

CASE STUDY: ECOMMERCE AND RETAIL

E-COMMERCE ADOPTS PREDICTIVE ANALYTICS TO JUMPSTART SALES AND MARKETING



THE CLIENT

- Premium cruise line Seattle, WA
- Leading cloud services provider Redmond, WA
- Airline passenger services system provider Minneapolis, MN

THE CHALLENGE

The clients shared a very similar challenge. They had an enormous amount of customer and sales data on their hands, but the reports and dashboards derived from the historical data were mostly descriptive and diagnostic in nature, not providing any predictive insights of customer behavior patterns and trends, where sales and marketing can leverage to segment the "best customers" and rapidly target them to sell more effectively.



THE SOLUTION

Businesses that sell online have realized the infinite value and potential contained in their big data, be it sales data, customer/user data, or sentiment data. The biggest companies in retail, travel, hospitality, and even entertainment, have been leveraging AI/ML to help them better market and sell their products and services. One such capability is predictive analytics. We see the use of predictive analytics in the advent of recommendation systems, dynamic pricing, dynamic call-to-action, and user profiling/segmentation every single day.

While the e-commerce giants readily devoted countless in-house resources to machine learning and predictive analytics, over 70% of the SMB struggle to overcome the technology and cost barriers. Beyondsoft built its Machine Learning-as-a-Service (MLaaS) platform



to remove those barriers, so businesses can gain a clear competitive advantage without dealing with the complexity, expert knowledge, computing cost, etc., of AI/ML.

The user profiling, recommendation, and forecasting services allowed the clients to surface deep insights of customer needs and behaviors. Using the new insight, sales and marketing will be more successful in up-selling, converting purchases, developing new products and services, and forecasting future performances.

RESULTS

Cruise Line

The client leveraged the MLaaS to identify and learn the patterns of its most valuable customers – those who had the most influence on revenue. The new model produced by MLaaS significantly boosted the speed and accuracy of predictions – dropping the prediction time from one hour to less than a minute, meanwhile increasing the accuracy from 34% to 80%.

The client achieved a much finer data granularity – the resulted 27 different models made it possible to generate prediction for every single passenger in each department, which was much detailed than just the department level. The new discovery of passenger preferences and consumption patterns allowed the client to create meaningful segmentation of passengers, through which clear profiles can be established for highly targeted offers.

The client also gained insights from behavior-based analytics on the profitability of amenities and services onboard the cruise ship, for example, photo, spa, casino, bar and shore excursions. By learning the features and factors of each amenity, from ticket price and booking date, to age, loyalty, trip length, etc., the client was able to make informed price adjustments to increase revenue.

MLaaS helped to open new marketing opportunities – the ability to target up-selling of new services to customers with the same profile of consumption behaviors.

Cloud Services Provider

With over 100 varieties of cloud services and 20+ million users worldwide, the client wanted to uncover why and when certain user consumption behaviors happened. Through MLaaS models for service adoption and churn prediction, the client gained a thorough understanding of behaviors patterns and the relations between them. The predictive data also helped the client to find hidden buyers for certain products and services.

Marketing reaped great benefit in knowing when certain user needs would arise. The website made accurate recommendations based on the predictive model that led to purchases. Targeted campaigns were developed to convert purchase through special offers and dynamic pricing. MLaaS helped the client predict the least amount of discount to offer to close the highest percentage of deals, for each group of users who share a pattern of trends.

The client was able to achieve high accuracy with a very quick prediction time. The prediction for 300,000 users took less than a minute.

A leading technology and passenger service system provider for low-cost airlines

For low-cost airlines, 90% of their revenue came from the purchase of add-on items, for example, checked bags, upgraded seat, VIP line, onboard meals, etc. Therefore, it is critical for the client to successfully upsell these products. By deploying MLaaS, the client identified those passengers that match behavior patterns deemed probable to make purchases. Marketing would then launch targeted campaigns, promotions, and dynamic pricing to increase sales, based on the predictive model.

The client also found hidden customers based on newly found patterns and trends, for example, destination, number of connections, passenger age and gender, etc. Combined with dynamic pricing, marketing to the targeted passengers became more effective. The same model also allowed the product development team to test new initiatives with better results.

The accuracy of the predictions for the top 3.5% of of the passengers reached 60%, a number the client was happy with. And the time needed to compute millions of predictions took less than one minute.