Enhanced CRM System to Predict Customer Buying Patterns for Improved Sales Decision Support

Robin Jindal, Sachin Arakeri, Rahul Raj, Matthew A. Lanham
Purdue University, Department of Management, 403 W. State Street, West Lafayette, IN 47907
rjindal@purdue.edu; sarakeri@purdue.edu; rajr@purdue.edu; lanhamm@purdue.edu

ABSTRACT

The capital goods market predominantly operates in a decentralized fashion via regional dealerships. Unlike FMCG and retail industries, where demand is continuous and integrated within their operations, capital goods manufacturers face discrete customer demand patterns and must depend on business intelligence from third-party vendors. This makes it challenging to accurately predict customer buying patterns in a timely manner using traditional planning techniques. Inability to determine when a customer would be in the market for a specific product leads to longer lead times and potential customer churn. Such manufacturers seek sophisticated customer relationship management (CRM) systems that can provide timely and insightful decision-support directly to dealerships.

In collaboration with a multinational industrial equipment manufacturer having thousands of dealerships in the USA, we developed an enhanced CRM (customer relationship management) system that predicts what a customer will likely be in the market for a specific product at a specific time in the future. This model is based on feature generation using data from previous purchases, web search activity, demographics, and product attributes. We plan to discuss how we developed our model, obtained buy-in from corporate business leaders and dealerships to operationalize this work, and how we obtained control groups to estimate sales lifts using our model. We believe that anybody in sales or marketing who is trying to operationalize analytics to support their on-ground team members will find our work novel and insightful.

Keywords: Industrial Equipment, Construction Equipment, Predictive Modeling, Decision Support Systems, Demand Forecasting