# Business ProcessConclusion Prediction

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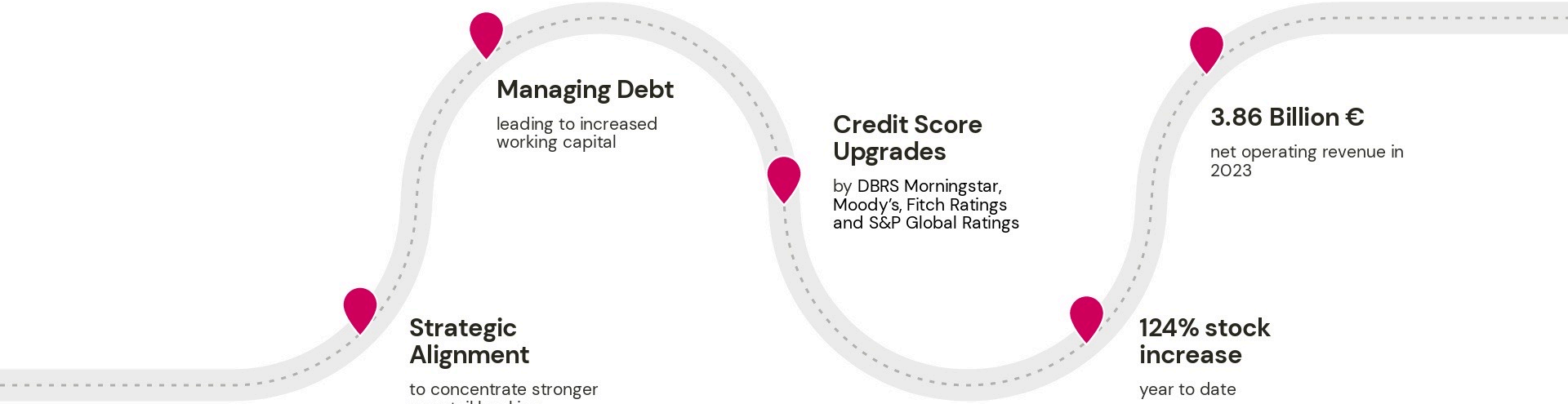
## Business Situation

# Millenium bcp's last year



**Strategic Alignment**

to concentrate stronger on retail banking activities

**Managing Debt**

leading to increased working capital

**Credit Score Upgrades**

by DBRS Morningstar, Moody's, Fitch Ratings and S&P Global Ratings

**124% stock increase**

year to date

**3.86 Billion €**

net operating revenue in 2023

# Business Challenge & Strategic Solution

## Current Challenge

- Processes are inefficient
- Lack of standardisation and automatisation

## The Solution

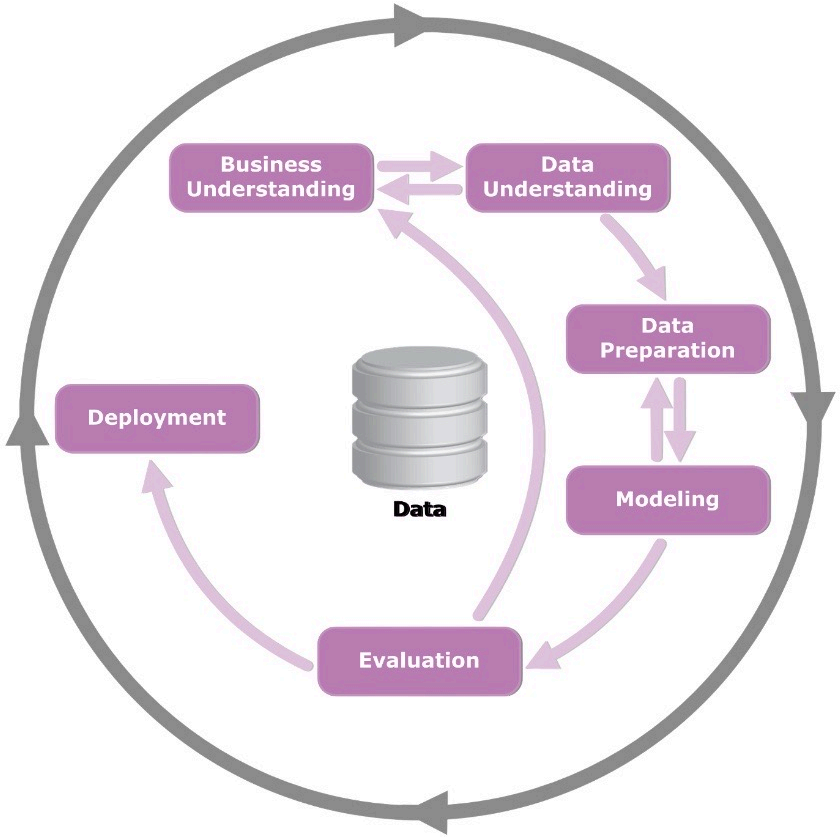
- Predict the outcome of a process at an early stage
- Decrease the throughput time of processes

## The Opportunity

- **6.6 million €** can be recovered through process speed-up

Methodology

# Crisp-DM




## Data Understanding

- Analyse process through-put time
- Inspect waiting time

## Modelling

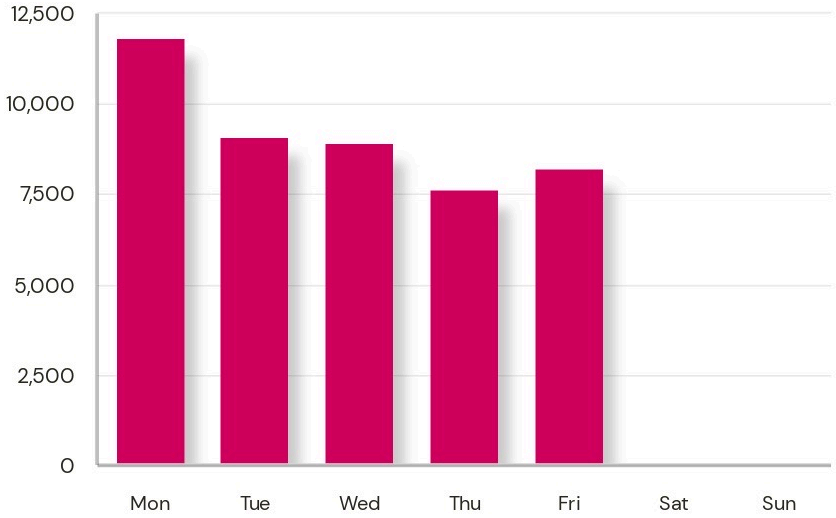
- Feature engineering and selection
- Trained Decision Trees, Random Forest, XGBoost and Logistic Regression

## Evaluation

- Analyse error with accuracy and weighted F1
- Decided for the best performing model

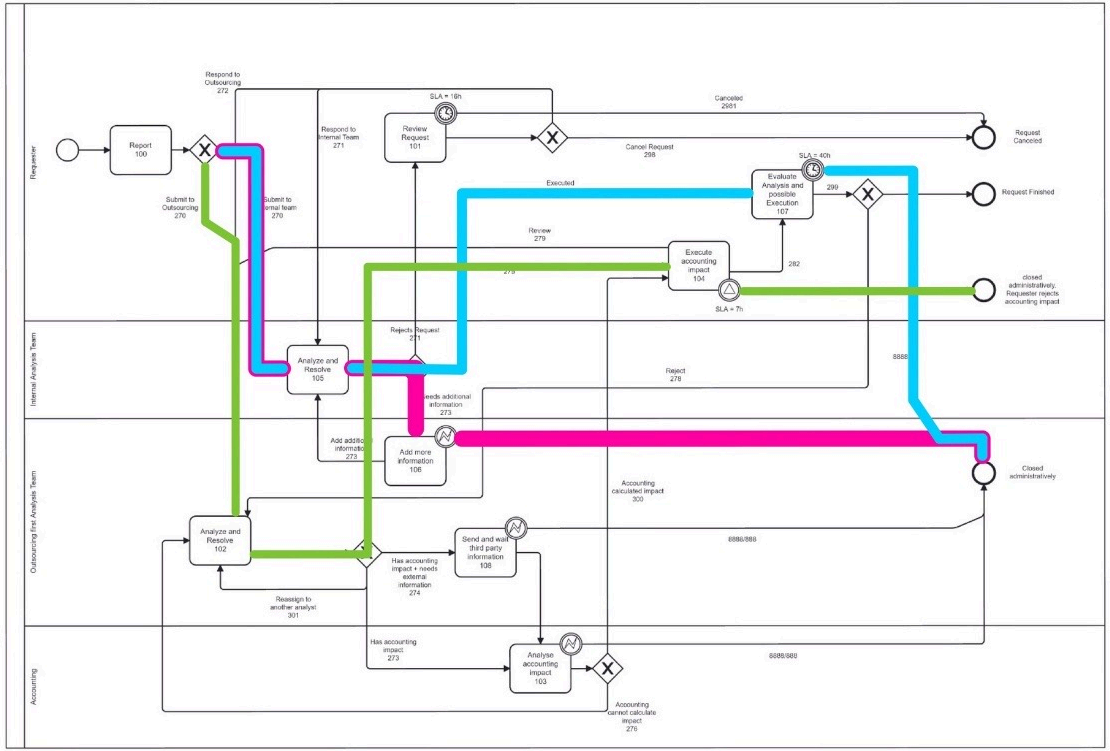
# Process Flow Analysis

## Task Arrival by Day of the Week

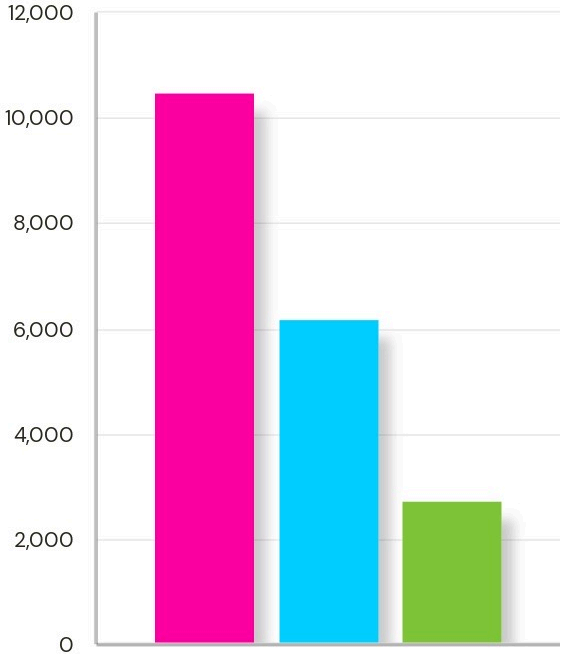



## Early and Delayed Executions

# Most Common Paths

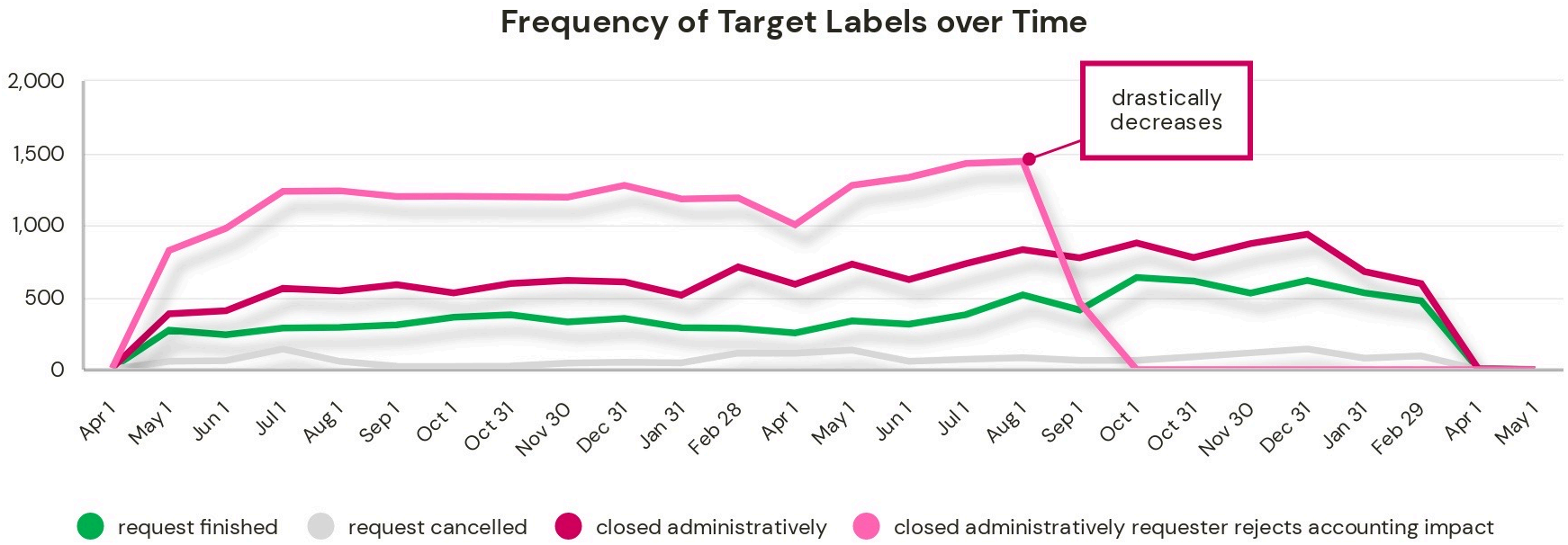



## Amount of Requests



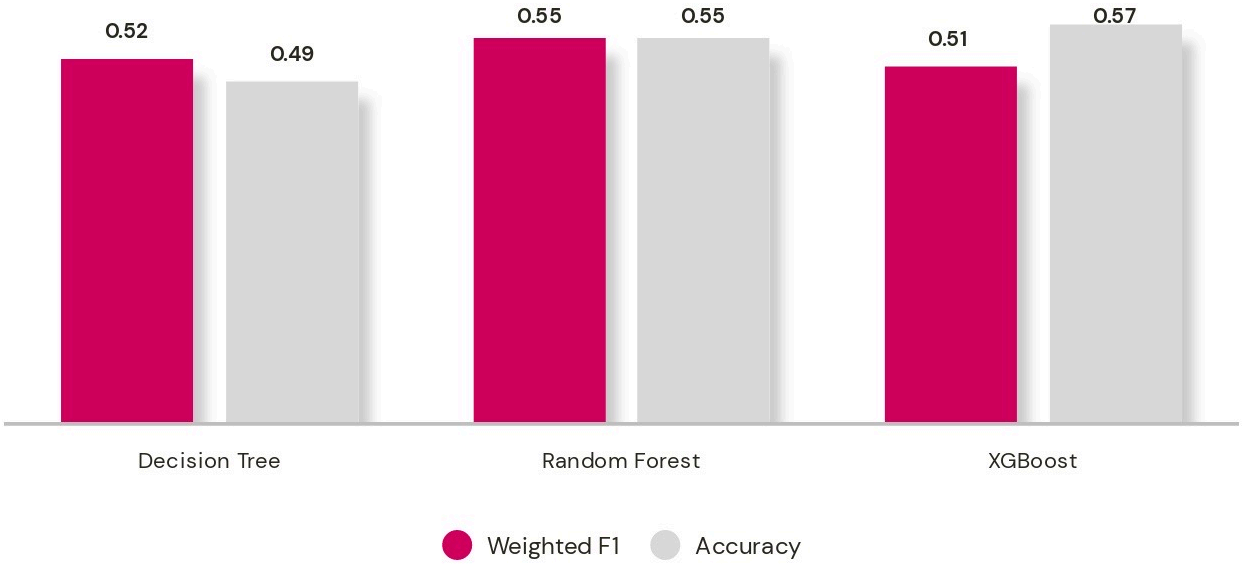

Most common paths

# Process Outcome Analysis



Prediction Model

# Model Performance Metrics




**3.6 mil. €**

can be saved through utilising

**Random Forest & XGBoost**

as prediction models

Retrospective

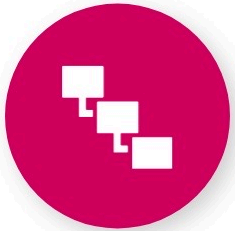
# Limitations of Models

- ✔ **Specialised Models**
- ✔ **Fine-tuned Models**
- ✔ **Automated Model Selection**

- ✖ **Client Type**
  is not regarded, as data is confidential
- ✖ **Contextual features**
  should be built to enhance the accuracy
- ✖ **Sequence of activities**
  is not used as a feature in current models
- ✖ **Sophisticated time features**
  like holiday season or contextual time frames

Recommendations

# Streamlining Process Efficiency



### Create Ideal Process

Identify in which steps the process deviates

### Process Analytics

Conduct process analysis to identify bottlenecks and unwanted idle times

### Speed-up process

Switch from analysing requests to only validating the outcome predictions

### Process Status

Share the likelihood of the outcome with customer to enhance satisfaction

Next Steps

# Project Timeline

### Improve Model

Use confidential data and fine tune model

7,000 €

### Environment Set-up

Ensure necessary development, test and production infrastructure

12,500 €

### Integration

integrate and evaluate the model's performance metrics

36,200 €

### Pilot Phase

Adapt model to new data and collect feedback from stakeholders

66,000 €

### Rollout

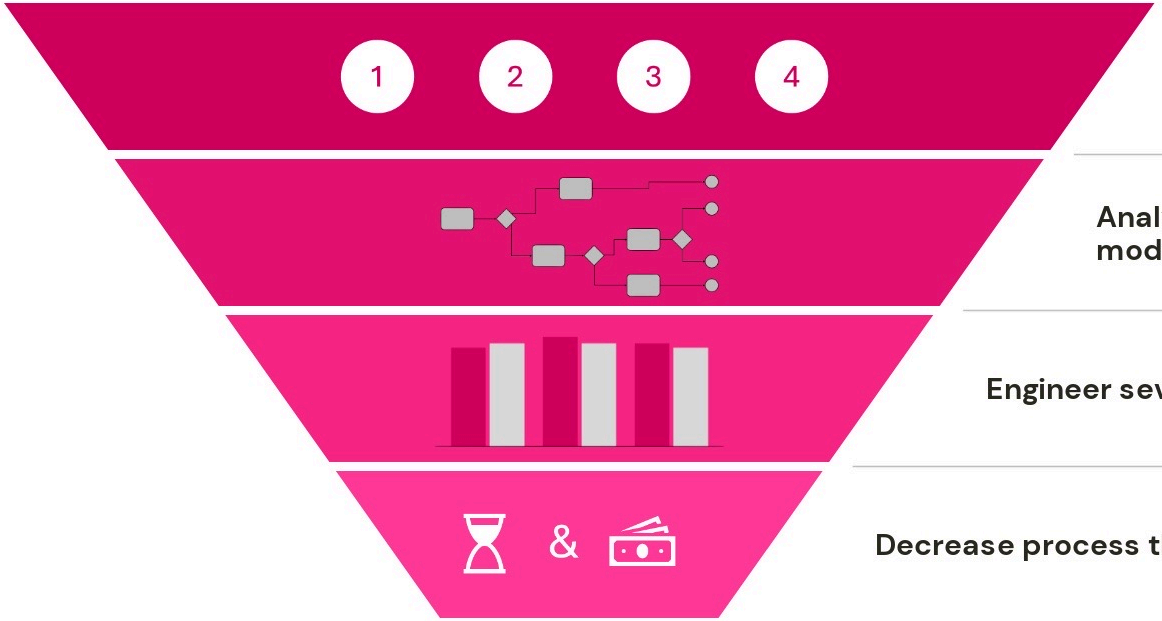
Gradually increase model predictions to short cut the process

121,000 €

The model can be implemented for **242,000€** over the next **6 months** and save up to **3.6 mil. €**

Retrospective

# Initial Goals and Implementation




1. Make process outcome predictions
2. Analyse process and conceptualised models
3. Engineer several outcome prediction models
4. Decrease process through-put time and save money

# Our Team

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