

Bank Marketing Analysis

refining predictions
for marketing campaigns

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business context

scenario: bank marketing campaign

main goal: more term deposits

bank pays call center to reach out to existing clients

future campaigns should have

1. more term deposits
2. fewer unsuccessful calls



data overview

- 50,000 client records from previous campaign
- shows whether client made a term deposit
- also contains clients'
 - age
 - avg. checking account balance
 - education level
 - career type
- and whether the client
 - made a term deposit before
 - has a loan
 - has defaulted before



project goals

Predict what kind of clients to target in next campaign

thus increasing campaign **efficiency**
(fewer wasted call center expenses)





process overview

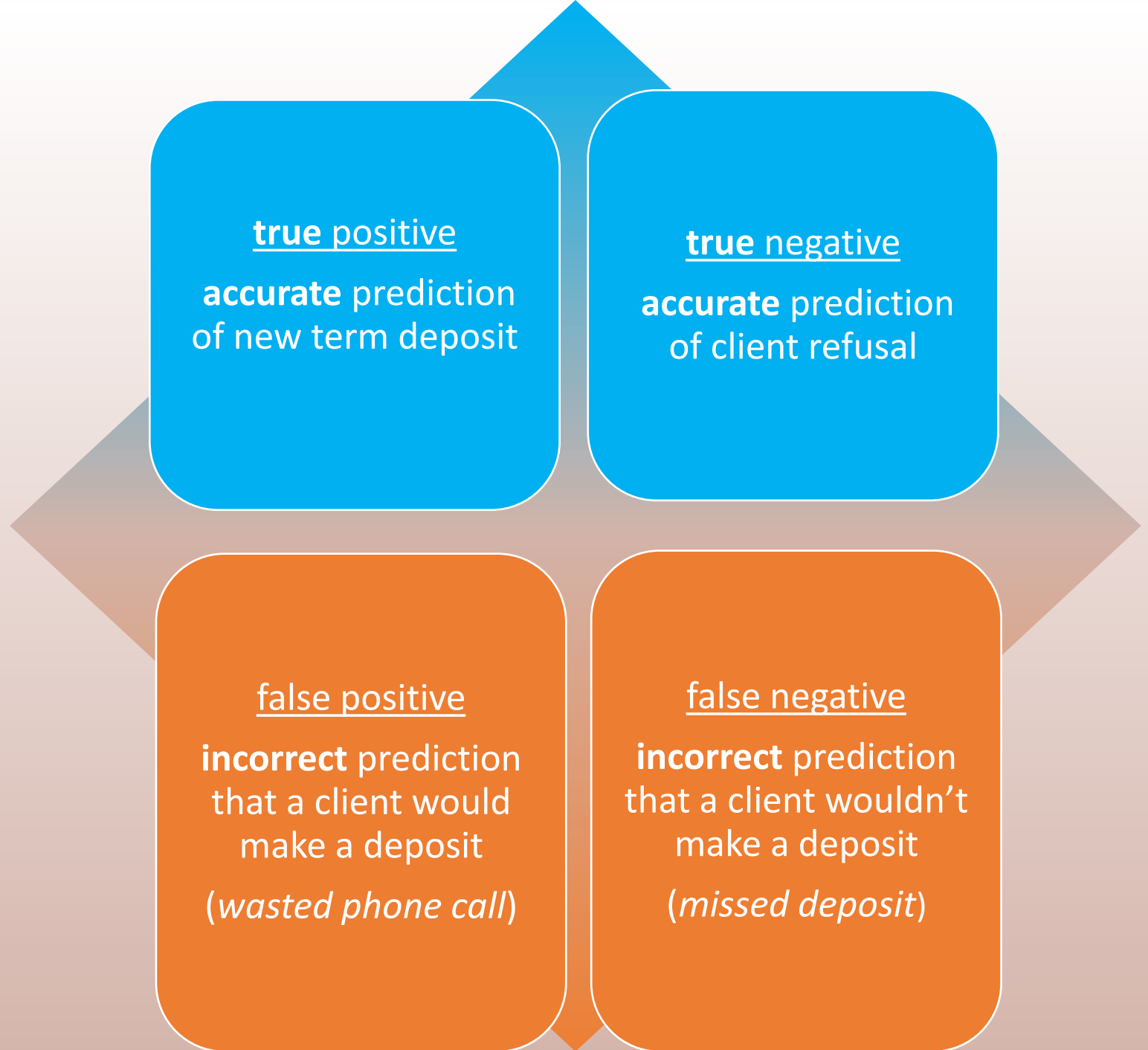
1. run three kinds of classification **models**:

- each begins with **baseline**
- make gradual **improvements**
- **evaluate** based on deposit predictions


2. **summary** of findings

- which models work best
- helpful findings from other models

classification model predictions



previous campaign results



11.7%
positives

88.3%
negatives

- a **perfect** model would **match these results** with no false positives/negatives
- **realistically we can come close**, but predictions won't be perfect

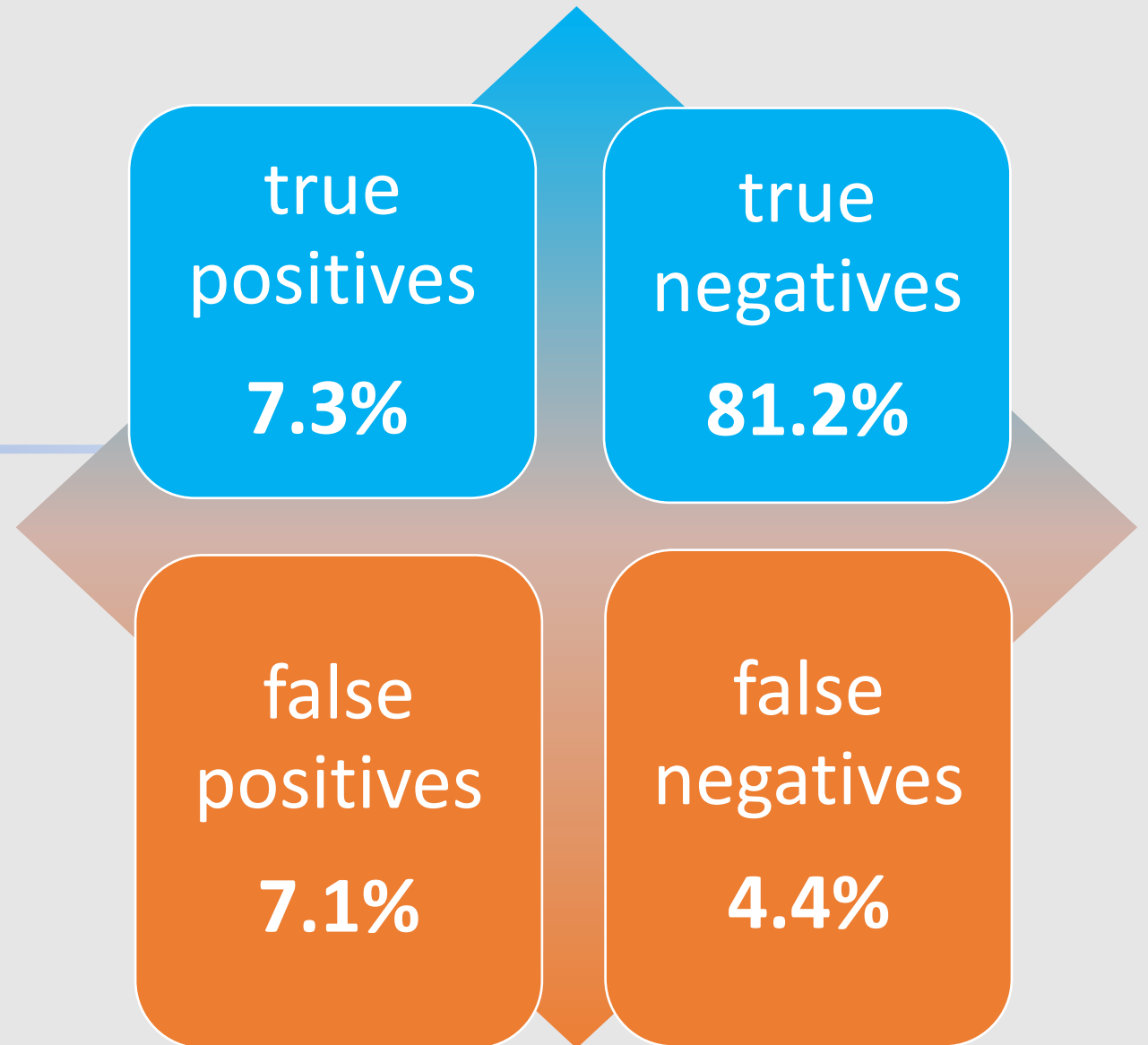
best **overall** predictor: decision tree model

model correctly predicts:

- 62% of positives
- 92% of negatives

lower positive rate due to:

- taking wasted call costs into account
- data's imbalance of positives & negatives

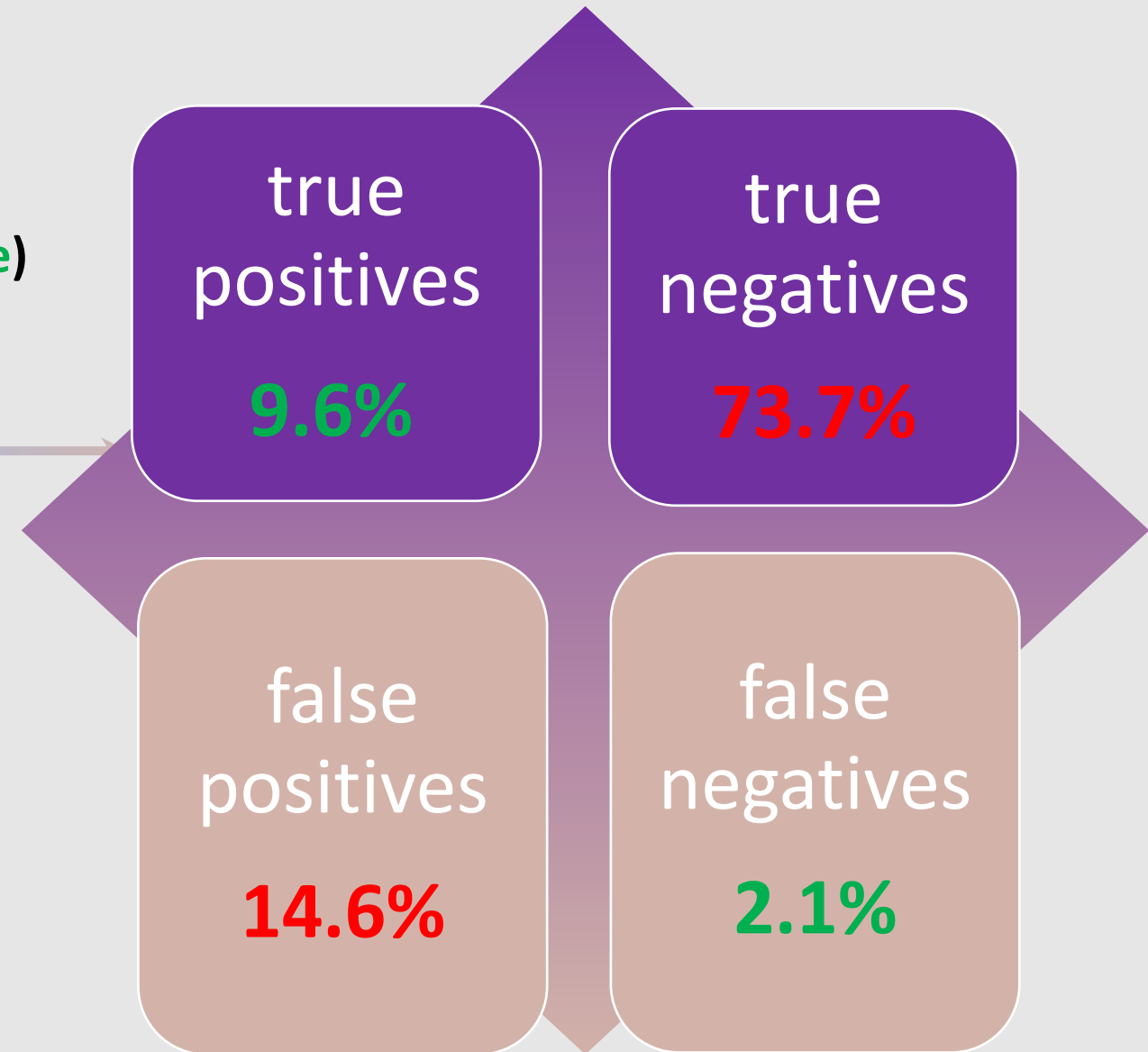


if focus shifts more so to new deposits:

Logit model predicts:

- positives 82% correctly (**20% better than before**)
- negatives 84% correctly (**8% worse**)

This model maximizes term deposits,
but results in over twice as many wasted calls.



other recommendations

numerous
calls to a client
won't help

- cut losses early on when client refuses or won't answer

repeat
depositors

- previous depositors **much more likely** to do so again

average
checking
balance

- **higher balances** = much higher deposit likelihood

thank you

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