Personalized vs Dynamic Pricing

By- Nishtha Rathod

Introduction

How can BigCommerce stores charge higher prices for better profits?

- The answer is personalized pricing. Dynamic pricing and surge pricing accomplish the same thing for retailers, charging what the market will bear.
- Personalized pricing strategies take this concept to an individual level.
- BigCommerce marketers are embracing personalized pricing strategies to increase revenues. In other words, two shoppers buying identical items can pay significantly different amounts.

What’s the difference between Dynamic and Personalized Pricing?

- The price fluctuation that we see during online flight booking is an example of dynamic pricing, as it depends on factors like the day of the week, time of the day, competitor prices, or the available supply. Everyone shopping for that item, at that time, sees the same price.

- If we look at Personalized pricing, it’s more like 4 different people with different needs looking at the same product, but will see 4 different prices. This happens due to the individual’s demographics and other personal data collected.

GOAL!!

Charge what the market will bear

The goal is to sell at the highest price without upsetting or losing the customer. It is no different than the pricing strategies merchants have used since the beginning of trade. Only, instead of sizing up a customer by the clothes he's wearing or the number of camels in the caravan, merchants use far more sophisticated and personalized data.

Problem Statements

Flat Dynamic Pricing

- Supervised Learning Problem

- Prediction goals
  - Total sales
  - A confidence interval might be desirable

- Input
  - Historical data
  - E.g. exogenous factors (weather), season, price

- Models
  - A statistical economic model might be desirable here, due to the simplicity of the problem
  - Forecasting model (e.g. ARIMA with exogenous factors)

Individual Dynamic Pricing

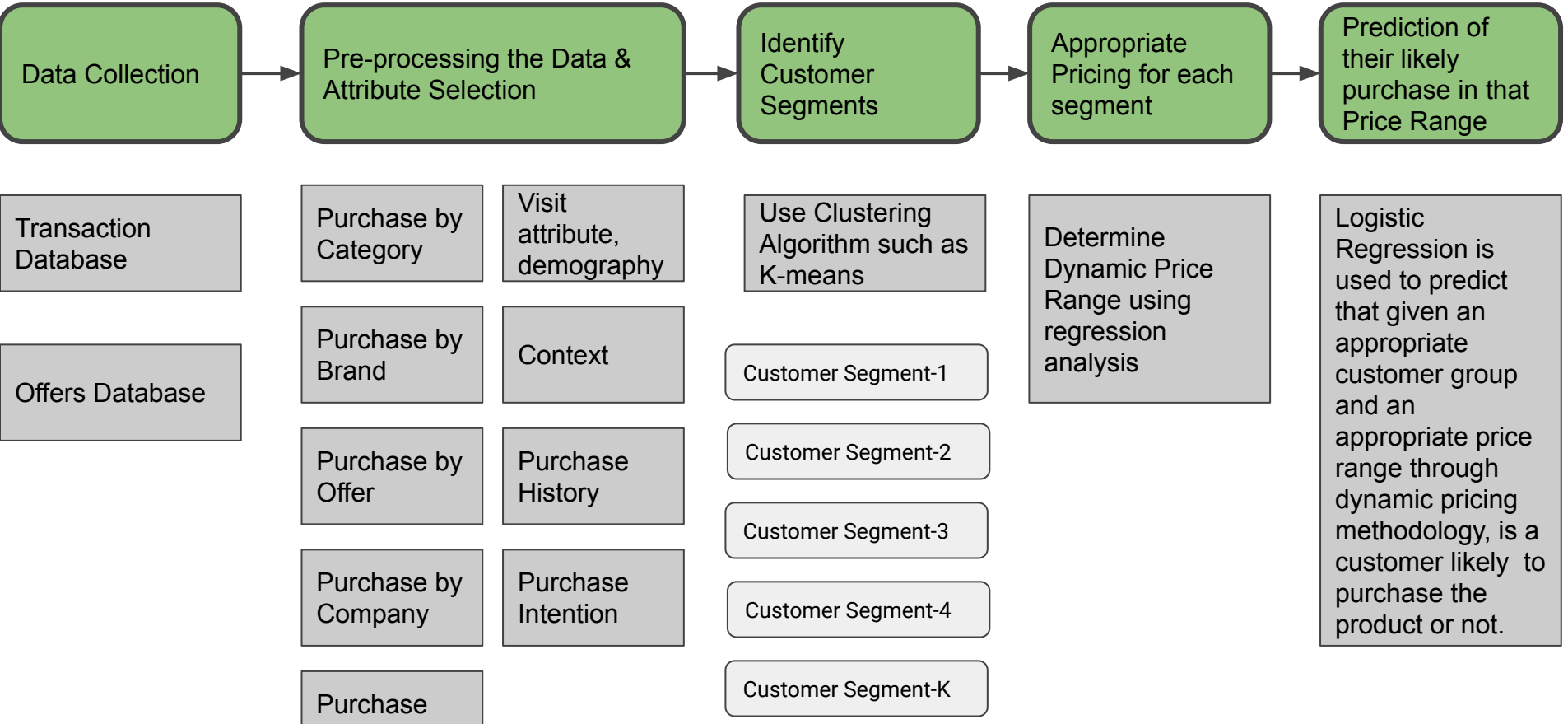
- Supervised Learning Problem

- Prediction goals
  - Probability of buying a specific product
  - Probability of buying a product with specific features
  - A confidence interval is desirable (some techniques, eg. Gaussian processes can offer that)

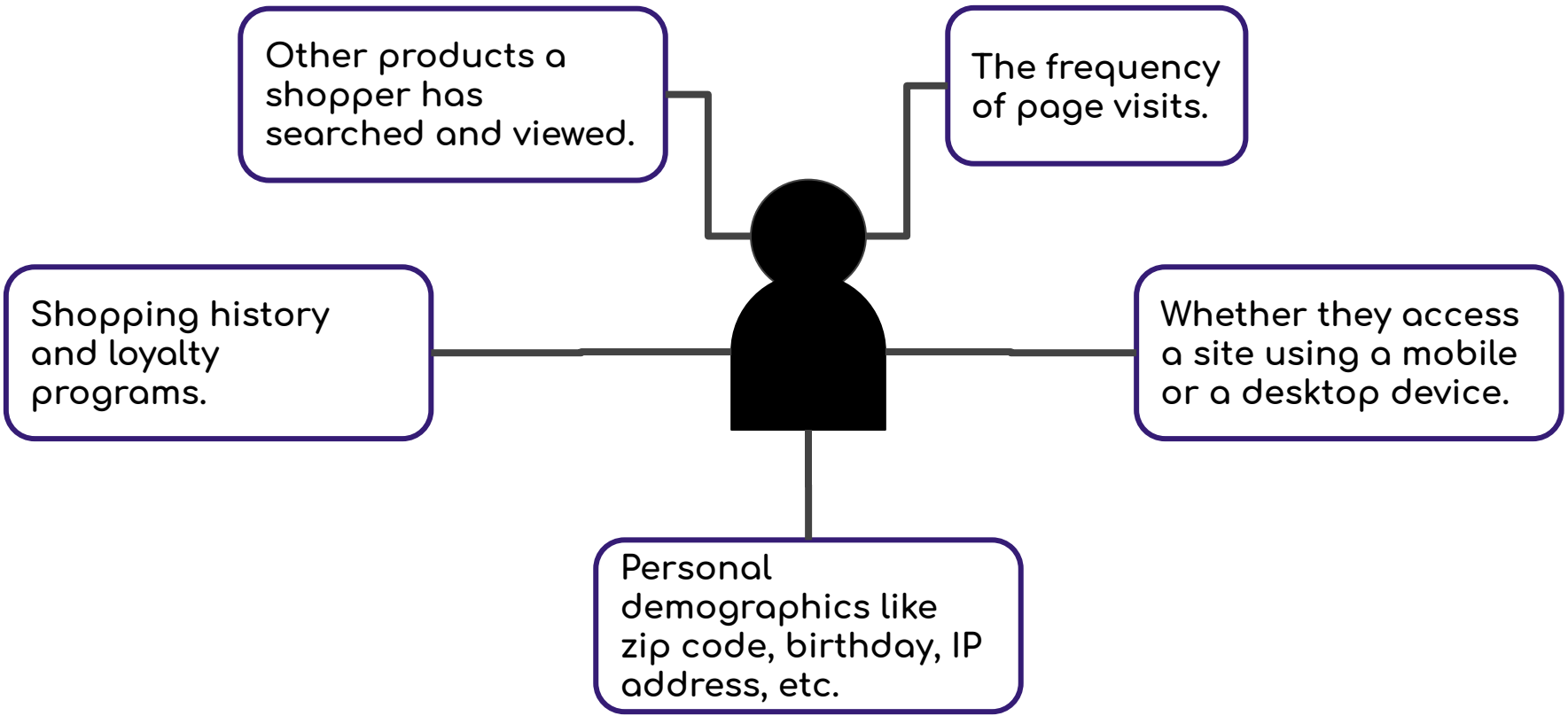
- Input
  - Demographic features (e.g. age, gender, location, etc)
  - Historical data
  - Data from other users

- Models
  - Any supervised model
  - Recommender model

Implementation

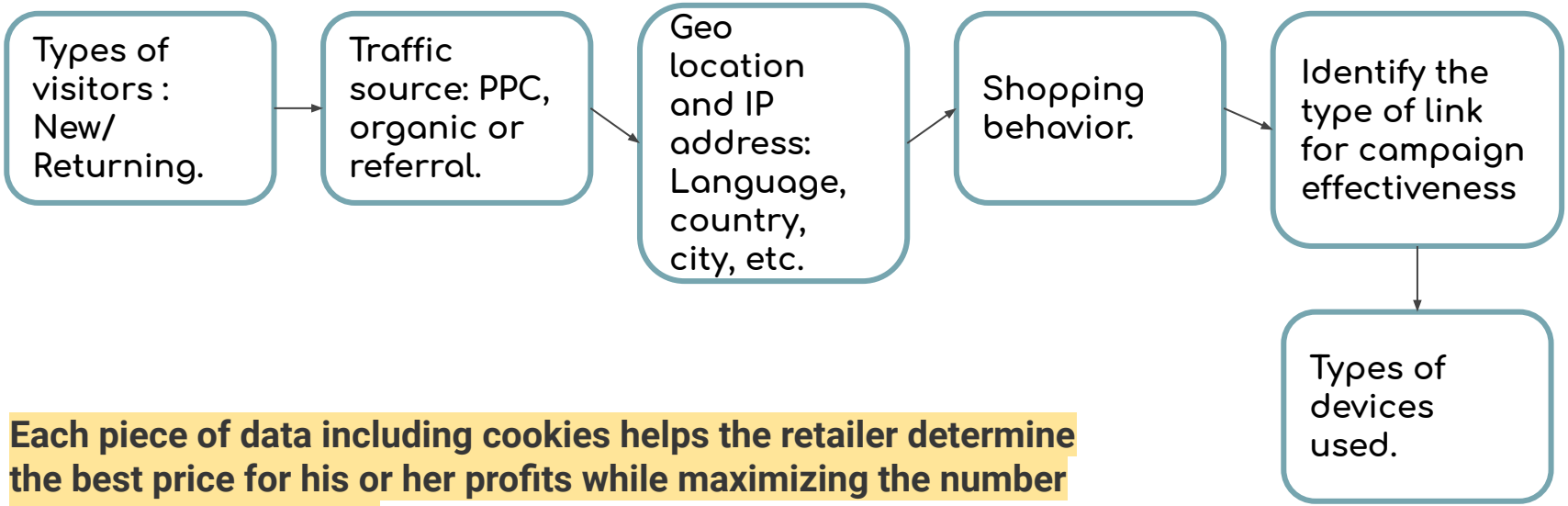

Data Collection
Pre-processing the Data & Attribute Selection
Identify Customer Segments
Appropriate Pricing for each segment
Prediction of their likely purchase in that Price Range
Transaction Database
Offers Database
Purchase by Category
Visit attribute, demography
Purchase by Brand
Context
Purchase by Offer
Purchase History
Purchase by Company
Purchase Intention
Purchase Qty, Amount
Use Clustering Algorithm such as K-means
Customer Segment-1
Customer Segment-2
Customer Segment-3
Customer Segment-4
Customer Segment-K
Determine Dynamic Price Range using regression analysis
Logistic Regression is used to predict that given an appropriate customer group and an appropriate price range through dynamic pricing methodology, is a customer likely to purchase the product or not.

Data collection



Segmenting the Traffic (detailed technical solution will be provided for this)

To begin personalizing prices, marketers need to segment customer traffic and treat each differently.



Each piece of data including cookies helps the retailer determine the best price for his or her profits while maximizing the number of people that will buy.

Conclusion

- One risk of too much price fluctuations is that customers feel that retailers are taking unfair advantage of them by knowing too much about them. Approach any new pricing strategy slowly through testing.

- It’s the ongoing struggle of pricing between buyer and seller happening since the beginning of trade. Merchants wants the highest price, and the buyers wants to spend as little as possible. Personalized pricing is the closest you can get to the medium.