Executive Summary of "Predicting Consumer Tastes with Big Data at Gap"

Introduction

In Gap Inc, Art Peck took over the company as a CEO in 2015, and completely changed the creative design process. Peck fired his creative directors to follow a data-driven approach. Peck directed the company to utilize big data to decide the clothing line for the next season.

Business challenges

Forecasting fashion trends with key aspects of design, color, fabric, pattern needed identification of multiple data sources. Once design was finalized the creative team needed a methodology in order to predict the trends and also want to analyze whether the approach was applicable across all the three brand: GAP, Old Navy and Banana Republic.

Identification of data sources, web scrapping and appropriate analysis

We identified two types of data on the basis of origin of the data points

In-house data: SKU sold, time from shelf to POS, online and offline reviews, website visits

External data: Competitor offerings, google trends, E-commerce best sellers, Social media

External data

Competitor analysis

We scrapped Zara's new offerings in men jean's category and extracted the product information and ran a hypothesis test with null hypothesis that mean of the prices of products from Zara and Gap sample data are not different. With $p>.0.5$, we failed to reject null hypothesis so we concluded that difference in mean is statistically insignificant. This allowed us to analyze the competitor

offerings, and this really can help us in incorporating product features from competitors into GAP's new offerings.

E-commerce offering

We scrapped the best sellers in men jean's category, built a data model to predict the rank of a product under different attributes like color, price, brand image etc. These dependencies can utilized by GAP in optimizing its fashion to improve ranking its product.

Rank= C + B1*Color + B2*Price + B3*Color*Price + B4*Material composition + B5* Brand image/value + B6*Brand image*Price

Interaction term of color*price takes into consideration that certain colors demand a small premium from other colors and similar is with brand image*price, certain brands enjoy premium based on popularity.

Fashion website

We were also bale to extract fashion images from Vogue. This technique can be applied to other sources like Instagram, fashion blogs and image recognition technology can be implemented to extract key features. These identified features can help in getting an idea of upcoming trends.

Google trends

Scraping google trends gives insights on rising, trending queries related to a search term. For our chosen product "Jeans", it revealed trending styles, colors and brands that people are searching.

Big Data: the right approach for 3 brands?

We identified that the success of big data relied on three factors: availability of in house and external data, complexity in design and customer expectation.

For brand Banana republic, in house data from stores like (SKU sold, reviews, time to POS) will be limited as sales cycle is bit longer, so brand won't be able to collect data points with high frequency which alters the entire objective forecasting trends and optimizing supply chain. Secondly high end customer segment of Banana republic expect clothes to be designed from designer not from machines and expect some in store experience and association with reputed designers which can't be provided with big data only.

Limitations:

Data scrapped from competitor new offerings of Zara was very as the new offering were very limited. So the t test conducted was not appropriate on this small sample size. Data scrapped from Amazon best-selling website to build model with rank as dependent variable was applicable across entire product category and not specific to the segment in which GAP operated.

Recommendations/Action Items:

On the basis of qualitative and quantitative analysis, we recommend GAP to employ creative director for data validation of output of the training data set before being used in predictive model and enhance brand image by employing reputed designers, as higher segment customers expect clothes to be designed by designers rather than machines.

We also recommend to increase the visibility and creating brand image with respect to the audience a company is catering to. For example, Banana Republic should prioritize being part of high-end fashion shows to associate with such kind of customers.