



Metropolitan Appliance - OPTIMIZING DIGITAL FOOTPRINT



Team B7

BACKGROUND: Metropolitan Appliance is an independent locally owned retail business which supplies and installs appliances in homes and businesses throughout the Puget Sound. The business's Showroom & Headquarters is three blocks south of T-Mobile Park (former Safeco Field) in Seattle's SODO neighborhood. The business employs 25 people working in a variety of roles which are primarily sales, delivery, clerical or management related.

PROBLEM: The store has very limited digital presence making them less visible to the new purchaser in and around the e-market.

CHALLENGE: The larger global competitors have established a web presence and are better positioned to market to these customers.

OPPORTUNITY: Regional independent competitors do not have built out e-commerce sales channels. There is an opportunity to get first-mover advantage over competitors in order to increase sales volume and market share.

Amarjot Kaur
amarjot@uw.edu

Barani Bhoopalan
bb188@uw.edu

Jashandeep Singh
jashan13@uw.edu

Sharmistha Ganguly Ghosh
sgg5@uw.edu

DESCRIPTIVE AND DIAGNOSTIC ANALYTICS

Observations from Google Analytics Data

- Organic Search works better than Paid search and Direct Search.
- Channel wise Bounce rate is high.
- Search Exit is maximum in 2019 Q3 and it is from the deals page.
- Google has the maximum source acquisition followed by reach local and direct. But social media has negligible source acquisition and additionally, purchase conversion is meager.

Observations from Online Sales Data

- Weaker Categories based on Average Profit : Dryer, Top Freezer Refrigerator, Electric Range and OTR microwave.
- Dryer, Top Freezer Refrigerator, Electric Range and OTR microwave - not ordered since 2019 Q2.
- Weaker Brands based on Average Profit : **Maytag, Electrolux and Whirlpool.**
- Electrolux is the poor performing brand with the Profit Margin of 5.32% and average profit of -145, followed by Maytag, Fisher Paykel, Frigidaire & Whirlpool with profit margins of 5.43%, 11.13%, 13.24% and 19.54% respectively.

COGNITIVE ANALYTICS

Analyzed customer reviews online by **integrating Power BI with Text Analytics** to better understand the sentiment around the product and the brand.

Created a virtual assistant by **integrating Power BI with Power Apps** to help the user retrieve brand/category information and recommendation system which prints the products to be bundled based on user input.

DATA MANAGEMENT & TOOLS

Income/Expenditure Report

PREDICTIVE AND PRESCRIPTIVE ANALYTICS

MARKET BASKET ANALYSIS

Market Basket Analysis is a modelling technique based upon the theory that if you buy a certain group of items, you are more (or less) likely to buy another group of items. The set of items a customer buys is referred to as an itemset, and market basket analysis seeks to find relationships between purchases. In case of association rule, the **apriori algorithm** uses the following input and generates set of rules for effective product bundling.

- Input:** List of purchases done by the customer
- Output:** If-Then scenario rules (association rules), for example, if item A & B are purchased then item C is likely to be purchased

ASSOCIATION RULE MINING

Products	Bottom Freezer Refrigerator	Built-in Refrigerator	Commercial Appliance	Dishwasher	Dryer	Electric Range	Gas Range	Microwave (Non-OTR)	OTR Microwave
Dishwasher	563	147	80		219				
Dryer	133					332	74		
Electric Range	134								
Gas Range	227								
Microwave (Non-OTR)	229	94		376	77			105	
OTR Microwave	146			245		169	90		
Single Oven				94					
Top Freezer Refrigerator				242		230			73
Wall Hood	120			239		94	120	113	
Washer	128			195	1085			71	
Grand Total	1680	241	80	2226	1236	493	315	184	73

RECOMMENDATIONS

Organic Search > Direct Search & Paid Search - Acquisition

Suggestion
Paid Search - Shift paid search from Google to Social Media
Direct Search - Paid Search on social media will lead to direct search

High bounce and exit rate - Acquisition and Retention

Suggestion
Bounce Rate - Paid Search on google should be optimized by adding tags
Exit Rate - Deals page should have appealing deals with required information

More time spent on website with less page views - Retention

Suggestion
Include deals and bundles with basic improvements on website
Include deals and bundles for advertising campaigns (Google banner)

Reviews - Retention and Acquisition

Suggestion
Neutral - Spend money on social media to expand the metropolitan existence
Negative - Provide good service post installation
Positive - Continue providing great service

TRANSFORMATION PLAN

BASIC

Add more website metrics.
For ex: purchase conversion, overall revenue and customer demographics

Budget Allocation - Social media and Google ads

INTERMEDIATE

Promotion Campaigns - Emailing product bundles

Improved User Experience - Placement of deals

Placement of bundles highlighting savings - On the check-out page

UI implementation - Review and QnA

ADVANCED

Invest in Cognitive Services & Data Analytics - To increase accuracy of search engine - Promoting personalized offers/bundles