Class 8: Workshop: Improving Marketing Efficiency Using Predictive Analytics

Dr Wei Miao

UCL School of Management

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Section 1

Tesco Case

Background

Tesco is looking to promote its new private-label products to existing customers. The marketing analytics team decides to use the conventional mailing marketing strategy so that customer would receive color-printed leaflets via Royal Mails to their doorsteps.

Cost-Benefit Analyses

- Each mail costs **£1.5** to produce and another **£0.5** to mail to the customers. If customer responds to the offer, the management expects customers to spend **£20** on trying the new products, where the COGS is **60%**.

- The cost is the marketing offer we send, cost_per_offer

```
1  # cost of sending an offer
2  cost_per_offer <- 1.5 + 0.5
3  cost_per_offer
```

```
[1] 2
```

Cost-Benefit Analyses

- The benefit is the profit margin if a customer responds, `profit_per_customer`

```
1  # profit from a responding customer
2  COGS <- 0.6
3  profit_per_customer <- 20 * (1 - COGS)
4  profit_per_customer
```

```
[1] 8
```

Break-Even Response Rate

- In order to break-even, we can calculate the break-even response rate from customers:

```
1  break_even_response <- cost_per_offer/profit_per_customer
2  break_even_response
```

```
[1] 0.25
```

- Only if a customer responds to us with at least 25% response rate can we recover the costs of making an marketing offer.
- If we send offers to customers whose expected response rate is lower than 25%, we make a loss by expectation.

Improving Marketing Efficiency Using Predictive Analytics

1. Prepare data for ML model (data wrangling)
   - a training set and a test set
2. Train predictive models on the training set (decision tree and random forest)
3. Predict customer response rate on the test set
4. Target customers based on predicted response rate
5. Compute ROI for each scenario
   - Blanket marketing
   - Decision tree
   - Random forest

Let's work on the remaining case study questions together!

Section 2

Predictive Analytics and Marketing

Predictive Analytics and Customer Life Cycle

- Acquisition (Tesco Case Study)
  - Use predictive analytics to target responsive customers to reduce marketing costs
- Development
  - Use predictive analytics to recommend products to customers (personalized recommendation system)
- Retention (Week 5 Case Study)
  - Use predictive analytics to find risky customers and conduct churn management