

Metropolitan Appliance - OPTIMIZING DIGITAL FOOTPRINT



CENTER FOR BUSINESS ANALYTICS

UNIVERSITY of WASHINGTON | TACOMA Milgard School of Business

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.



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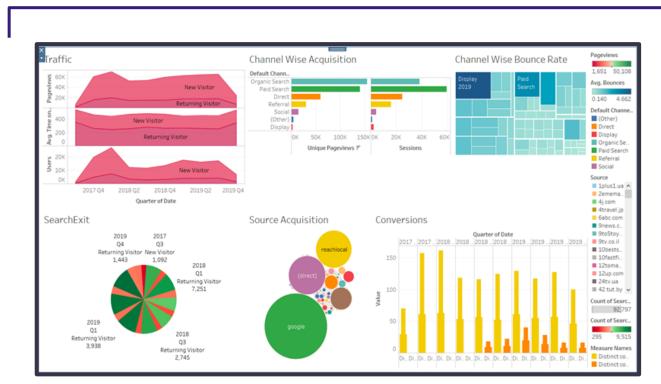


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DESCRIPTIVE AND DIAGNOSTIC ANALYTICS



Observations from Google Analytics Data

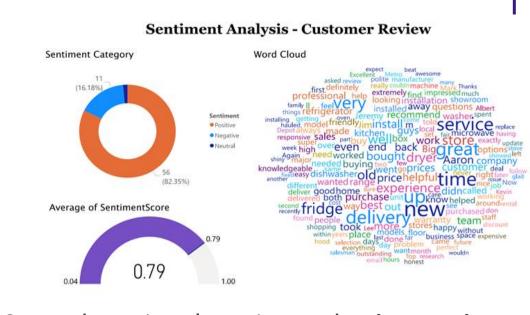
- Organic Search works better than Paid search and Direct Search.
- Channel wise Bounce rate is high.
- Search Exit is maximum in 2019 Q3 and it is from the deals page.
- Google has the maximum source acquisition followed by reach local and direct. But social media has negligible source acquisition and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

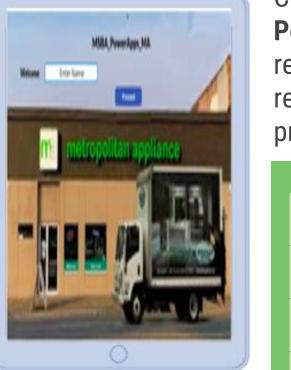
Observations from Online Sales Data

- 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

integrating Power BI with Text Analytics to better understand the sentiment around the product and the brand.





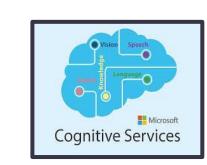
Created a virtual assistant by integrating Power BI with Power Apps to help the user retrieve brand/category information and recommendation system which prints the products to be bundled based on user input



DATA MANAGEMENT & TOOLS









POS/Internet Sales





\$\frac{1}{2} Income/

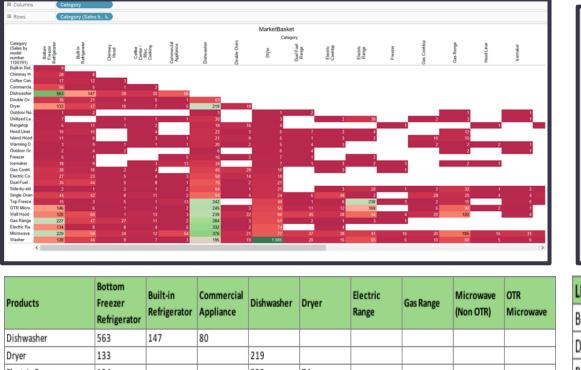
Expenditure Report

PREDICTIVE AND PRESCRIPTIVE ANALYTICS

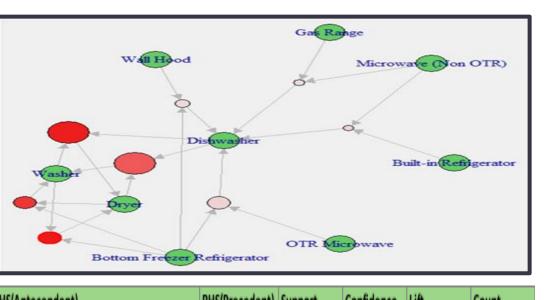
MARKET BASKET ANALYSIS

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. Incase 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



(Antecendent)	RHS(Precedent)	Support	Confidence	Lift	Count
om Freezer Refrigerator, Washer	Dryer	0.0142	0.9609	5.745	123
washer, Washer	Dryer	0.0215	0.9538	5.7026	186
om Freezer Refrigerator, Dryer	Washer	0.0142	0.9248	5.3657	123
t-in Refrigerator, Microwave(Non-OTR)	Dishwasher	0.0094	0.8617	2.6037	81
om Freezer Refrigerator, OTR Microwave	Dishwasher	0.0145	0.8562	2.587	125
washer, Dryer	Washer	0.0215	0.8493	4.9277	186
Range, Microwave(Non-OTR)	Dishwasher	0.0098	0.8095	2.4461	85
om Freezer Refrigerator, Wall Hood	Dishwasher	0.0112	0.8083	2.4425	97

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

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)

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,

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

Azure ML

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

ADVANCED)

Invest in Cognitive Services & Data Analytics

- To increase accuracy of search engine

- Promoting personalized offers/bundles

UI implementation

- Review and QnA