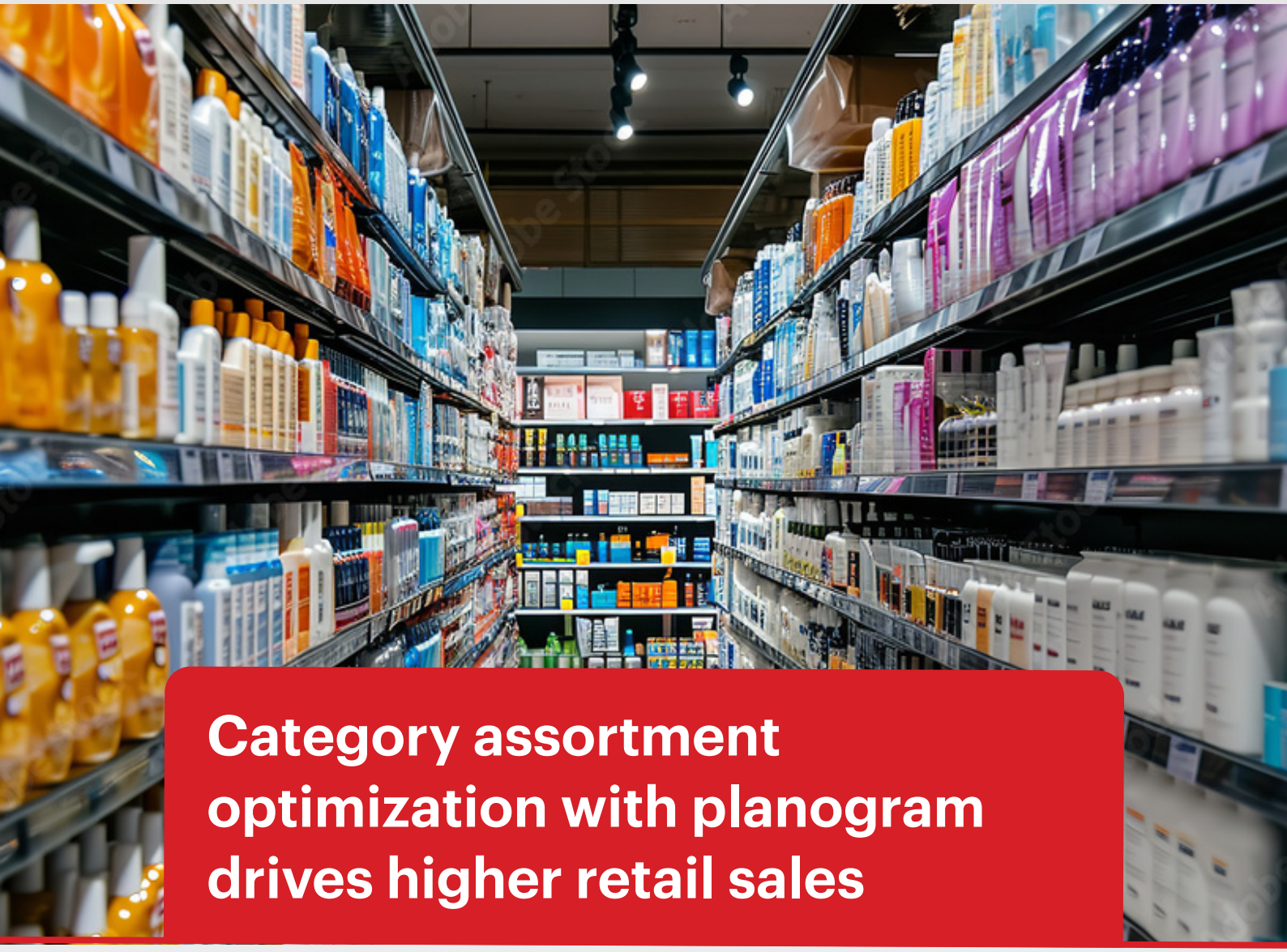
Case Study

SIGMOID

An American consumer health company



Category assortment optimization with planogram drives higher retail sales

Overview

Sigmoid helped a leading American consumer health company improve category sales with profitable assortments for a big box retailer. An automated assortment optimization solution was designed to recommend the best assortment mix and shelf positioning that would enhance sales and overall shopping experience at the store. The recommended positioning on planograms allowed the category managers and retailers to explore multiple shelf placements and experimentation at the store-cluster level, leading to 2% higher variety of brand SKUs.

Business scenario

The client is an American consumer health company, operating 25+ leading brands globally across self-care, health, skincare, and beauty. As a leader across 5 product categories, the brand was required to design a precise merchandising strategy to achieve the desired growth while dealing with multiple constraints like case pack adherence and DOS (Days of Supply) compliance. Each planogram reset involved 3-4 months of manual analysis of national-level sales and exploring multiple shelf arrangement scenarios which became time-intensive and rudimentary over time. Moreover, the lack of data behind the suggested shelf arrangements did not allow category managers to have effective discussions with the retailers. They needed a solution that would rapidly generate optimal planograms to maximize sales for the total category with data-backed rationale behind the recommended planograms.

Key challenges addressed:

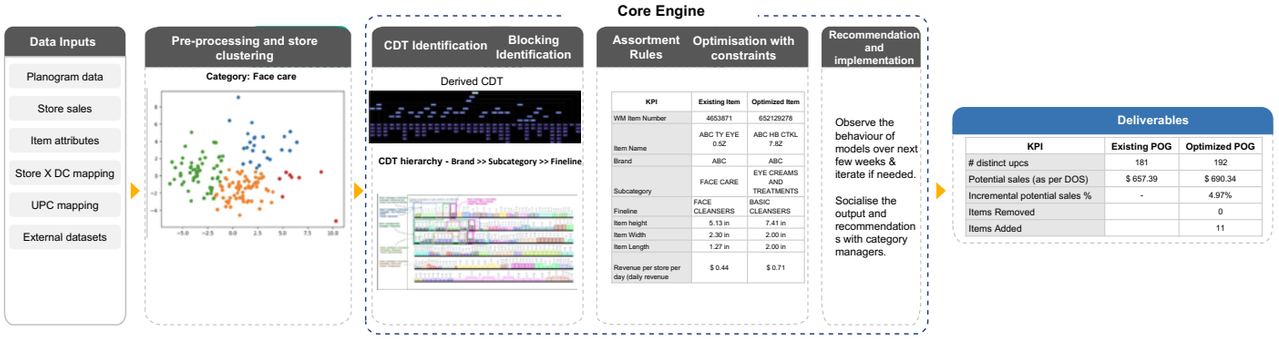
- Trade-off between shopability rules, sales goals, and operational cost-effectiveness while customizing planograms and shelf plans
- Intervention by retail teams in the existing planograms that affected brand sales
- Ensuring the best assortment for each competitor brand to improve total category sales

Sigmoid solution

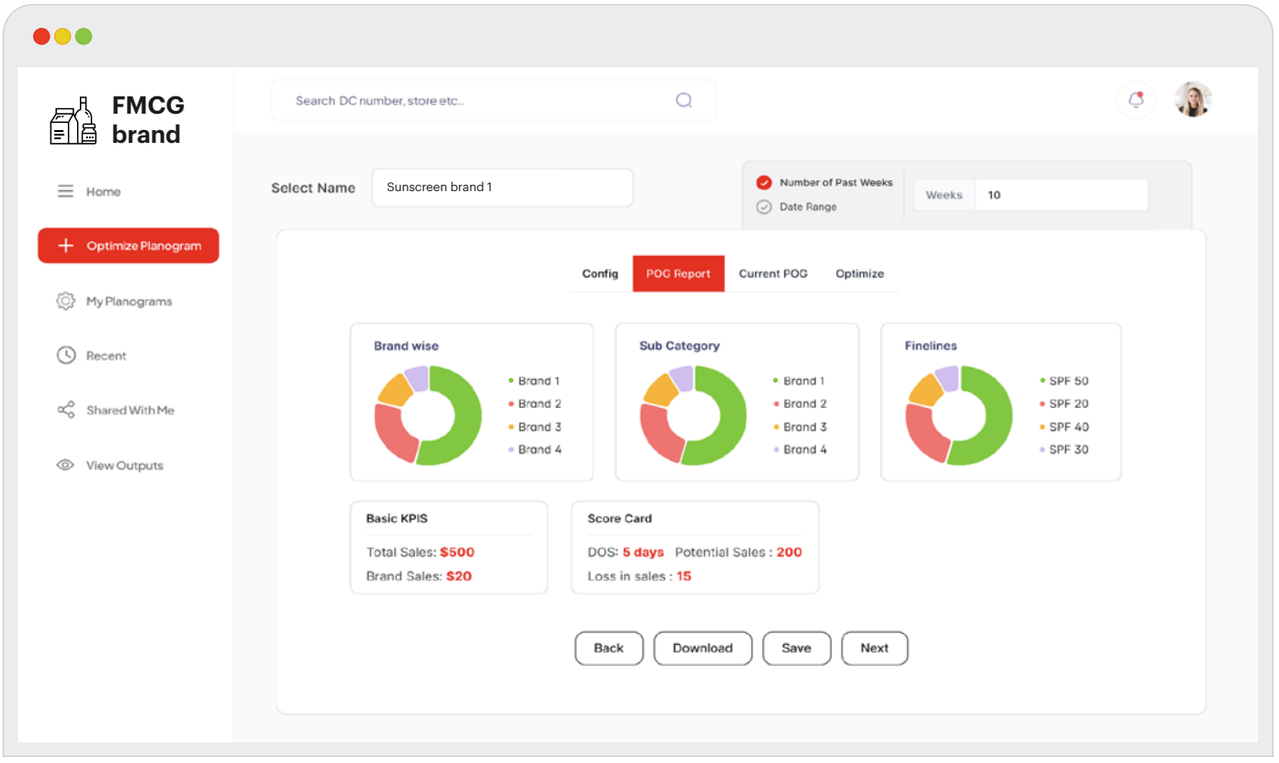
Sigmoid conducted a comprehensive consulting to thoroughly assess the retail value chain, to identify growth opportunities for the brand, including strategies for shelf optimization. We then designed an ML-based assortment optimization solution to automate the creation of planograms for the retail stores. Data sets like historical POS, store shelf arrangement, product attributes, pricing, promotion and discount, marketing information, planogram data, store sales, store and distribution mapping, product code mapping, and external data (GDP, demographics, income groups, consumer spending index, etc.) were processed. For each of the 42 distribution centers (DC), multiple store clusters were created using unsupervised clustering methodology. The best assortment for each store within a cluster was selected based on the maximum potential sales within the specific DC - cluster - POG width and subsequently scaled to other clusters.

Consumer decision trees (CDT) enabled the classification of products under brand sub-brand, subcategory and fine line hierarchy by understanding consumer buying behavior. The core ML model was programmed with assortment rules to generate optimized values for each item against multiple KPIs and retailer constraints. The model output included optimized planograms (w.r.t. lines, distributions, and shelf positions) along with business scorecards based on the pre-defined KPIs including daily revenue, sales lift, days of supply, sales per inch, new items added, items removed, shelf share, etc. The planograms were optimized using a linear optimization approach to maximize revenue while efficiently utilizing the opportunity spaces. The new planograms replaced poor-performing or multi-faced items with better-performing ones, following the CDT hierarchy of the planogram.

High-level solution architecture



Sample dashboard



Business impact

>2%
points increase
in the brand's share of shelves across five categories

50%
time savings
for retailer labor hours

Modify
loss sales by selecting the right custom assortment for a store

Sigmoid optimized the shelf placement for the brand with space-aware and localized planograms ensuring maximum category sales. The planograms were adjusted for forecasted demand to reflect anticipated sales and inventory days on hand, leading to optimized on-shelf availability. The solution identified opportunities to introduce new SKUs and increase visibility for the brand.

About Sigmoid

Sigmoid combines data engineering and AI consulting to help enterprises gain a competitive advantage through effective data-driven decision-making. Our case-specific solutions for category optimization and on-shelf availability have helped multiple clients build profitable assortment mix for higher sales. Let us empower your organization to make data-driven decisions through the use of data engineering, data science, and MLOps.

Visit www.sigmoid.com to know more.

Let's Get Started!

Reach out to us at marketing@sigmoid.com to deploy advanced analytics and data management solutions for downstream analytics applications.