

Collection process
in the new normal:
how can ML help?



Building a better
working world

Utilizing Machine Learning in the Collection Process

The Concept

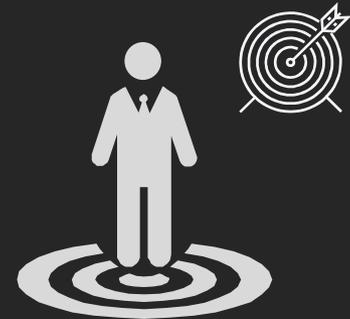
A lot of data is produced by debtors during their lifecycle.



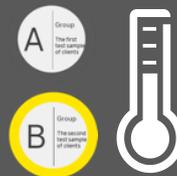
Combined with machine learning, this data can uncover relationships and help evaluate **individual collection risk**



We can predict the **most effective collection strategies for debtor subsegments or individuals**



...potentially augmented by strategies testing or using existing data from the collection process



The Collection Process in the New Normal

A Phased Approach

The current situation



Collection models, segmentation and strategies are based on pre-Covid-19 historical data



Covid-19 possibly rendered some of these models and processes obsolete



We need to adapt the collection process to the "new normal"

Our solution

Diagnostics component



Predicting payment probability

Predicting time-to-collect for individual debts

Optimization component



Selecting optimal collection strategy

Focus on disrupted customer segments

Collection Process in the New Normal

Key Questions



- Which debtor segments have undergone significant behavior changes during the Covid-19 situation?
- What are the main new drivers behind the disrupted segments' changed behavior?

- Which strategies work best for the disrupted customer segments?
- Are the strategies' costs worth the customer value?



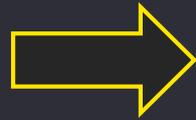
Potential Next Steps:

Continuous optimization
Individual strategies

- How to ensure the early identification of disrupted customer (sub)segments in the future?
- What if my strategies' performance will change over time?
- Which strategy works best for a specific customer?

Diagnostics

Finding out what changed during the Covid-19 crisis



Gather and prepare data

Both pre- and during-Covid data is needed

Train and test ML model

The model learns what payment drivers have changed across the portfolio's segments

Analyze the results

Determine which segments need a change of strategy after Covid disruption



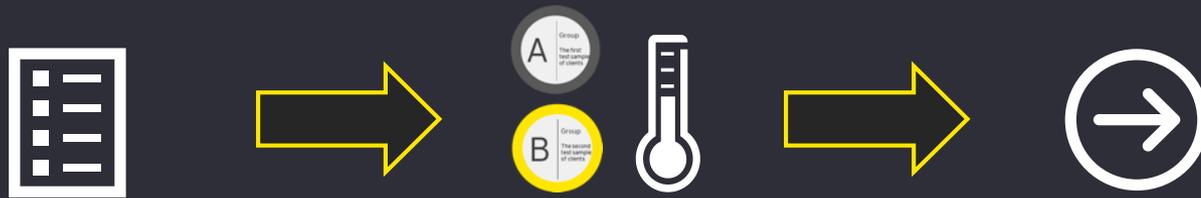
How accurate are we in our predictions, testing with data the model has not seen, in comparison to pre-Covid?



How have the main drivers of different segments changed during Covid?

Optimization

Fix the strategies in segments disrupted by Covid-19



Design strategies to test on each subsegment in practice

Test strategies on subsets of clients in each subsegment

Monitor performance during testing

Evaluate which strategies were the most successful

Optimize collections strategy for cost-effectiveness



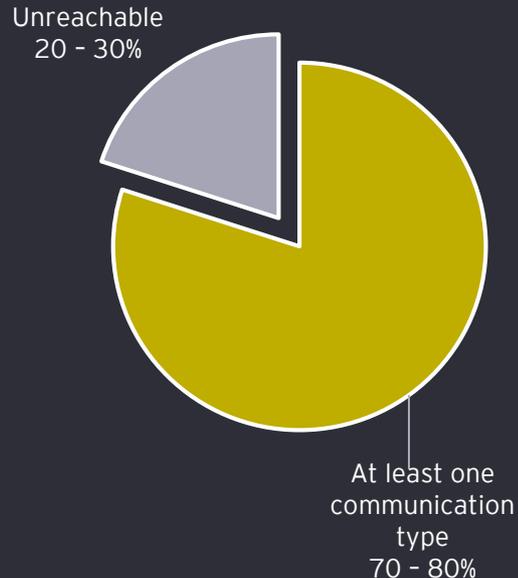
What are the optimal strategies for each disrupted customer segment and subsegment?

Example project

The goal

- Predictively identify payments and risk of non-payments
- Identify effective type of communication for each of a set of scenarios

The portfolio



Modeled scenarios

1. Would pay next month
2. Might not pay next month
3. Might stop paying
4. Might start to pay
5. Paying regularly

Example questions answered

- How do collection zone changes affect probability of payment?
- How does the number of consecutive calls improve success?
- How effective is sms?
- How early to call before payment due date?

Example insights



- Repeated wake-up calls represent an inefficient cost in the case of chronic non-payers
- Escalating the first-time non-payers to hard collection was inefficient in comparison to keeping them in soft collection
- Paying debtors are most likely to continue paying in the case of a call reminder approximately 5 days in advance of the payment date

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