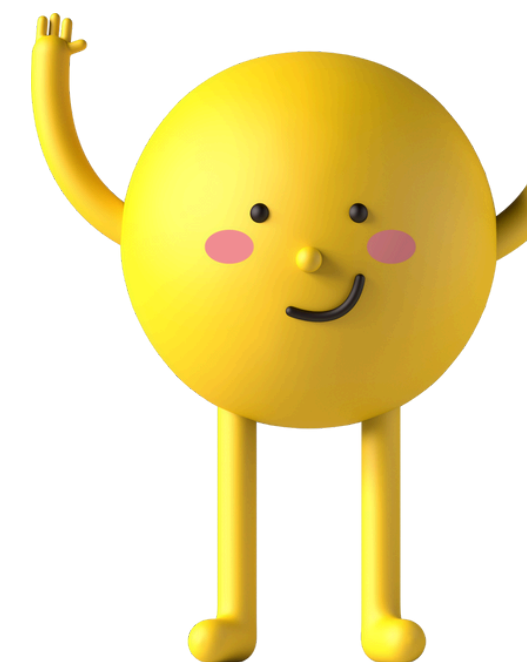


Analytics- Enabled Marketing Project

Using machine learning to predict customer buying probabilities

PRESENTER
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Background

ABC Supermarket, a major UK retailer, is launching a new line of organic products. They aim for fast market penetration through an analytics-driven marketing campaign, starting with their 250,000 loyalty program participants. They've already distributed free sample kits to 10% of participants and tracked their purchase decisions. Now, they plan to target the most probable buyers among the remaining 90%.

Our Deliverable

We are tasked to target the most probable buyers from the remaining 90%. With the objective of optimizing profitability and market penetration, given:

- **revenue from a successful buyer = \$15,000**
- **cost of promotional sample kit = \$4,420**

Our Approach

Assumptions

- Missing values imputed
 - mode for categorial variables
 - mean for continuous variables
- Label Encoding for converting variable text labels to numbers

Training classification model

- Using logistic regression classifier
- predicting buy (1) or not buy (0) behavior

Outcome

81 % model accuracy achieved
\$0 operational cost

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Strategic Marketing Options for 90% Loyalty Base

| | Strategic Option | Participants Covered | Proportion of Good/Bad | % Total Buyers Reached | % Total Non Buyers Avoided | Probability threshold | Profit Booked |
|---------------------|------------------|----------------------|------------------------|------------------------|----------------------------|-----------------------|---------------|
| No Model Scenario | All 100% | 225,000 | 24% | 100% | 0% | 0 | -\$176M |
| Market Penetration | Top 40% | 90,000 | 44% | 72% | 70% | 24.4% | \$196M |
| Profit Maximization | Top 30% | 67,500 | 51% | 63% | 80% | 31.1% | \$214 |