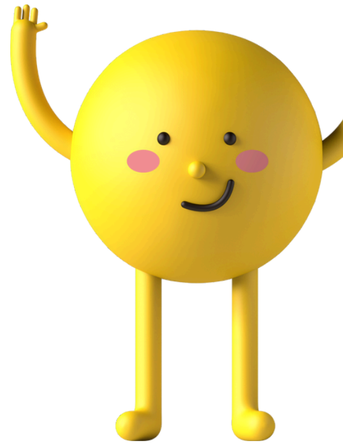
Analytics- Enabled Marketing Project

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	Particpants 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