

Price Optimization with Data Science Helps Global Retailer Improve Its E-Commerce Strategy and Sales

Price optimization is an age-old requirement for successful retailing, but like most business practices it must evolve with the times. Today, merchants are generating much of their sales through online channels and the COVID-19 pandemic is accelerating this trend. The online environment heightens competition, forcing retailers to be smarter than ever before about setting prices. Fortunately, they can use data science and analytics to optimize prices and guide their strategic decisions to increase e-commerce sales, revenues, and profitability.

This case study describes how Lynx Analytics used data science to help a global clothing retailer improve its e-commerce strategy, starting with the China market. The retailer's e-commerce business was not performing well, especially given the company's high brand awareness and market potential in the country. Lynx conducted an analysis of the business, identified an opportunity to use prices to increase traffic and sales, and built a price optimization application for the client. The application analyzes price elasticity for items in the retailer's e-commerce inventory and recommends prices for specific timeframes to increase future sales, revenues, and profit margins. The retailer is now using the price optimizer successfully to increase its e-commerce revenues and margins.



A E-Commerce
Case Study

Objective

Improve e-commerce revenues and margins by determining the optimal price point for items scheduled for sale during future nationwide shopping events.

- 1 Increase revenues and margins
- 2 Use price elasticity analysis to determine the optimal price point
- 3 Modernize pricing methods to become more scientific and predictive

The Challenge

The retailer was generating only 7% of its global revenues from China, while some of its competitors were driving 30% and greater proportions of their global revenues in the country. The retailer forged a strategic objective to increase revenues tenfold in China during the next 10 years.

Because the COVID-19 pandemic has adversely impacted in-store shopping, the retailer must rely on e-commerce for much of this growth. This presented a steep challenge, because almost 90% of the brand's e-commerce sales occurred on third-party e-commerce platforms such as Alibaba and Amazon. While these platforms provide access to large groups of shoppers, marketing expenses creep up fast and margins are thin. Increasing revenues would require improving sales on "Singles Day," the biggest sales day in the year, as well as the country's other shopping holidays.

Applying data science to optimize prices for this retailer was challenging. For example, the retailer's inventory decisions are centralized at the corporate level 18 months in advance and its merchandisers have no control over the items or volumes of items included in its online inventory. The third-party platforms the retailer depends on have pricing rules that must be observed. The retailer is also competing on these sites against other apparel retailers for the best prices and rankings. Further, the retailer's merchandisers tended to set prices based on tradition and rules-of-thumb, and it was important to build data science gradually into their art of merchandising. Finally, there was little historical data available for modeling because each sales festival happens just once per year and routine sales data, while more plentiful, is not relevant to the most significant sales events, such as Singles Day.

01

The retailer was generating only 3% of its global revenues from China while some of its competitors were driving 30% and greater proportions of their global revenues in the country



With COVID-19 pandemic adversely impacting in-store shopping, the retailer had to rely on e-commerce for sales

02

03

Almost 90% of the brand's e-commerce sales occurred on Amazon-like third-party e-commerce platforms, which resulted in higher marketing expenses and low sales margins



Inventory decisions were centralized at the corporate level and merchandisers had no control over the items or volumes of items included in the online inventory

04

05

Little historical data was available for modeling because each sales festival happens just once per year and routine sales data, while more plentiful, was not relevant to the most significant sales



The Solution

The Lynx team designed the application to optimize prices based on data generated by third-party sites that drive the vast majority of the retailer’s online business. The application then applies the same prices and recommendations for the retailer’s own e-commerce site.

On the back end, the application predicts how many visitors the site will have for any future date and calculates a pricing recommendation for each item. The application predicts how much inventory will be available for each item and simulates how much revenue and margin the retailer will make for each item based on the recommended price.

The application issues an alert if inventory is running low because of a price.

Merchandisers use a graphical user interface to generate pricing recommendations and make their pricing decisions. Inputs include the time period they’re interested in and their preference for maximizing revenues or margins.

The dashboard then generates the price recommendation, which the user can accept or decline. In addition to its revenue and margin predictions, the application will provide a profit and loss prediction for the next month based on the user’s choices.

Sales Period: Start Date: End Date: E-commerce Channel: Optimization Strategy:

| Product Code | Thumbnail | Tag Price | Recommended Price, RMB | Resulting Sell-through rate |
|-----------------------------|--|-----------|------------------------|-----------------------------|
| JACKET_0001 |  | 1699 | 699 | 90% |
| JACKET_0002 |  | 1299 | 399 | 90% |
| JACKET_0003 |  | 1699 | 699 | 37% |
| JACKET_0004 |  | 1899 | 679 | 27% |
| JACKET_0005 |  | 1699 | 749 | 24% |
| JEANS_001 |  | 799 | 429 | 90% |
| JEANS_001 |  | 799 | 379 | 82% |
| JEANS_001 |  | 899 | 399 | 27% |
| JEANS_001 |  | 799 | 349 | 90% |

The Solution



The Outcome

+10%

Increase in
revenues

+16%

Increase
in units

+13%

Increase in
margins

The retailer has begun using the application developed by Lynx Analytics to determine pricing for its campaigns. Based on its experience to date it has generated a 10% increase in revenues and expects similar performance during the upcoming Singles Day, which will achieve much of its growth target for the year. The retailer will now use this application for all e-commerce activities in China. It is also planning to use the approach in other regions.

Lynx Analytics

Founded in 2010 and headquartered in Singapore with an engineering team based in Hungary, we bring value to companies across the retail domain with artificial intelligence and predictive analytics solutions to improve forecasting, assortment planning, size optimisation, promotion planning, markdown optimisation and replenishment scheduling.



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