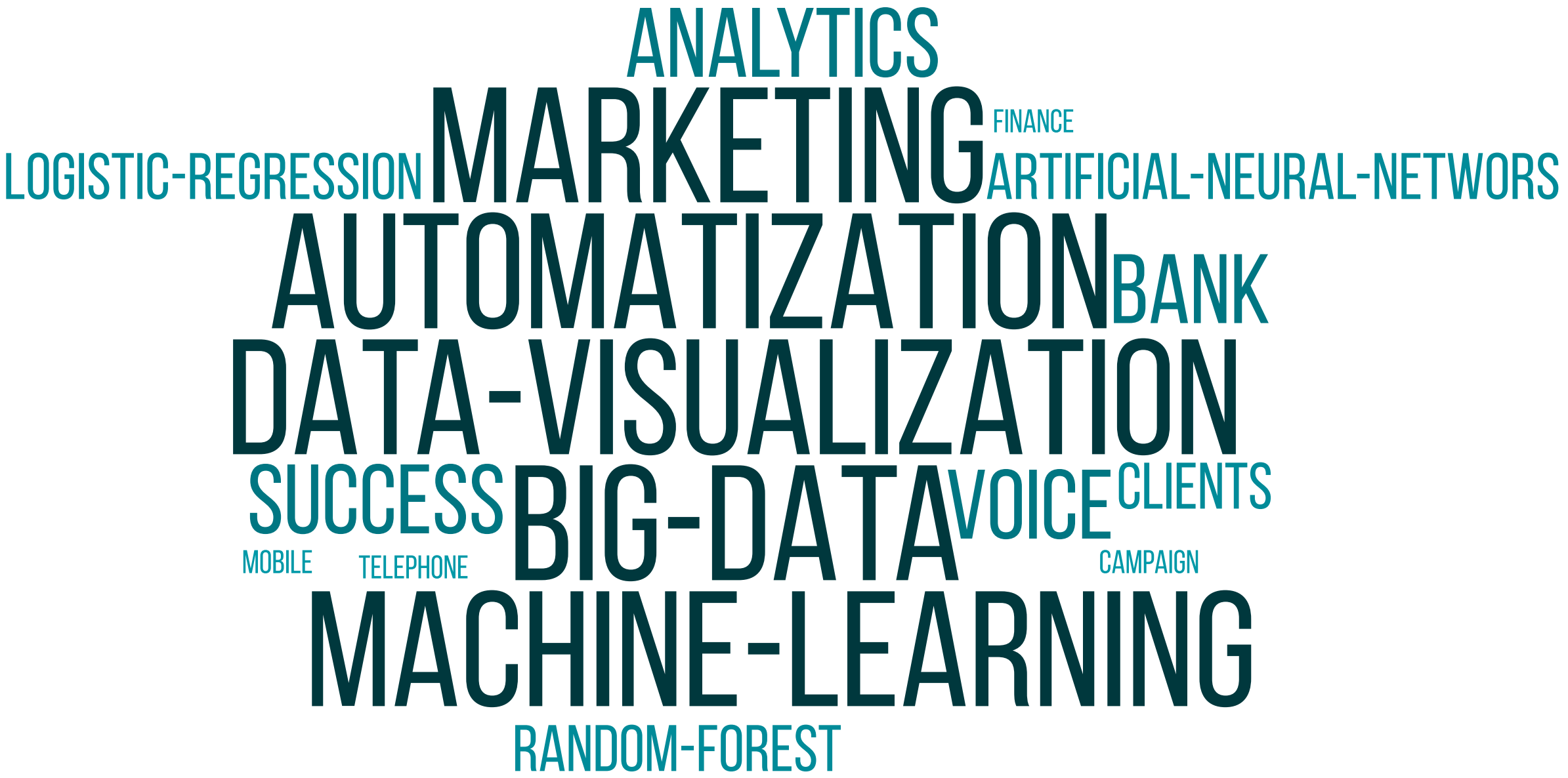
Bank marketing campaign

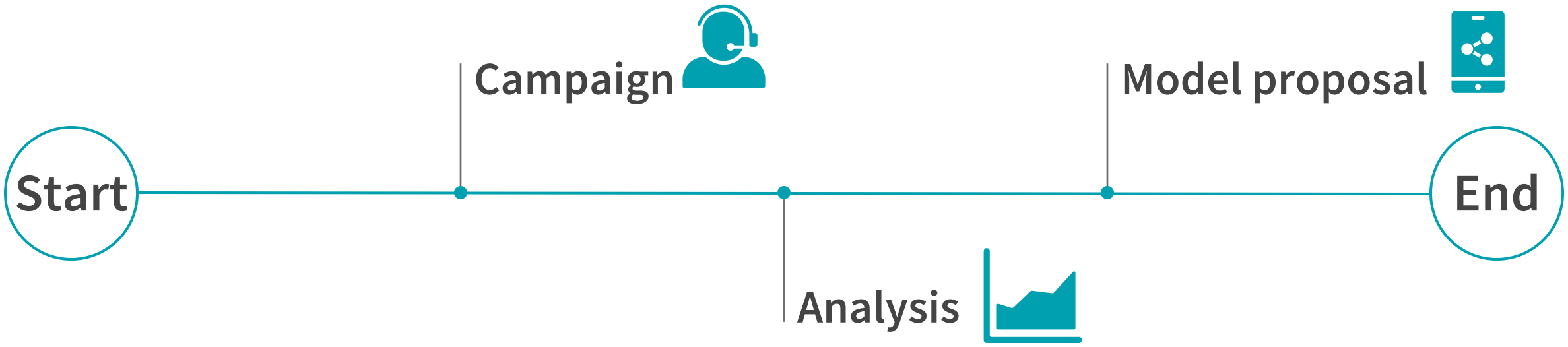
A voice-call marketing campaign analysis

Jacopo Demichelis
Edoardo Filippi-Mazzola
Michela Maineri
Andrea Rafanelli
Chiara Rodella

What are we using?



Business roadmap



Campaign Context

Stakeholders

Key

- Marketing Director
- CIO

Potential

- Senior Management

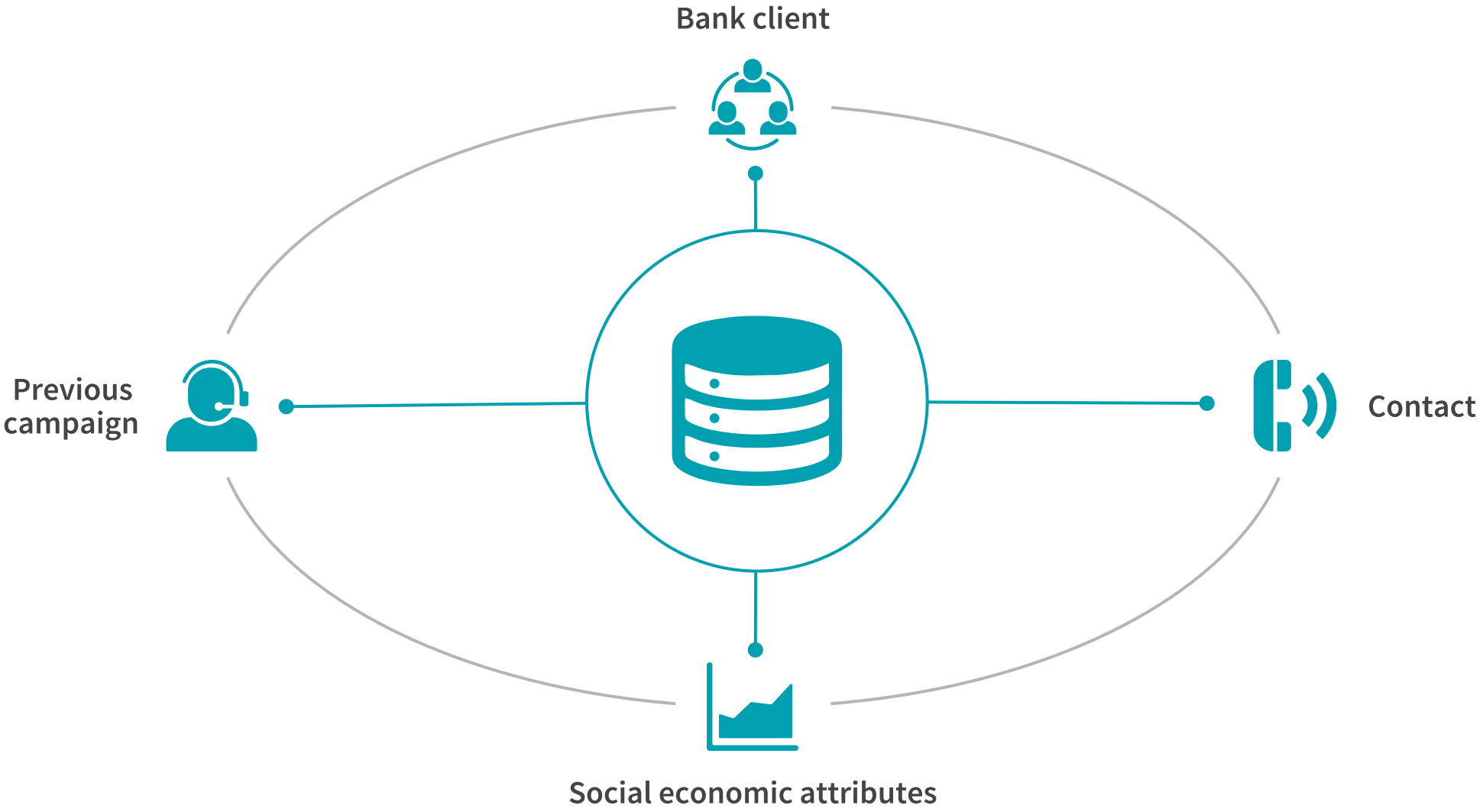
Challenges

- Exploit data
- Competitive advantage
- Expand customer base

Project scope

- Effective and efficient voice-call marketing campaign
- Predict the success in subscribing a bank product

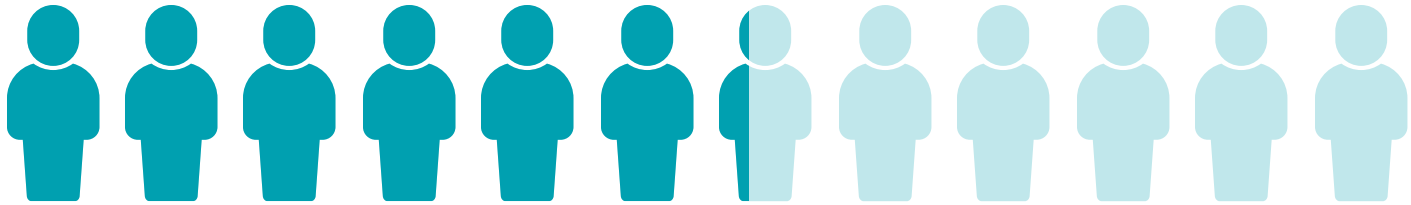
Starting point



End point

HOW did it happened?

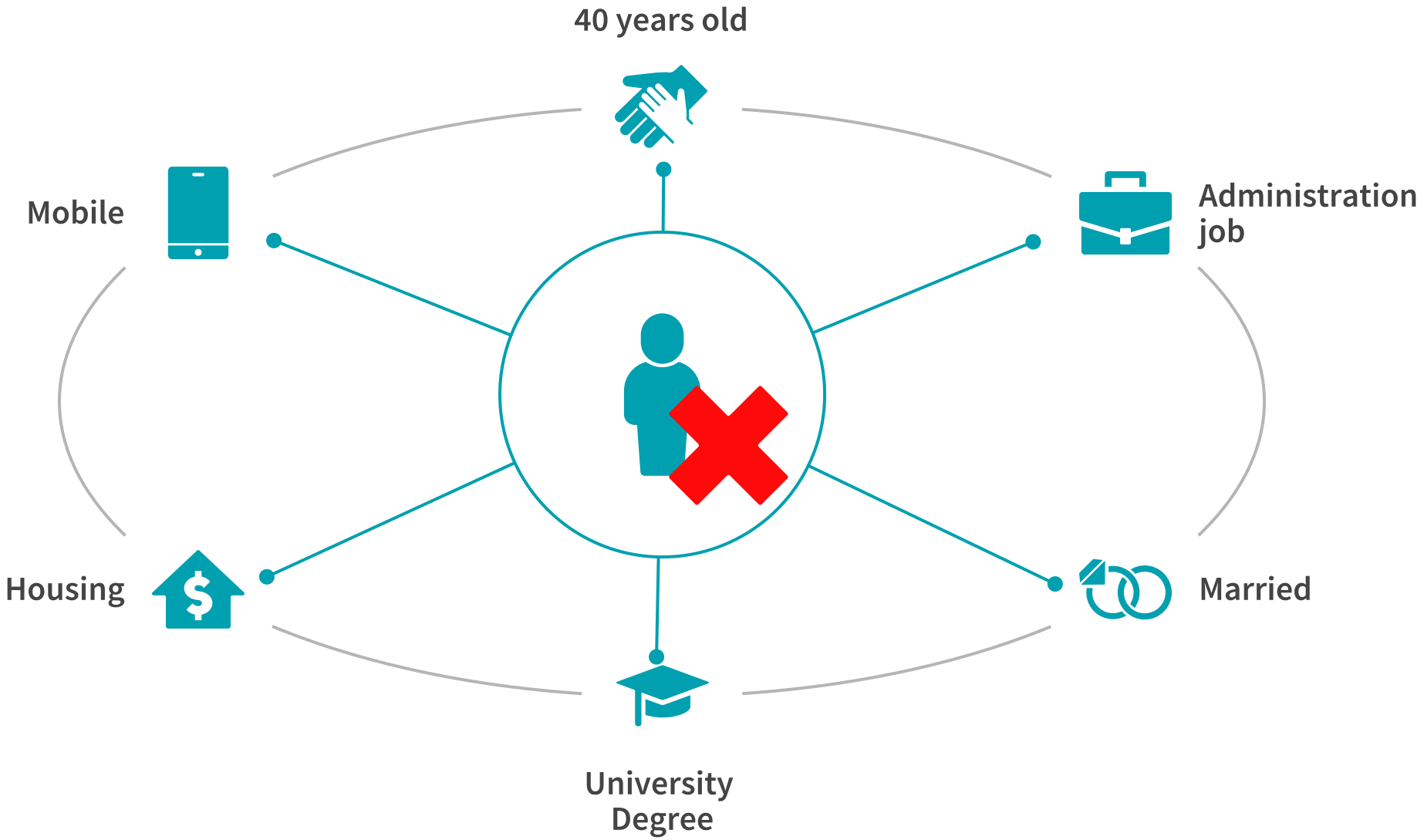
52%



Last campaign success

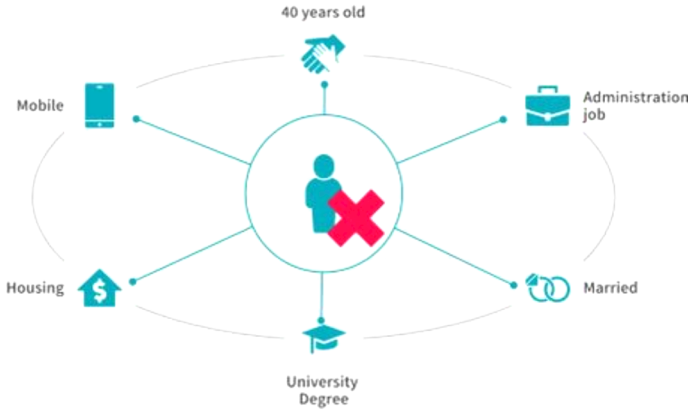
Was it **PREDICTABLE**?

Clients called on average



Clients to be called

Who should you have called using Clients characteristic?



< 60 years old
> 29 years old

Mobile

Student
Retired

Housing

Single

Illiterate
University degree

Clients to be called

Who should they have called using Loan and Housing Mortgage?

56%

Success on clients that have a MORTGAGE

85%

Success on clients that have a LOAN

Type of contact used

2.7 times on average	2.14 times on average	Mobile: 83% Telephone: 17%
Telephone Type Contact	Mobile Type Contact	Marketing campaign success

When to contact based on month

70% of calls made from May to August

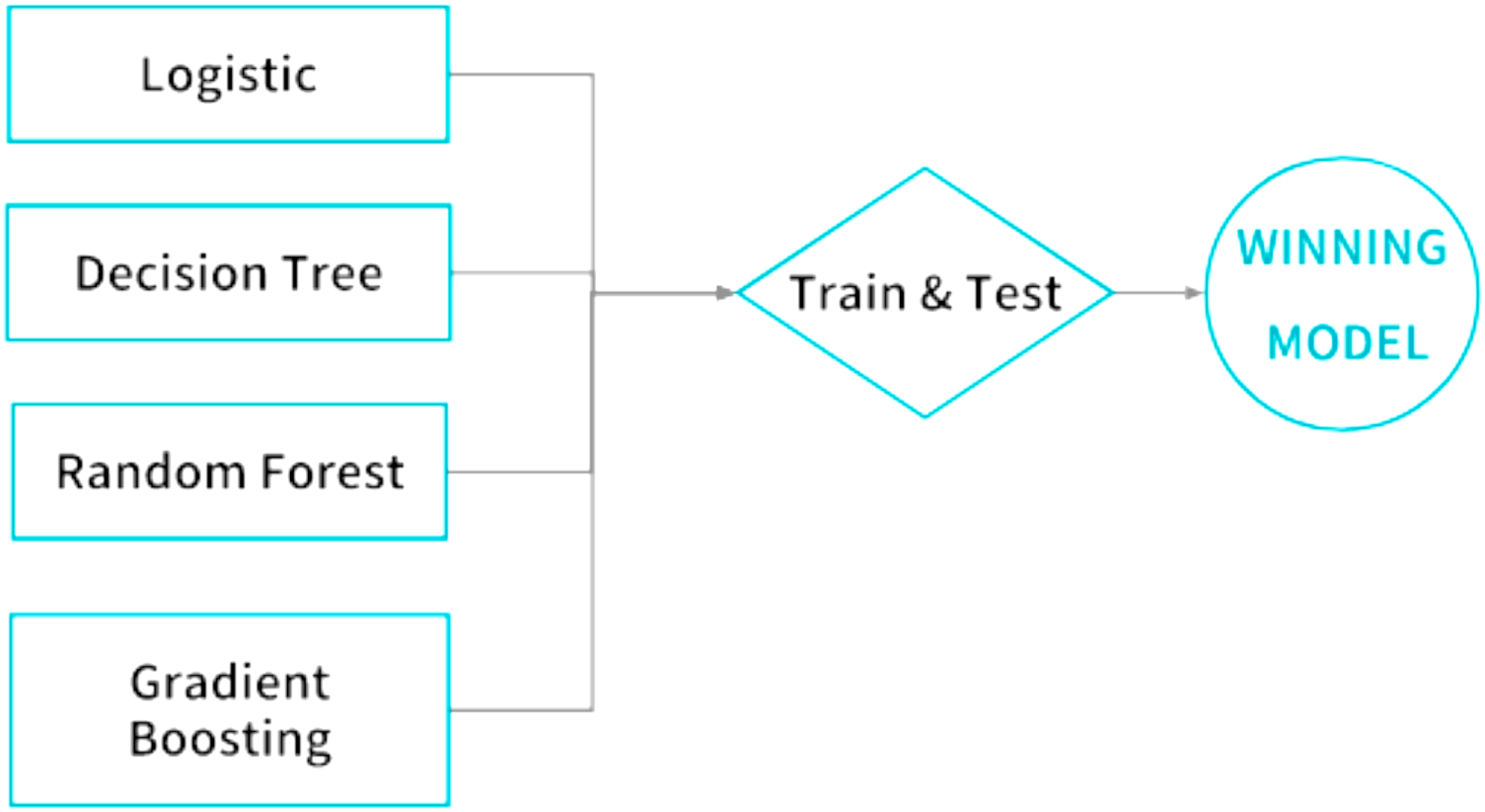
30% of calls made from September to December

44% success of campaign

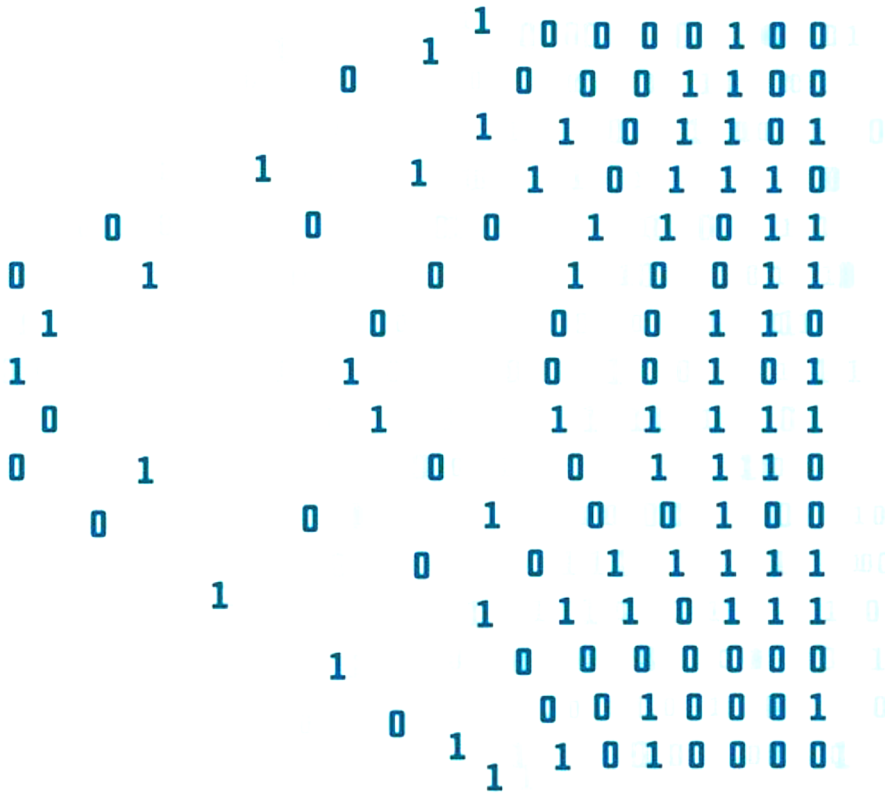
56% success of campaign

The Cardinal Path Approach

- Evaluate multiple models
- Agile deployment
- Machine Learning algorithms
- Iterative approach



Our proposal: Winning Model



It answers the question: will this client subscribe?

- Most effective model: Gradient boosting
- Accuracy: 75%

Almost 8 time out of 10 the model answers correctly

Our products based on the model

Creation of a PREDICTIVE MODEL
able to predict the success of the purchase

Classic GB Prediction

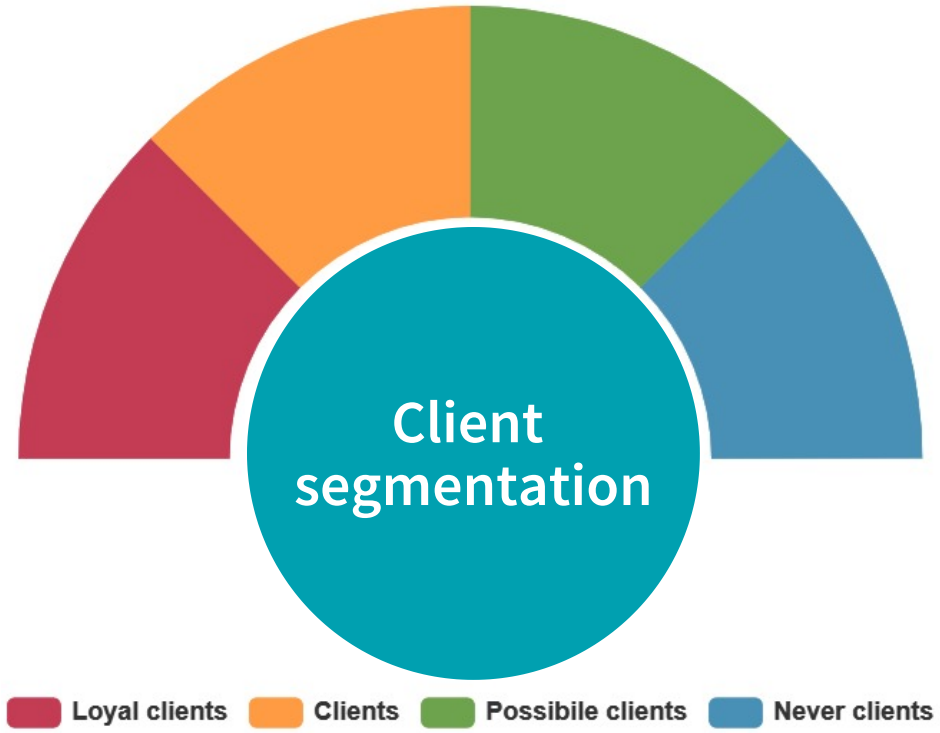
Short term application
Classify a client based on its features

Lift & Cumulative Gain

Long term application
Client segmentation based on prob. of saying “yes”

Client segmentation

Lift & Cumulative Gain



- Segmentation is build on quarters of the amount of available clients
- Based on probability for clients that will purchase
- The higher the probability the more effort the company should put for those individuals
- Budgeting and resources optimization

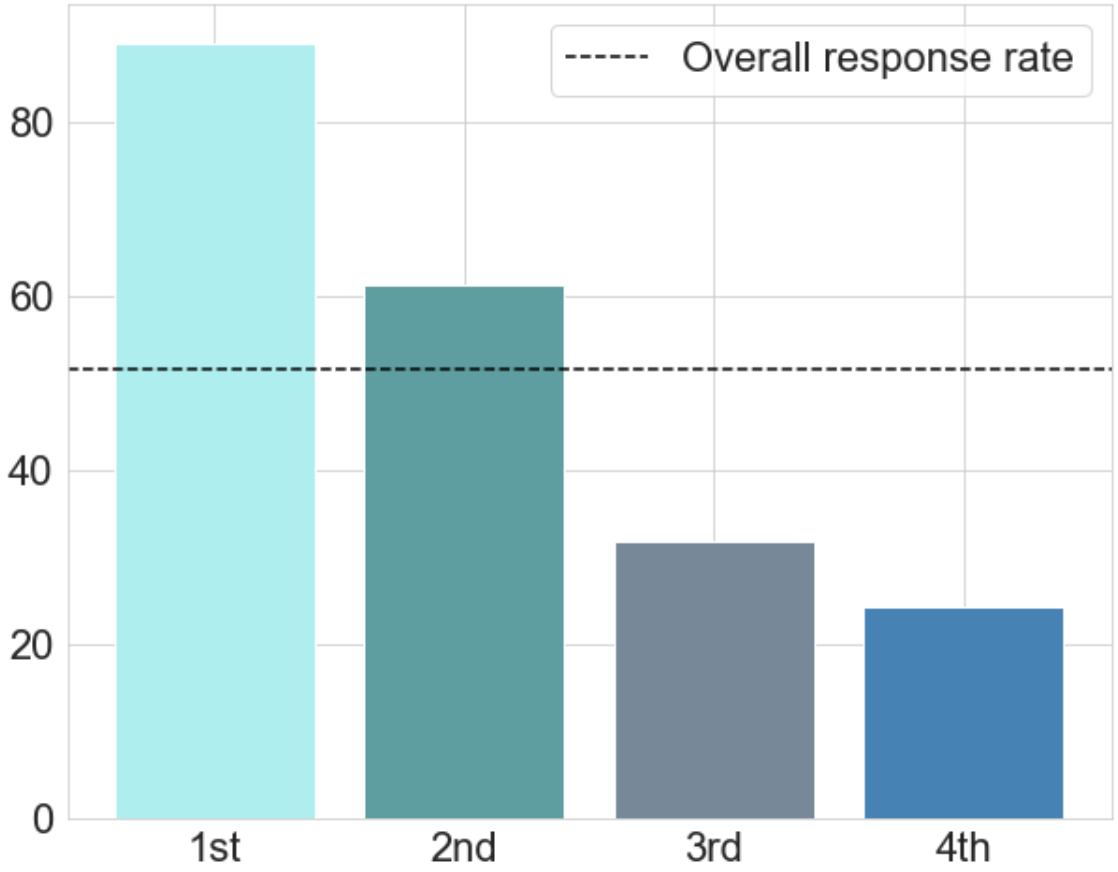
Lift analysis (1): Waterfall Chart

Lift & Cumulative Gain

Client segmentation

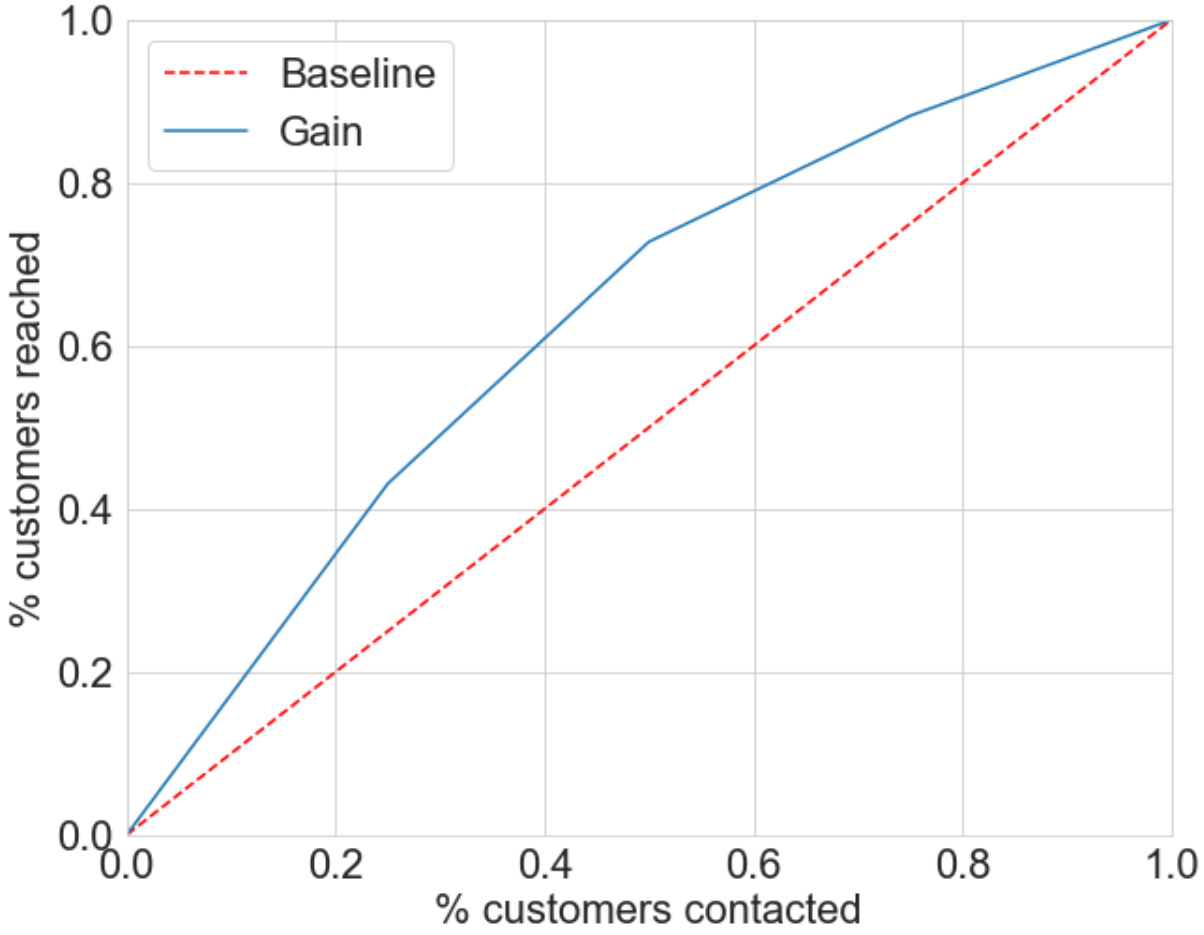
- 1st: Loyal clients
- 2nd: Clients
- 3rd: Possible clients
- 4th: Newer

- Overall response rate = average of segments response rates
- Response rate for each segment, compared with the overall response rate
- Loyal clients and Clients segments have a higher response rate w.r.t. other segments



Lift analysis (2): Cumulative Gains Chart

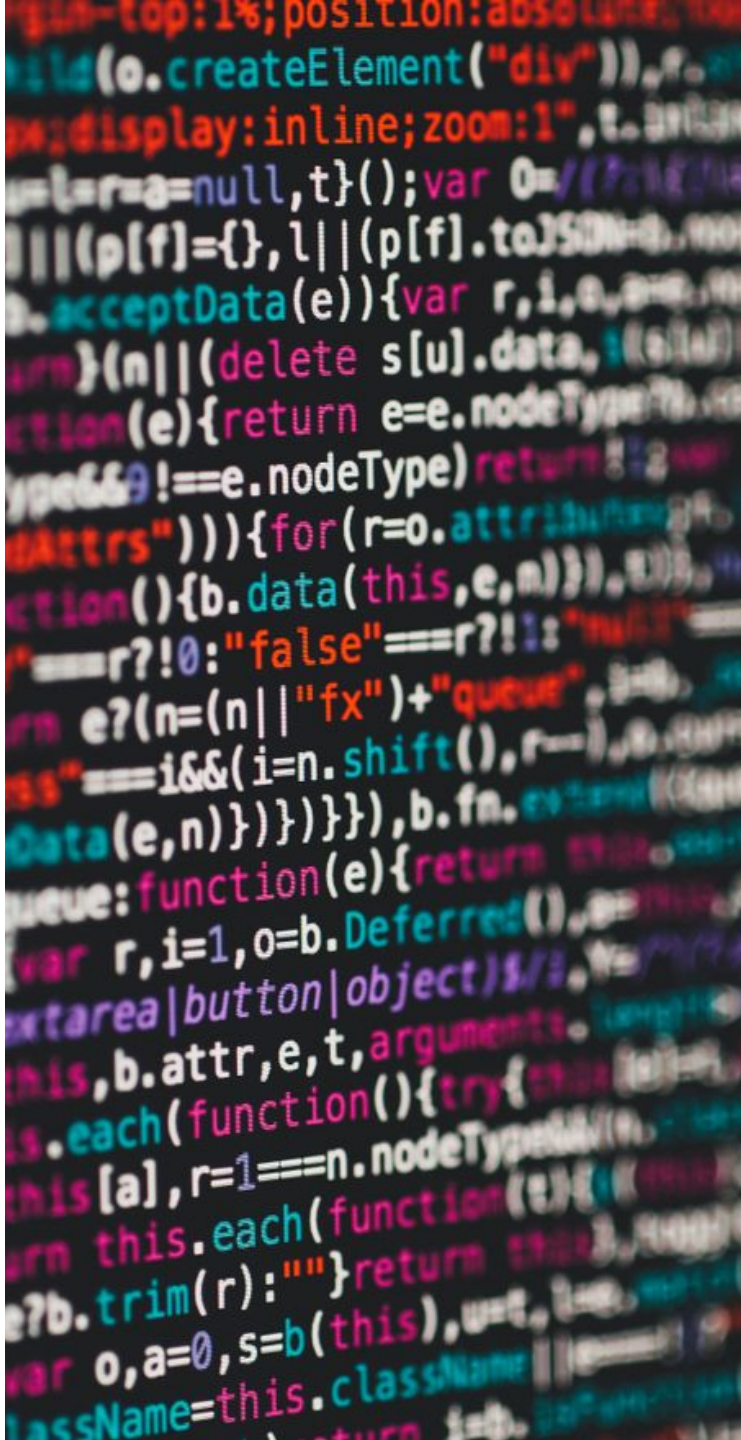
Lift & Cumulative Gain



- Percentage of client contacted w.r.t. the client customers reached
- Example: if the bank contacts the first 20% of potential customers ("loyal clients"), it is able to obtain more than 30% of the overall purchases.

Recap

1. Last marketing campaign results
2. Client profiling
3. Client characteristics analysis based on campaign performance
4. Training a model to optimize future campaigns
5. Lift analysis to provide alternative to classic machine/statistical learning prevision



Conclusions

Last campaign wasn't successful enough

Only 52% of potential customers that were contacted arrived to a purchase

Last campaign was focused on enlarging client base

From the descriptive analysis it is possible to see that this last campaign was mainly focused on enlarging the client base

Gradient boosting is the winning model

Gradient boosting, among the ones tested, is the model with the higher accuracy (75% of right answers)

Lift approach gives alternative to GB prevision

Using lift approach the company will be able to focus the attention towards clients with a higher probability of saying “yes”

Thank you for your attention