 2013, pp. 221–228
ISSN 0732-2399 (print) | ISSN 1526-548X (online)

http://dx.doi.org/10.1287/mksc.1120.0746

Practice Prize Paper

Category Optimizer: A Dynamic-Assortment, New-Product-Introduction, Mix-Optimization, and Demand-Planning System

Ashish Sinha
School of Marketing, Australian School of Business, University of New South Wales, Sydney, New South Wales 2052, Australia, a.sinha@unsw.edu.au

Anna Sahgal
AS Marketing Associates, Sydney, New South Wales 2121, Australia, anna.sahgal@optusnet.com.au

Sharat K. Mathur
Symphony IRI Group, Chicago, Illinois 60661, sharat.mathur@symphonyin.com

The purpose of this paper is to describe the implementation of a category management tool known as Category Optimizer™ at Foster's Wine Estates Americas for one of its brands, the Beringer California Collection. Foster's was facing a common management problem: harnessing its portfolio of Beringer California Collection wines to increase profitability, improve its competitive position, and defend against a disruptive new entrant in the U.S. wine market called Yellow Tail. Category Optimizer combines the parsimony of an internal market structure with the advances that have been made in *assortment planning in operations research*, *assortment and stock-keeping-unit–level modeling*, *mixed logits*, and the *marketing literature on the perceptions of variety of assortment* to develop and estimate a model on readily available store scanner data. The model subsequently uses these results to inform strategic and tactical decision making. This approach led to recommendations that initially seemed counterintuitive; the normal response would be for Foster's to consider lowering prices to maintain share and volume, a strategy not inconsistent with many of the recommendations of past models. However, considering the additional degrees of freedom that a product range offered for defense, we demonstrated that a combination of price increases together with the introduction of a volume-flanker product in a new channel would improve profits, increase revenue, and protect and enhance market share. These were successfully implemented in early 2008, earning rich dividends for the company; increasing profitability by 70%, revenue by 3%, and earnings before interest and taxes by 8.5%; and having a positive impact on its brand ranking. In fact, in 2008, it debuted as sixth among the international wine brands. It also managed to play an important role in deposing Yellow Tail, the market share leader, from its dominant position. We conclude the paper by providing examples of other companies where this approach has also been successfully implemented and by discussing some avenues for future research.

Key words: disruptive innovations; category management; internal market structure; assortment; perception of variety; brand portfolio
History: Received: March 18, 2012; accepted: July 19, 2012; Russell Winer served as the Practice Papers Section editor-in-chief for this article. Published online in *Articles in Advance* November 30, 2012.

Introduction

The purpose of this paper is to describe the implementation of a category management tool called Category Optimizer™ at Foster's Wine Estates Americas for one of its brands, Beringer California Collection (BCC). Category Optimizer is an advanced analytical tool used by retailers and manufacturers alike to make decisions about assortment, price optimization, and demand planning. It uses readily available store-level scanner data to estimate a market share model and subsequently uses these results to inform strategic and tactical decision making. It combines and advances literature in disparate areas of *assortment planning in operations research* (Kök and Fisher 2007), *internal market structure* (Elrod and Keane 1995, Popkowski Leszczyc et al. 2004), *assortment and stock-keeping-unit–level modeling* (Inman et al. 2008, Sinha et al. 2005), *aggregate logit modeling* (Chintagunta 2001, 2002), *mixed logits* (Sinha 2000), and the *marketing literature on the perceptions of assortment* (Hoch et al. 1999). The case illustrates the use of this tool by BCC to respond to a highly challenging situation of falling market share and profitability and increased competitive pressure, heightened by the threat from a disruptive innovation in the form of Yellow Tail. Taking the

United States and the world by storm, this innovation, in turn, changed the competitive landscape of the wine industry. Using a market-driven strategy of sensing, dissemination, and response, BCC not only managed to increase profitability, market share, and brand equity but it also minimized the effect of Yellow Tail's presence on its own franchise while playing an important role in deposing Yellow Tail from its dominant position.

Although Category Optimizer borrows its methodology from aggregate-level market share models, much of the research can been applied to extremely small data sets that have a few SKUs, rendering these models inapplicable to most practical settings. In that respect, an important contribution of this work is to develop a system that is applicable to large-scale problems commonly found in applied settings. We make four important contributions. First, we propose an assortment-planning tool that is grounded in consumer behavior theories such as perception of variety, attribute information processing, and similarity and dissimilarity of SKUs. Second, we develop an analytical solution that provides managers with the ability to understand the role of assortment-planning systems on channel acceptance of a new product. Third, we develop an assortment-planning tool that is applicable to real-life, large-scale optimization problems. Fourth, our solution optimizes both the assortment of products and the marketing mix for each of the products in the category. Finally, our solution is the first to combine the recent advances in the area of market structure—specifically, factor-analytic models—with that of assortment models. To the best of our knowledge, this is the first attempt to provide such a solution in either academia or marketing practice.

We report our research in the following manner. We first outline the management problems being faced by Foster's. This is followed by a description of the general approach and methodology used in this project. The next section describes how the approach was applied in order to generate a strategy for Foster's. We then describe the outcome of the implemented strategy and provide evidence of the impact that our recommendations have had on the performance of the business. This is followed by a brief description of the various projects for which Category Optimizer has been used. We conclude the paper with a discussion about the future opportunities that this stream of research provides.

The Case of the Beringer California Collection

Operating as three regional businesses in Australia, Asia, and the Pacific; in the Americas and Europe; and in the Middle East and Africa, Foster's Group owns, markets, and distributes an international portfolio of beer, wine, spirits, cider, and nonalcoholic brands. Internationally, it produces, markets, and exports the world's leading portfolio of premium wine brands including Penfolds, Wolf Blass, Rosemount, Lindeman's, Saltram, Seppelt, Wynns, and Yellowglen from Australia; Beringer, Etude, Stags' Leap, and Chateau Souverain from North America; Matua Valley and Secret Stone from New Zealand; and Castello di Gabbiano from Italy.

Problem Statement

Foster's acquired Beringer Wine Estates in 2000 for AUD2.6 billion. Beringer Wine Estates was a market leader in California's premium wine industry. The company consisted of six award-winning Californian wineries: Beringer Vineyards, Meridian Vineyards, Chateau St. Jean, Chateau Souverain, Stag's Leap Winery, and St. Clement Vineyards, plus an imported portfolio of premium brands from Italy, France, and Chile. Beringer had an excellent range of strongly branded successful products, including Chateau St. Jean 1996 Cinq Cépages cabernet sauvignon, which was awarded wine of year in the 1999 *Wine Spectator's* Top 100. Beringer also controlled more than 10,000 acres of vineyard land, all in the coastal region of California.

Acquiring Beringer gave Foster's a firm foothold in the American market and initially provided rich rewards in terms of higher revenue and profitability. However, by 2004, Foster's wine division reported a profit of merely USD182 million, which was down by more than 21% from the previous year's profit (*Sydney Morning Herald* 2004). The confluence of several factors played an important role in creating a difficult situation for Foster's: an oversupply of wine, particularly in California; tight competition; the increasing value of the Australian dollar; and the increased cost of procuring grapes. In addition, increases in the cost of electricity and other power sources in California in the subsequent years made it very difficult for Foster's Wine Estates Americas to remain profitable. Some analysts felt that Foster's had overpaid for the acquisition. Of all the different product lines, BCC was the hardest hit as it was positioned in the highly competitive lowest-price tier of USD4–6. Given that the cost of producing wine had escalated dramatically, BCC was seeing an erosion of profits and revenue.

Increased Competitive Pressure and the Rise, Rise, and Rise of Yellow Tail

On top of the cost pressures that the BCC faced, the intensity of competition (particularly in the grocery channel, BCC's primary distribution channel) had increased substantially. Since 2002, the top 10 brands

of wine, of which 9 were in the lower-price tier, had been losing market share, and by 2007, the cumulative market share for these brands had dropped by over 33% (Tinney 2007). By 2007, the market was configured so that 60% of the active brands in the grocery channel were ones that had been introduced only after 1999, and these new brands accounted for 18% of the market share (Tinney 2007). By 2006, BCC was no longer in the top 10 wine brands. In addition, it needed to be wary of cheap wine imports from all over the world. One such new brand that bucked the downward trend was Yellow Tail. Introduced in 2000, it began dominating the wine market the world over within a few years, including in the United States, and particularly in the grocery channel. Kim and Mauborgne (2005) argue that Yellow Tail succeeded by "creating uncontested market space and making the competition irrelevant"—a Blue Ocean Strategy that changed the competitive landscape. The Yellow Tail brand managed to target beer drinkers rather than wine drinkers by largely distributing its product through the grocery channel, the preferred channel of beer drinkers for the purchase of liquor. Taking these factors into account Yellow Tail, disrupted the wine market by using a market-driving strategy—not by doing things better but by doing things differently, the hallmark of all disruptive innovations (Christensen 2000). Interestingly, it raised the price of its wine above the budget market, line pricing its products at $6.99. By 2006, Yellow Tail had become a firm disruptor (Sood and Tellis 2011), gaining the top spot in the United States and garnering 3.15% of the market share in the grocery channel.

BCC's Dilemma

As a success story was unfolding in the form of Yellow Tail, BCC found itself in a position of vulnerability. Its zinfandel varietal was a starter wine aimed at the uninitiated wine drinker, the same target market as that of Yellow Tail's. BCC's blush line was predominantly pink, comprising the white and red zinfandels, white merlot, and rosé. Chardonnay was (and continues to be) one of the most successful varietals in the United States, with a 22% market share growing at a rate of 4% in 2007 (VINAMERICAS 2011). What could BCC's management learn from Yellow Tail's experience? Given the positive response that Yellow Tail's chardonnay, cabernet sauvignon, and merlot received in the grocery channel, would it not make sense for BCC to introduce these varietals? Before doing so, however, BCC first needed to understand the competitive interaction between its current products and the proposed introductions.

Although these introductions would help BCC defend its turf, this would not solve the problem of razor-thin margins that were causing it to lose money. The price of the product line would have to be increased. The experience Yellow Tail had showed that the market could support such a price increase. However, Foster's was not certain if this would carry over to BCC franchise. What about BCC's brand equity—was it similar to that of Yellow Tail's? This analysis led Foster's to consider a contrastrategy of increasing the price by up to a dollar. However, it was unclear what the impact of a 20% price increase would be on market share, revenue, and profits. To make up for the lost market share that would result by taking a price increase, BCC decided to introduce a few new varietals in sequence, such as chardonnay, merlot, and cabernet, in conjunction with the price increase. It is fair to say that both internally and externally, the proposal to increase price by 20% was resisted.

What would the loss of market share be if the price were increased by 5%, 10%, 15%, or 20%? What percentage price increase would lead to an increase in revenue? Would the price increase push loyal customers to the next quality tier of Beringer's wine? Would the new introductions lead the BCC zinfandel varietal to lose its share to the overall detriment of the franchise? Which varietal should BCC introduce first? What would the impact of these introductions be on the franchise? Would it grow the franchise or cannibalize the existing products, leading to a redistribution of volume but with no overall growth? These were questions that required empirically based answers before an important decision of this nature could be made for Foster's largest product line.

The Solution

The managing director of Foster's Wine Estates Americas commissioned a boutique Chicago firm to help provide answers to some of these questions. This boutique firm used the services of AS Marketing International (ASMI) to come up with an analytics-based solution. Because Foster's owns a portfolio of brands in the wine category, it was interested in understanding the impact of price increase not only on Beringer but also on the other brands that it owns. In addition, Foster's also required recommendations for a varietal introduction. Therefore, it was decided that a SKU rather than a brand-level model be estimated. Category Optimizer was applied to the USD4–6 price tier that comprised approximately 3,000 SKUs. In the section below, we describe the approach and methodology used by Category Optimizer, followed by a section on findings for the Foster's study.

Approach and Methodology

We build on Kök and Fisher's model (2007) in which the total demand for a product is assumed to be due to transferable (substitutable) and nontransferable (nonsubstitutable) demand. Transferable demand

can be defined as the portion of the total volume of a product that other products in the assortment would gain if it was deleted, whereas nontransferable volume is the portion of the total volume that would be lost if a particular product is deleted. The demand model is informed by a neo-Lancastrian approach (Louviere et al. 2000) rather than a Lancastrian approach, the important distinction being that consumers in the former paradigm are assumed to buy products for the benefits that the features of the product provide (e.g., brand, size) rather than the feature itself. Previous work in the areas of assortment and aggregate mixed logit models (Berry et al. 1995) uses features (e.g., brand and size) and feature levels (e.g., Coke and Pepsi) to identify different characteristics of a product and assortment—for instance, variety and reduction in assortment size (Boatwright and Nunes 2001). However, these studies assume that consumers perceive the extent to which a feature level is different from all the other feature levels is the same. An attribute-based methodology (Sinha et al. 2005), on the other hand, assumes that competition among brands is, for instance, due to underlying attributes or benefits (i.e., quality and taste), and that two brands in a consumer's decision set may be perceived as similar (i.e., Coke and Pepsi) yet distinct from another brand (i.e., Mountain Dew). This is a distinct advantage of the proposed approach.

To study transferable demand, we estimate aggregate-level logit models using data on 3,000 SKUs across 59 accounts for two years at a weekly level (from January 2005 to December 2006). A key feature of this is a factor-analytic procedure that summarizes preferences for a large number of levels of each feature into two dimensions and allows for the construction of a competitive map for each feature. To determine nontransferable demand, we enter a uniqueness score based on the distance between SKUs in perceptual space into a category demand function. This allows us to determine the impact of a SKU's positioning, i.e., whether it has close substitutes, on category demand. The model used to estimate the transferable and nontransferable demand function is provided in the online appendix (available at http://dx.doi.org/10.1287/mksc.1120.0746).

Results and Discussions

As mentioned above, the data set comprised approximately 3,000 SKUs across 59 accounts, such as Jewel-Chicago, for two years at a weekly level, from January 2005 to December 2006. The data used to estimate the model were at a SKU/account/week level. We, however, note that only a subset of SKUs was available in a given account in a particular week. These SKUs were described by four different features: brand, size, varietal, and country of origin; in total, there were 25 brands, 3 sizes, 14 varietals, and 7 countries of origin. Price, promotional, and distribution information were also included in the analysis. As BCC's intent was to introduce new varietals to its predominantly blush wine offering, the management needed an understanding of the degree of competitive interaction between different feature levels—for instance, varietals. Specifically, BCC's management was interested in understanding the competitive interactions between its blush offerings (dominated by white zinfandel) and chardonnay, cabernet, and merlot. Figure 1 provides a graphical representation of the process for model estimation.[1]

We now turn our attention to providing details for the analysis of varietals. Figure 2 provides a map of the varietals, showing some degree of competitive interaction between blush wines and other varietals. The map also shows that chardonnay does not compete that closely with the blush varietals of zinfandels, white zinfandels, and white merlot, implying that chardonnay would be a great addition to BCC's current product line. A similar analysis of the "attractiveness" or equity of the different varietals, provided in Figure 3, where the equity scores were obtained by exponentiation of the coefficients for the different varietals of the logit model (mean coefficients provided in for varietals Table A.1 in the online appendix), shows that both chardonnay and white zinfandel are the most preferred varietals, with zinfandel being the least preferred of all. Of the red varietals, pinot noir has the highest attraction score. Combining the results from the different analyses, we recommended the introduction of a pinot noir, a merlot, and a cabernet sauvignon to the market, with a simultaneous introduction of chardonnay at an increased price. This particular recommendation was provided based on the analysis showing a lack of competition between chardonnay and BCC's blush varietals, implying that introducing a chardonnay would be largely incremental to BCC's franchise. The introduction of the chardonnay should be followed by the introduction of the pinot noir, the merlot, and the cabernet sauvignon, though we were indifferent between the introduction of merlot and cabernet sauvignon.

A similar analysis of brands showed that BCC and Yellow Tail had the highest brand equity, implying that as the market had already borne a price premium of a dollar above the budget range for Yellow Tail, a similar increase of price for BCC, given its brand equity, could be supported by the market. A second

[1] Table A.1 in the online appendix provides the parameter estimates for different features and feature levels.

Figure 1 Modelling for the BCC Project

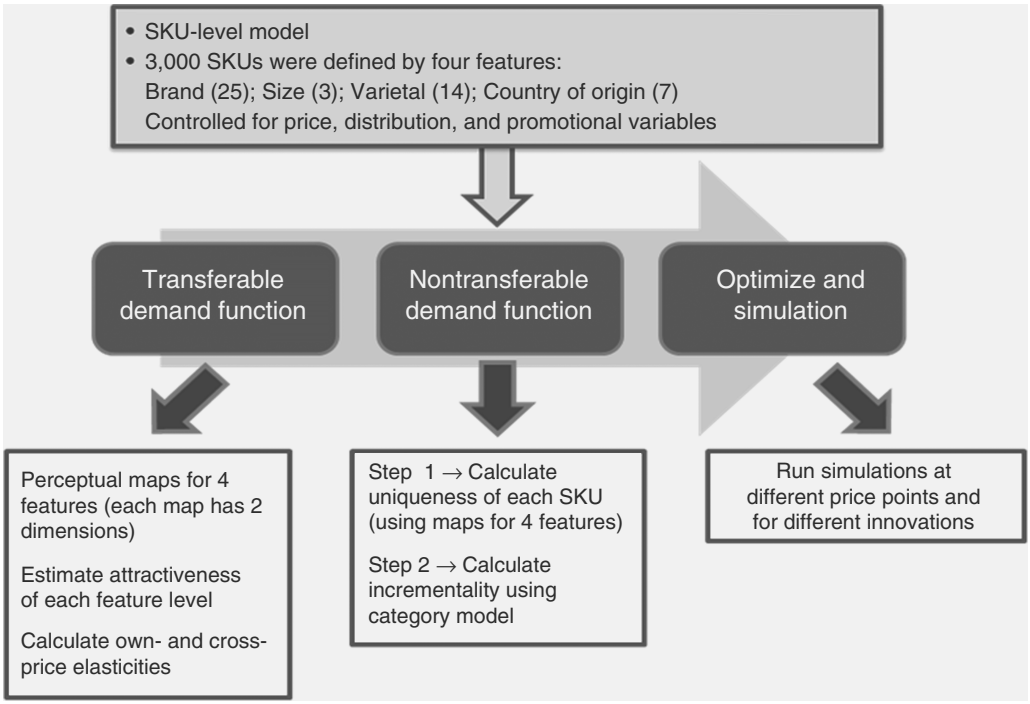
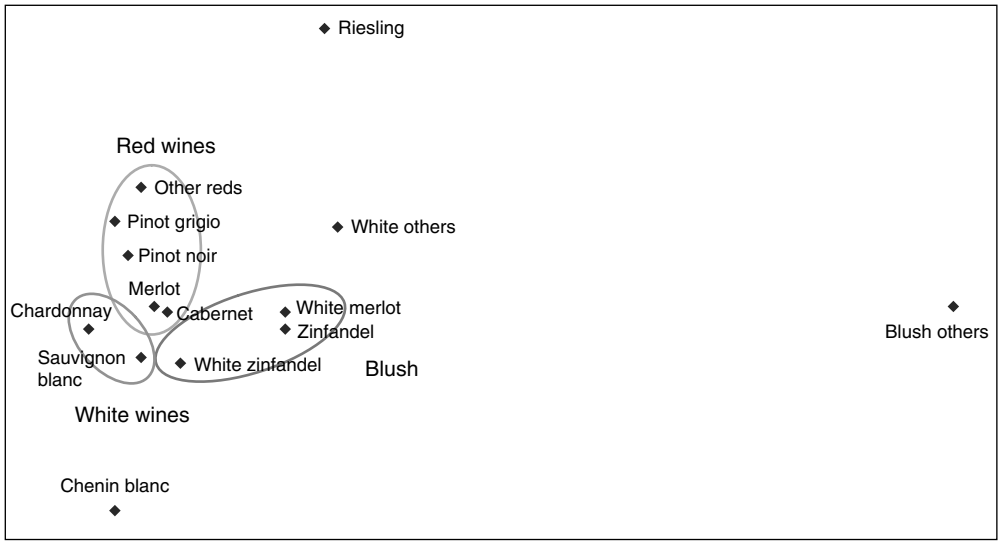


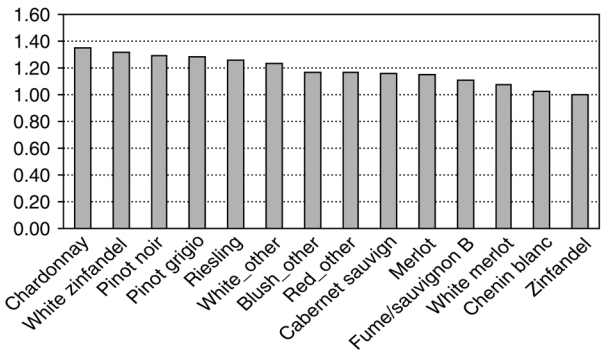
Figure 2 Competitive Map for Wine Varietals



stage of the analysis consisted of simulating the effect of price increase and the simultaneous release of new varietals. We used the technique provided by Inman et al. (2008) to optimize the effect of the price increase and introduction of the new varietals on the market share and volume under strategic and managerial constraints. The average price elasticity of the blush category was approximately 0.86, which implied that an approximate 20% increase in price would lead to a decrease in share of 17%. Given the cost structure of the business, this price increase was required for the profits to return to positive. However, a simultaneous release of the chardonnay would make up for lost market share. We also identified pinot noir as a varietal that has a huge potential in this price tier; however, given the expensive grapes that are required for its production, the company decided to explore this opportunity later.[2]

[2] Table A.2 in the online appendix provides the uniqueness scores and volume incrementals to the category for the four new Beringer SKUs.

Figure 3 Varietal Attractiveness or Equity Scores



Impact of the Project

The project was delivered in June 2007. It had the full support and involvement of the managing director of Foster's. The senior management was closely involved in the project, and the authors helped them make numerous decisions. The study provided important inputs to the senior management's decisions. For instance, the management expected a push back from both the company's sales force and retailers. The price simulator was used as a way of showing the sales force and the retailers various "what-if?" scenarios to understand the ramifications of potential competitor reactions. The McKinsey Corporation was hired to help with the implementation of this strategy in July 2007. We note that a triple mix strategy, which includes a price increase coupled with new product introductions in a new channel, is not common in the fast-moving consumer goods (FMCG) industry. The successful implementation of this strategy required stakeholders, shareholders, retailers, employees, and senior management to completely buy into these actions, and it took the organization, with the help of external consultants, over six months to do so.

Figure 4 provides the timeline for BCC's implemented strategy. The price increase, with the simultaneous introduction of chardonnay, was implemented in early 2008 followed by the introduction of cabernet sauvignon and merlot in the second half of the year. As predicted, BCC lost 14% of its market share; however, its revenue increased by 0.7%. By the end of 2008, the BCC chardonnay line was ranked the number one new wine of the year in the United States based on both volume and dollar sales,[3] and the cabernet sauvignon and merlot were ranked the two most top-selling varietals of the second half of 2008.[4] These introductions made up for the loss of market share resulting from the price increase. By the end of 2008, the BCC increased its profitability by 70% and its revenue by 3%, and it arrested its slide in market share, which was down by only 10% in comparison to 14% at the beginning of the year. By the end of 2009, BCC had regained its lost market share. The market share of BCC had dropped to 1.22% in January 2008 from 1.42% in 2007 right after the price increase was taken, which increased to 1.28% by the end of 2008, and subsequently to 1.54% in 2009. This goes to show that the new products grew the brands organically. As for Yellow Tail, it lost its dominant position in 2009 because of numerous strategic and tactical innovations introduced by its incumbents, including BCC. These outcomes show that our empirical results are consistent with those of Sood and Tellis (2011). They find, too, that the disruptor in many instances dominates the industry only for a few years, losing its position as incumbents respond to the disruptor.

Organization-Wide Impact

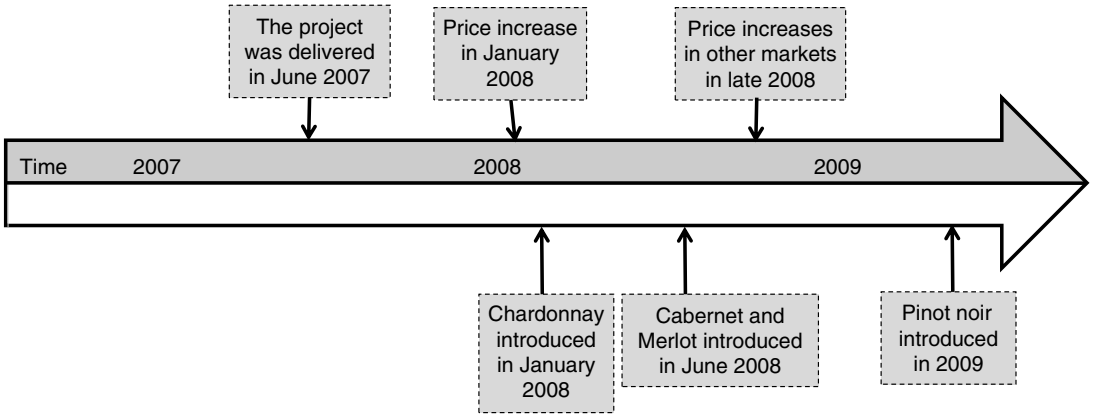
Not only did this project have tangible financial benefits, it also had a significant impact on the organization by substantially increasing its brand equity and also putting it on a path of innovation by introducing new varietals (such as Moscato) in new channels (drug and mass-merchandiser channels). Intangible Business, a UK-based firm, has identified the top 100 international wine and spirit brands in its annual survey every year since 2006, using a mix of hard and soft measures such as whether the brand is forward looking, measured by projected brand growth and market shares. In 2006 and 2007, Beringer did not make the list, whereas in 2008, as a result of the implemented strategy, it debuted at number 44 among the wine and spirits brands and at number 6 among the international wine brands (Intangible Business 2008). In addition, Beringer was ranked number 8 in 2008 among the American wine and spirits, whereas, as mentioned earlier, it did not make the cut in either 2006 or 2007. This demonstrates that the project not only had tangible financial benefits but significant long-term positive benefits that had organization-wide cultural ramifications that put it on a path of innovation.

The project had a big impact across the organization. When the CEO of Foster's, Trevor O'Hoy, unexpectedly resigned in June 2008, the company issued a writedown of AUD700 million of its global wine business, linked primarily to the purchase of Beringer and Southcorp. Given the losses of Foster's American wine business, the level of scrutiny from investors was intense. In his annual investor's speech on the state of the business in 2009, Angus McKay, the chief financial officer of Foster's, said the following (Foster's Group 2009, p. 13):

[3] According to Nielsen new wine item reports for 52-week period ending December 13, 2008.

[4] According to Nielsen new wine item reports for 26-week period ending December 13, 2008.

Figure 4 Timeline for the Implemented Strategy



> One year on from the price increase it is worth highlighting the development of the broader Beringer California Collection and the increased levels of profit flowing from this brand . . . . The expanded California Collection provides retailers with a strong Beringer branded varietal set in the fast growing $4–$6 price point. This is a significantly enhanced position compared to the primarily pink wine offering we had a little over 12 months ago. And while Beringer White Zinfandel volume is as expected below the prior year, unit profitability and earnings are up . . . . Over the next 6 months as we start to lap the price increase we expect an improvement in the comparative performance of Beringer White Zinfandel. We also expect the broader California Collection to continue to benefit from the expanded varietal offering and increased distribution.

This speech demonstrates both the importance of the project and the organization-wide impact it had at Foster's.

Generalizability of Category Optimizer

As mentioned in the Introduction, we have successfully implemented this analytics product in many other companies. ASMI partners with numerous consulting houses to implement these projects for a wide array of clients, and its current and ex-partners include Synovate MMA in the United States, and Synovate Aztec and Summit Insights in Australia. Procter & Gamble, Merisuant, and GlaxoSmithKline in Australia and Johnson & Johnson and Home Depot in the United States are just some of the companies that have used this analytic product to obtain insights for both durable and nondurable product categories in varied areas of new product introduction, price optimization, and assortment optimization as well as for broader strategy issues that cut across several areas mentioned above. This demonstrates the generalizability of the solution and its applicability to diverse geographical settings and managerial problems. This solution has impacted over USD9 billion dollars of sales. Dan Eggleston of Synovate MMA, in his 2011 testimonial, says the following:

> MMA has leveraged the Category Optimizer since 2008, providing our clients with critical insights and actionable recommendations to manage their product portfolio within their respective categories. Our clients have been able to realize true value through the Category Optimizer's simulation capabilities and have been very pleased with the recommendations that have resulted. We will certainly continue to use this methodology to provide these types of insight to our clients on a go-forward basis.

Conclusion

The purpose of this research was to demonstrate the effectiveness of Category Optimizer, a category management tool that extends and builds on the current literature in the area of assortment planning by combining recent advances in the areas of internal market structure, perception of variety, and operations research, particularly in the area pertaining to assortment. We describe the application of this product to the case of Beringer Californian Collection, a wine label that found itself in a difficult position because of industry, competitive, and market forces. The wine market was disrupted by an Australian brand, Yellow Tail, that went from being unknown to being one of the most successful brands in the history of the wine industry. The case shows that being a "fast follower," which entails learning from the disruptor, adapting, and responding quickly, is a way by which the advantage gained by a disruptor can be negated or minimized. We also briefly discuss how the analytic product, Category Optimizer has been used the world over by a number of FMCG, pharmaceutical, and retail companies to provide insights into a plethora of problems related to category management.

Electronic Companion

An electronic companion to this paper is available as part of the online version at http://dx.doi.org/10.1287/mksc.1120.0746.

Acknowledgments

All omissions and errors are the responsibility of the authors.

References

Berry ST, Levinsohn J, Pakes A (1995) Automobile prices in market equilibrium. *Econometrica* 60(4):841–890.

Boatwright P, Nunes JC (2001) Reducing assortment: An attribute–based approach. *J. Marketing* 65(3):50–63.

Chintagunta PK (2001) Endogeneity and heterogeneity in a probit demand model: Estimation using aggregate data. *Marketing Sci.* 20(4):442–456.

Chintagunta P (2002) Investigating category pricing behavior at a retail chain. *J. Marketing Res.* 39(2):141–154.

Christensen CM (2000) *The Innovator's Dilemma* (Harper Business, New York).

Eggleston D (2011) Letter to the authors. June 23, Marketing Management Analytics, Wilton, CT.

Elrod T, Keane M (1995) A factor–analytic probit model for representing the market structure in panel data. *J. Marketing Res.* 32(1):1–16.

Foster's Group (2009) 2009 Interim results briefing. CEO and CFO addresses, February 17, Foster's Group, Southbank, VIC, Australia. http://www.Foster'sgroup.com/common/files/CEO-andCFOaddresses.pdf.

Hauser JR, Shugan SM (1983) Defensive marketing strategies. *Marketing Sci.* 2(4):319–360.

Hoch SJ, Bradlow ET, Wansink B (1999) The variety of an assortment. *Marketing Sci.* 18(4):527–546.

Inman J, Park J, Sinha A (2008) A dynamic choice map approach to modeling attribute-level varied behavior among stockkeeping units. *J. Marketing Res.* 45(1):94–103.

Intangible Business (2008) The Power 100: The world's most powerful spirit and wine brands. Report, Intangible Business, London. http://www.intangiblebusiness.com/store/data/files/412-The_Power_100_2008.pdf.

Kim WC, Mauborgne R (2005) *Blue Ocean Strategy: How to Create Uncontensted Market Space and Make the Competiton Irrelevant* (Harvard Business Press, Boston).

Kök AG, Fisher ML (2007) Demand estimation and assortment optimization under substitution: Methodology and application. *Oper. Res.* 55(6):1001–1021.

Louviere J, Hensher D, Swait J (2000) *Stated Choice Methods: Analysis and Applications* (Cambridge University Press, Cambridge, MA).

Popkowski Leszczyc P, Sinha A, Sahgal A (2004) The effect of multi–purpose shopping on pricing and location strategy for grocery stores. *J. Retailing* 80(2):85–99.

Sinha A (2000) Understanding supermarket competition using choice maps. *Marketing Lett.* 11(1):21–35.

Sinha A, Inman JJ, Wang Y, Park J (2005) Attribute drivers: A factor analytic choice map approach for understanding choices among SKUs. *Marketing Sci.* 24(3):351–359.

Sood A, Tellis GJ (2011) Demystifying disruption: A new model for understanding and predicting disruptive technologies. *Marketing Sci.* 30(3):339–354.

Sydney Morning Herald (2004) Tough times for Foster's Beringer. (February 13) http://smh.com.au/articles/2004/02/13/107654-8222747.html.

Tinney M-C (2007) New brands dominate wine aisles, yet established brands account for most wine sales. *Wine Bus. Monthly* (May 29) http://www.winebusiness.com/wbm/?go=getArticleSignIn&dataId=49285.

VINAMERICAS (2011) Introducing your wines to the US market. Presentation at the Miami International Wine Fair, September 23, Miami, FL. http://www.miamiwinefair.com/docs2011/2011MIWF_IntroducingYourWines.pdf.