

A Retail Ecommerce Orders Data Analysis

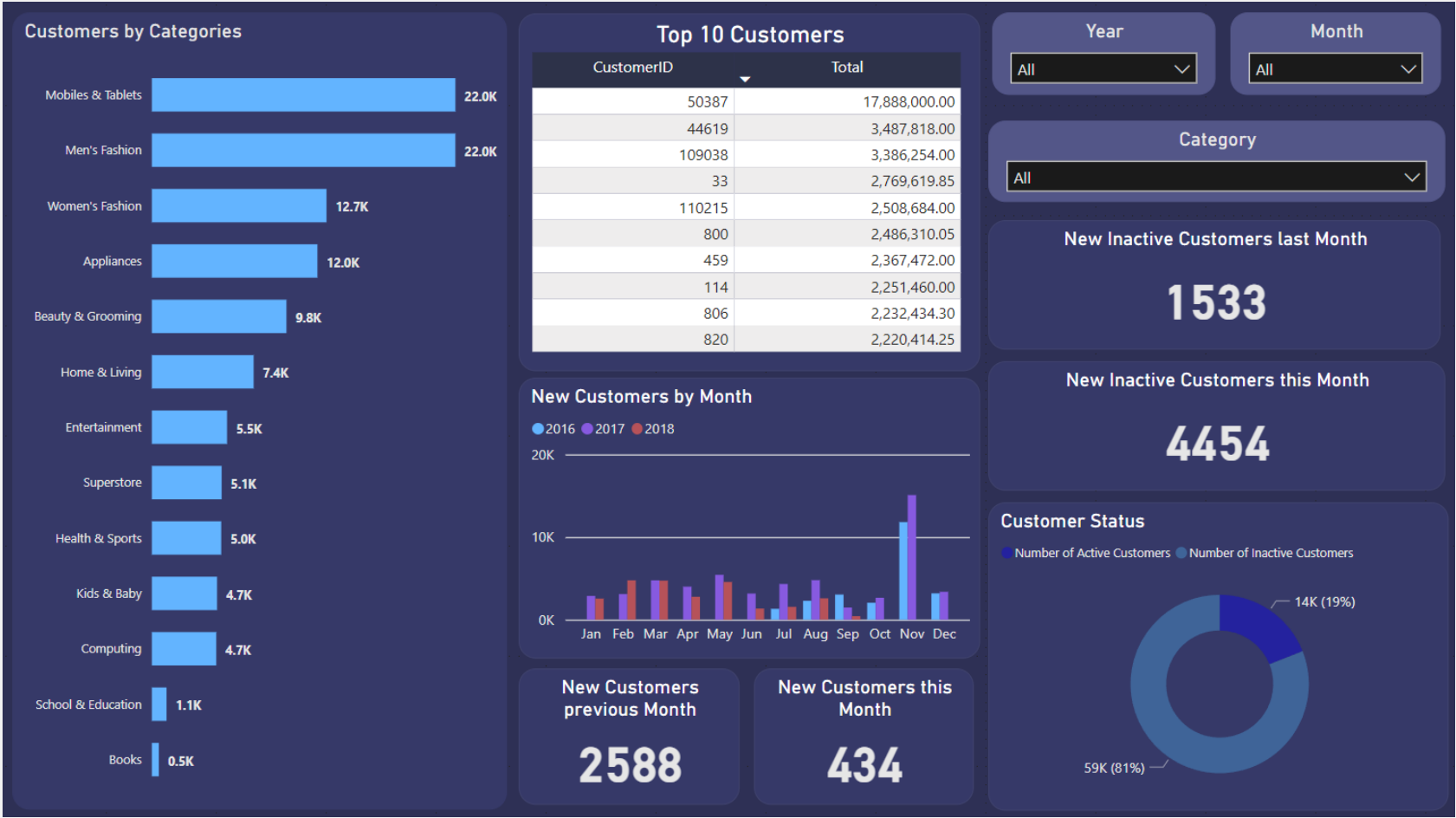
- Performed data analysis on a retail ecommerce orders dataset, where around 500,000 total orders are loaded into Power BI database environment.
- Cleaned the data using Power BI Power Query function, and designed a schema to transform the flat table into relational database using the Entity Relationship Modeling principle.
- High level overview of the business are visualized through interactive Power BI dashboard.
- Further data analysis are performed, and the insights are discussed as followings.

1. High Level Overview Dashboard



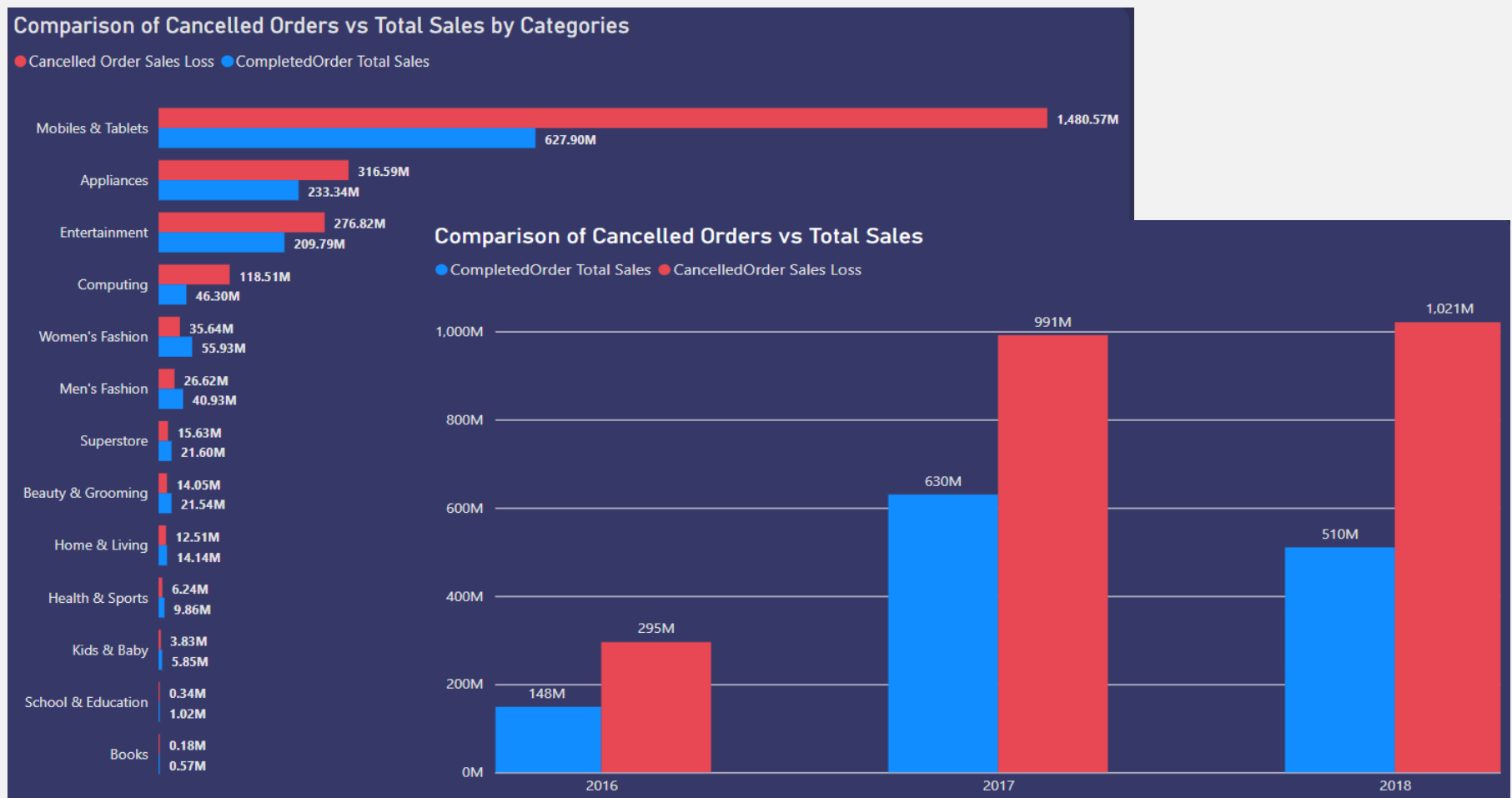
- Monitor sales performance to date, total sales and total sales volume over time.
- Top 3 sales are generated through mobiles & tablets, appliances and entertainment.
- Data can be filtered by year, month, and category.

2. Customer Overview Dashboard



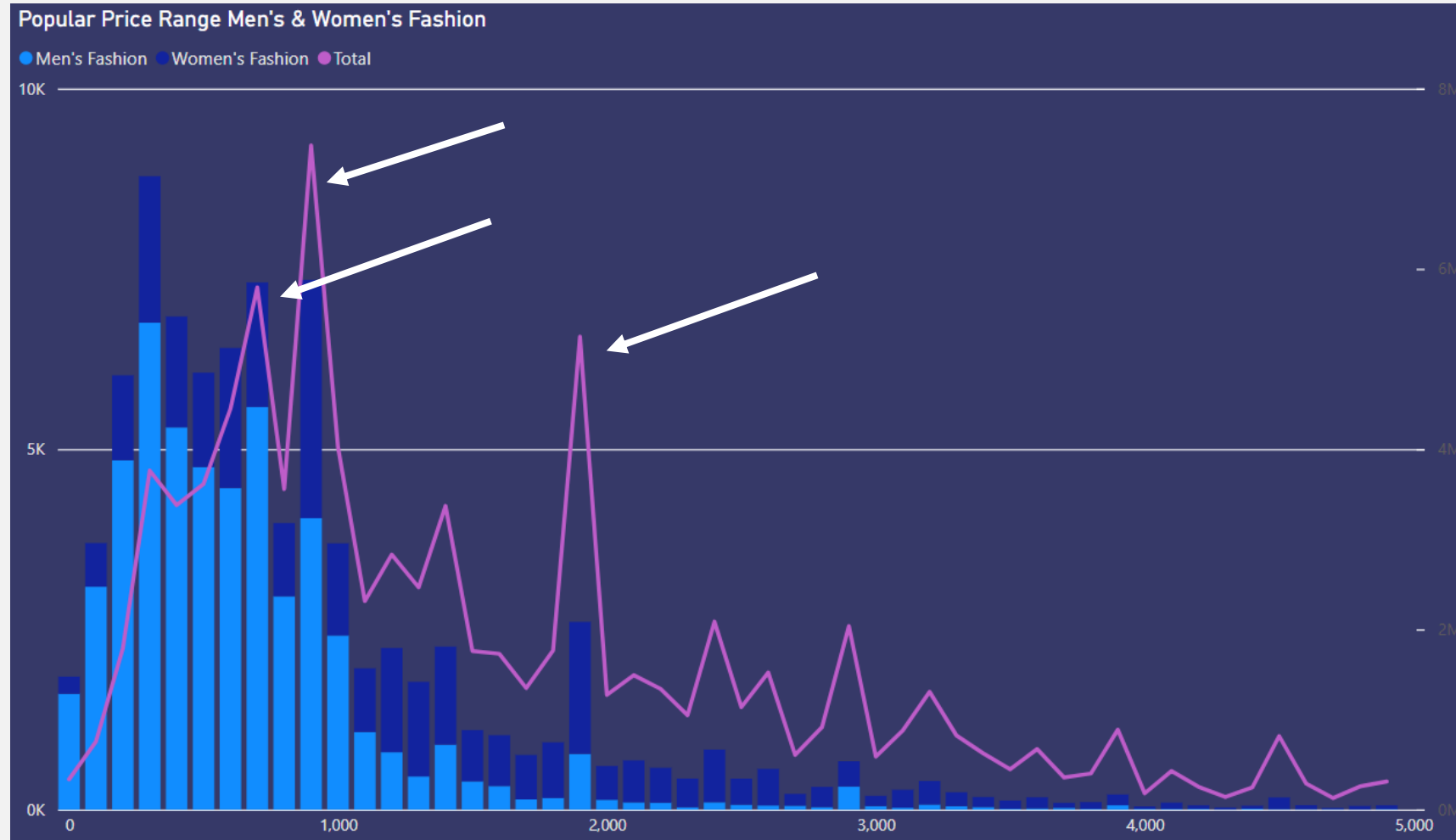
- Monitor number of customers by categories.
- Customer status shows percentage of current active and inactive customers.
- Inactive customers defined as no new purchases in the last 6 months
- Only app. 20% of current customers are active, which is low.
- Track new customers and new inactive customers per month.

3. Total Sales Lost through Cancelled Orders



- The dataset also includes cancelled order, where it can be considered as opportunity loss.
- Unfortunately, the cancellation reason is not provided, so further analysis could not be made.
- Related data such as items taken out of shopping cart, payment process, should be tracked to give more information.
- As we see from both graphs, sales loss exceed actual sales by up to approximately 50%.
- Improvement actions should be discussed to reduce amount of cancelled orders.

4. Price Point of Men's and Women's Fashion



- The bar chart shows the number of products with x price. All the products are bin into 100 range.
- The 700, 900, and 1900 price points recorded the highest sales. (*currency unit is Pakistani Rupee*).
- As a suggestion, promotions for men's and women's fashion should put more focus on this 3 price points, as they are the most popular and profitable.

5. Customer's Order Frequency

Top 10 Customers (2017)	
CustomerID	Order Frequency
31025	2.5726027
1404	1.7863014
806	1.0438356
163	0.9972603
767	0.9232877
56	0.8739726
33	0.7671233
137	0.6630137
26859	0.6246575
800	0.6109589

0.00548

Median of Order Frequency

0.00822

75th Percentile

- Order frequency is calculated by dividing total number of orders in a year with 365. (*only 2017 data was used, as benchmark for the next year*).
- Median of order frequency is 0.00548 which is approx. 2 order per year.
- This metric can be used as a trigger value for promotion.
- For example, once a customer order frequency reaches the median order frequency, we can send out promotion email to reengage the customer.