

E-Commerce Eleckart Capstone Project

Agenda

- ❖ Objective
- ❖ Background
- ❖ EDA and Visualizations
- ❖ Recommendations
- ❖ Appendix:
 - Data sources
 - Data methodology

Objective

- ❖ To model the impact of different levers on the sales figure of Eleckart
- ❖ To create a market mix model for EleckKart (an e-commerce firm based out of Ontario, Canada) for 3 product sub-categories - Camera Accessory, Gaming Accessory and Home Audio
- ❖ To observe the actual impact of various marketing variables over one year (July 2015 to June 2016) and recommend the business on optimal budget allocation for different marketing levers for the next year.

Background

- ❖ Over the last one year, ElecKart has faced a revenue dip even after spending a significant amount of money on marketing and promotions
- ❖ Company facing high customer churn ratio
- ❖ There was no mobile app for a satisfactory shopping experience and the website had a confusing interface.

EDA and visualizations

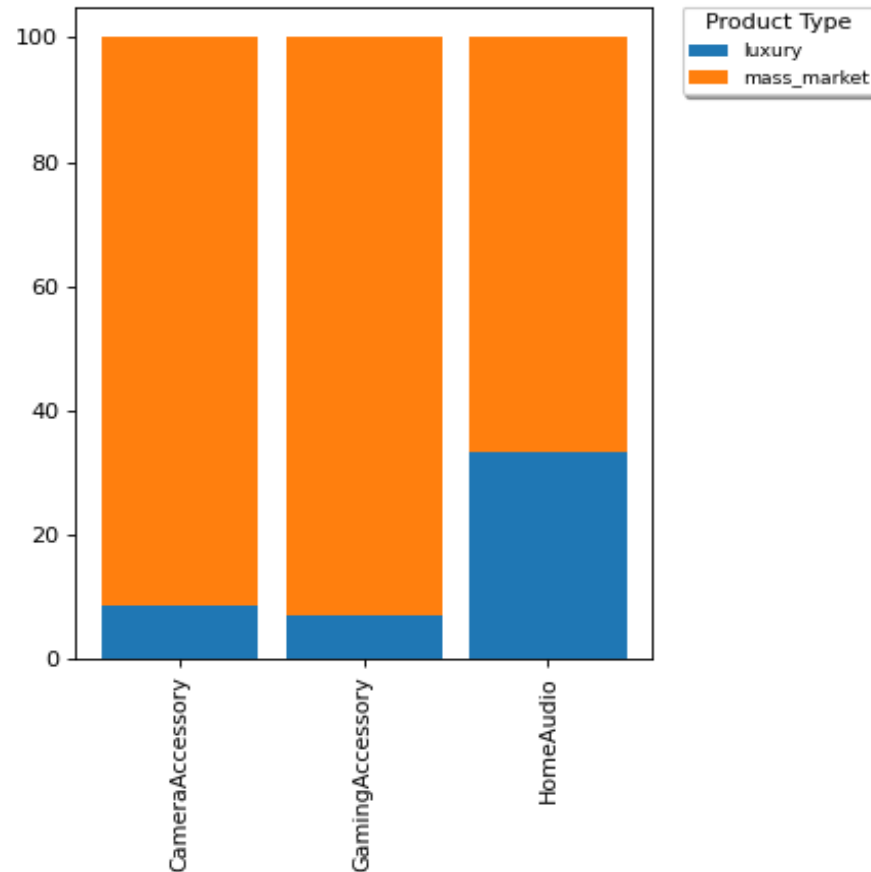
Top 10 Product Verticals which brought the Maximum Revenue for Camera Accessory, Gaming Accessory and Home Audio

	product_analytic_sub_category	product_analytic_vertical	gmv	product_in_category
0	HomeAudio	HomeAudioSpeaker	187320585.549	HomeAudioSpeaker in HomeAudio
1	CameraAccessory	Lens	108530776.000	Lens in CameraAccessory
2	GamingAccessory	GamePad	61874400.209	GamePad in GamingAccessory
3	GamingAccessory	GamingHeadset	31990485.933	GamingHeadset in GamingAccessory
4	CameraAccessory	Binoculars	26584271.000	Binoculars in CameraAccessory
5	GamingAccessory	GamingMouse	26328373.952	GamingMouse in GamingAccessory
6	CameraAccessory	CameraBattery	23561738.257	CameraBattery in CameraAccessory
7	CameraAccessory	CameraBag	22494992.000	CameraBag in CameraAccessory
8	CameraAccessory	Flash	22281503.000	Flash in CameraAccessory
9	HomeAudio	FMRadio	22221698.000	FMRadio in HomeAudio

Luxury & Mass-market Products amongst 3 sub-categories

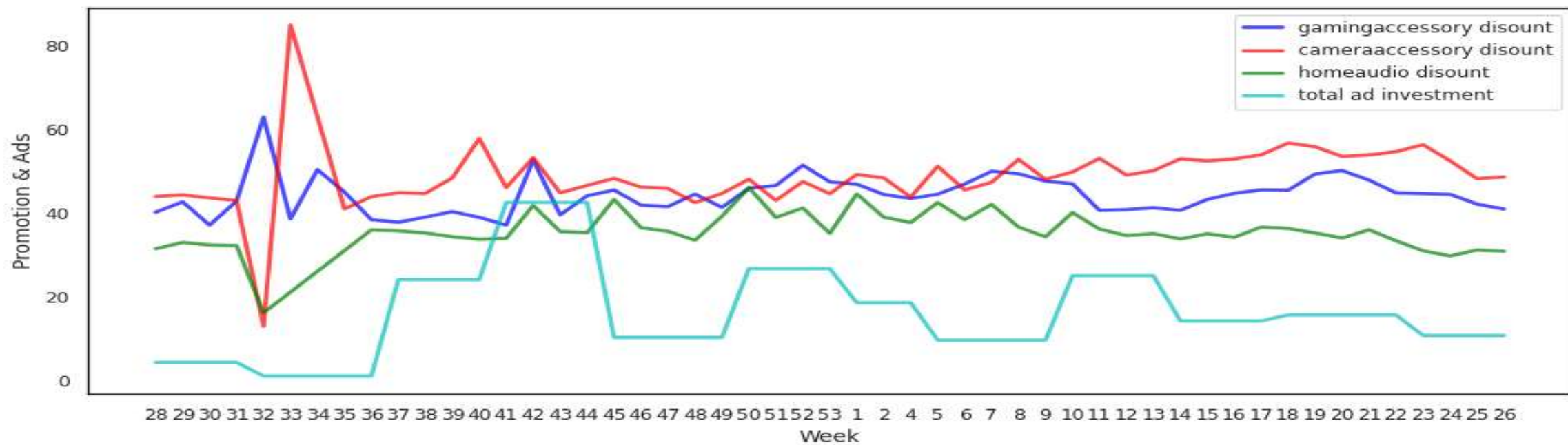
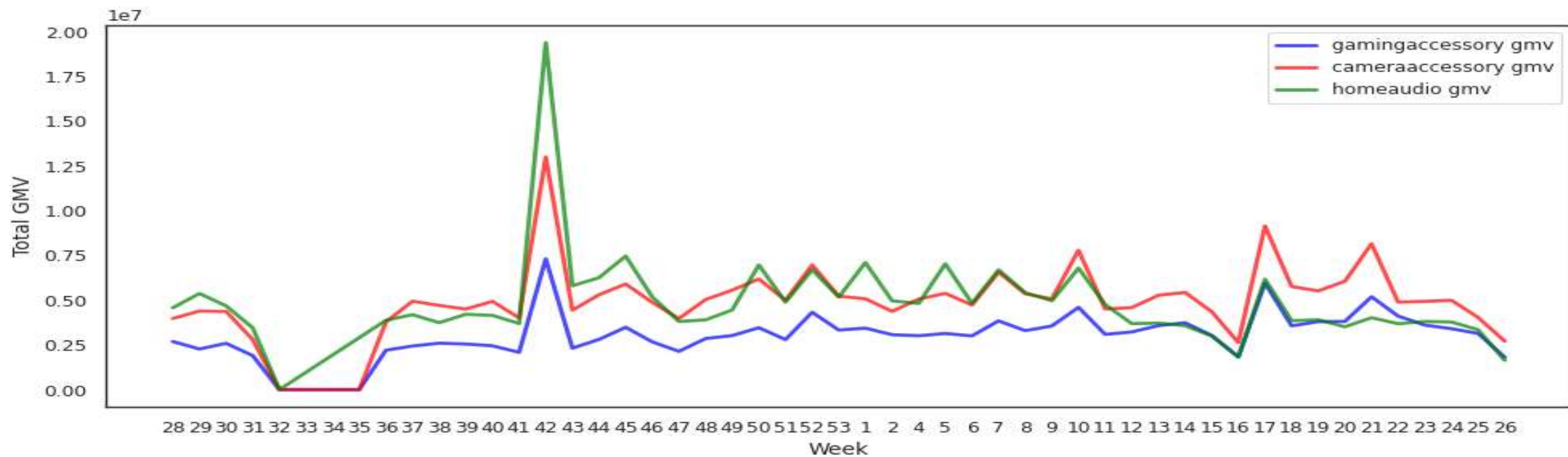
- ❖ Percentage of luxury products under HomeAudio is much more compared to the other sub categories.

Percentage of Luxury & Mass-market Product for different Sub-categories



Comparison between Promotion, Ad and Revenue over the weeks

- ❖ For the week# 42 (during `Thanksgiving`), all the graphs show a steep rise. Revenue Increased because of both Higher discount% and increased Ad Investment.
- ❖ For the weeks 32 - 35(August), Revenue generated was the lowest from all 3 product subcategories.



Recommendation

1. Camera Accessory:

- ❖ Content Marketing AdStock (carry over effect of Content Marketing Advertisement) spends helps to increase Camera Accessories sales by significant level.
- ❖ Camera Accessories products like lens, Battery Charger and Camera Battery generates maximum revenues, so company should focus on these products.
- ❖ Mass Market products helps to increase the revenue.

Recommendation

2. Gaming Accessory:

- ❖ Company should focus on products like Gaming Headsets, Gaming Mouse and GamePads since it generates highest revenue.
- ❖ Mass Market products helps to increase the revenue of Gaming Accessories as well.
- ❖ Company should avoid in giving higher percentage of discounts since it negatively impact the revenue generation.

Recommendation

3. Home Audio:

- ❖ Home Audio Accessories products like Home Audio Speakers and FM Radio , generates maximum revenues, so company should focus on these products.
- ❖ Other AdStock (carry over effect of other types of Advertisement) spends helps to increase Home Audio Accessories sales by significant level.
- ❖ Advertisement spends on Sponsorship has a positive impact on revenue.

Appendix: Data Sources

- ❖ Monthly spend on various advertising channels
- ❖ Days when there was any special sale on products
- ❖ Monthly NPS score (this may work as a proxy to the ‘voice of the customer’)
- ❖ Stock index of the company on a monthly basis
- ❖ Climatic information of Ontario during 2015 and 2016

Appendix: Data Methodology

❖ The approach for this project has been designed to follow the CRISP DM Framework.

1. Understanding the Business Data from source files.
2. Data cleanup and Preparation:
 - i. Handling Incorrect values in some columns
 - ii. De-Duplication of Data
 - iii. Treating Null values and Whitespaces
 - iv. Dropping Insignificant columns
 - v. Outlier Treatment
 - vi. Selecting One Year Data

Appendix: Data Methodology

3. New KPIs are created as part of Feature Engineering like Week, Sales Price, Payday, Discount Percentage, Adstock values, etc.
4. EDA and Data Visualizations
5. Linear Regression Models Building using Additive, Multiplicative, Koyck, Distributive Lag (Additive) and Distributive Lag (Multiplicative) Model.
6. Model Dashboard, Model Evaluation and Equation.