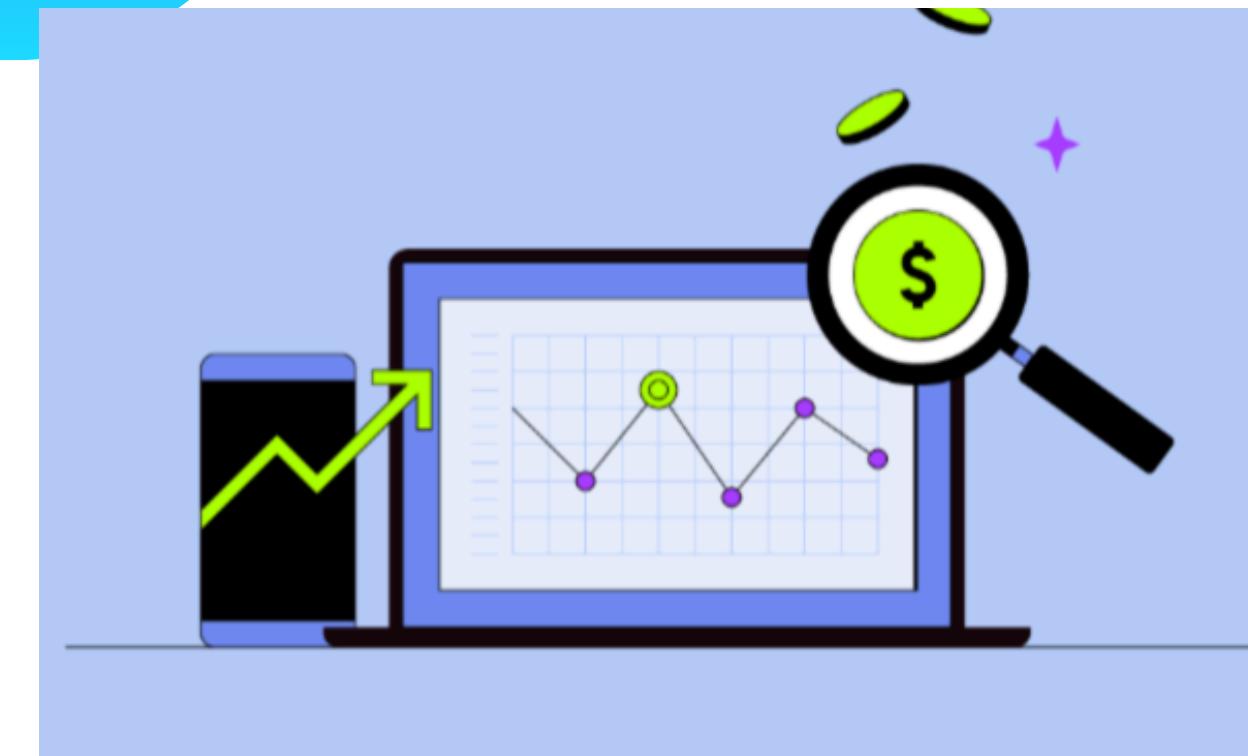
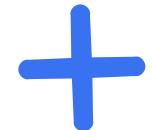


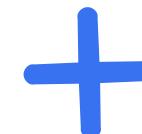


# Sales Prediction & Optimization In Banking

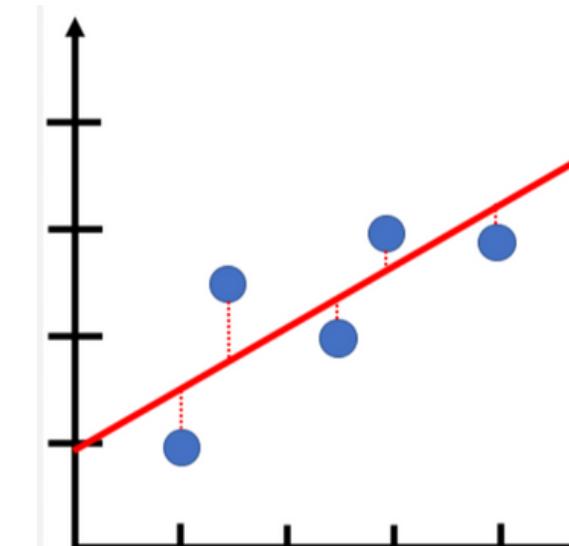
*Sales performance  
Improvement Bootcamp*



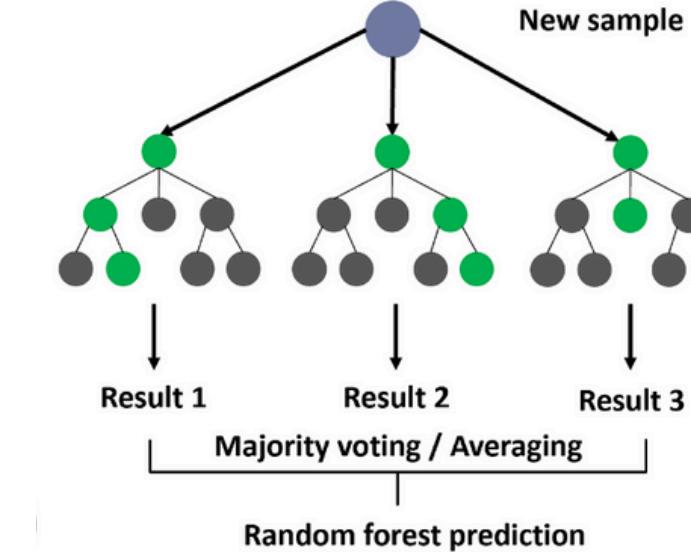
# Algorithms Used



The project uses Linear Regression and Random Forest algorithms. Linear Regression finds relationships between variables, making it ideal for predicting continuous outcomes like sales figures. Random Forest is a robust, ensemble learning technique that builds multiple decision trees, enhancing accuracy and handling complex patterns in data. Together, these algorithms help in understanding trends and making reliable sales predictions.



Linear Regression



Random Forest





# Objective<sup>+</sup>

**To Predict Future Sales Trends:** Enables to build predictive models for accurate sales forecasting, providing insights into future revenue trends.

**Identify Key Sales Drivers:** Enables to uncover the most influential factors affecting sales performance, enhancing their understanding of critical success drivers.

**Optimize Sales Strategies:** Helps to design data-driven sales strategies aimed at improving performance and meeting revenue targets, ensuring sustainable business growth in banking sales departments.



# What is Sales Prediction & optimization?

Sales prediction and optimization in banking is about using data to anticipate how much revenue a bank is likely to generate from its products and services over time. This involves analyzing **historical sales data, customer behaviors and market trends** to forecast future sales. By predicting what might happen next, banks can plan more effectively and allocate resources in a way that maximizes their impact on revenue.

Optimization takes these predictions further by finding the best ways to **achieve higher sales** and **improve business performance**. This might mean identifying the right customer segments, adjusting product pricing, or focusing on high-performing sales channels. Optimization helps banks to use their resources efficiently and target efforts where they are most likely to bring in positive results.



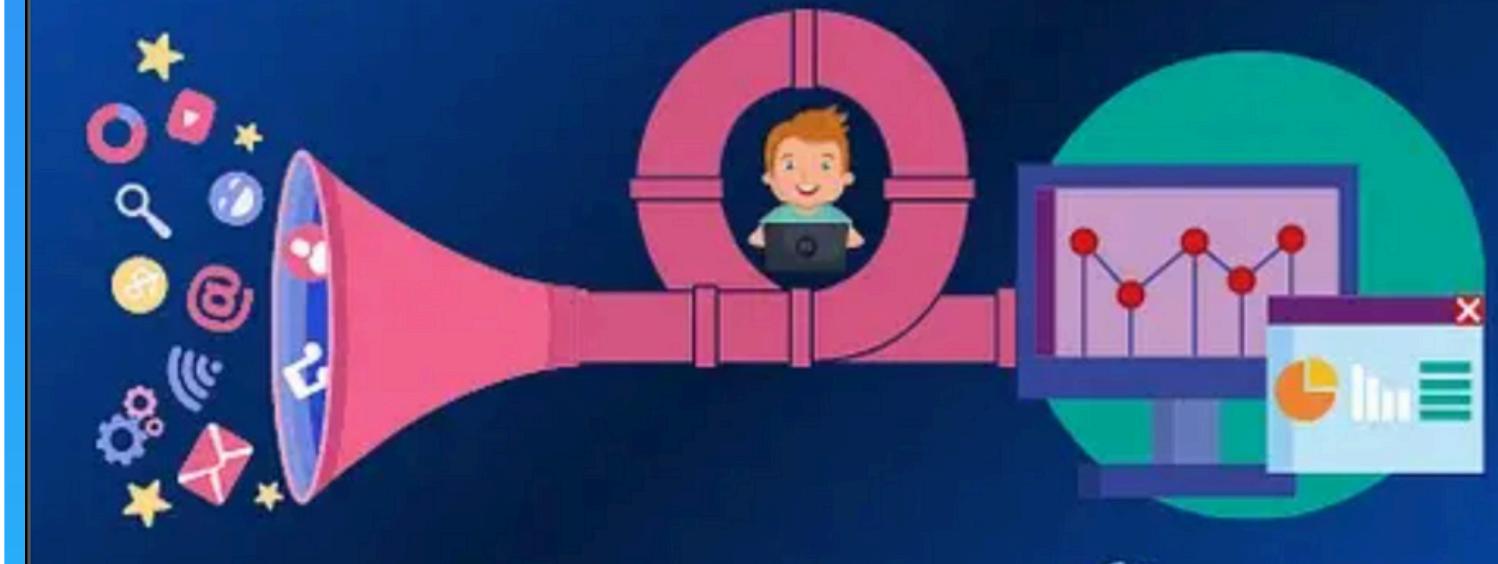


## Sales Prediction & Optimization Flow

1. **Data Collection:** The data has been gathered from kaggle. We load the dataset. The data used in this analysis is taken from Kaggle dataset "E-Commerce Data - Actual transactions of UK retailer".

2. **Data Preprocessing:** The data is Cleaned and standardized to handle missing values and scale features. Preprocessing ensures consistent and reliable inputs for the algorithms.

### DATA PREPROCESSING



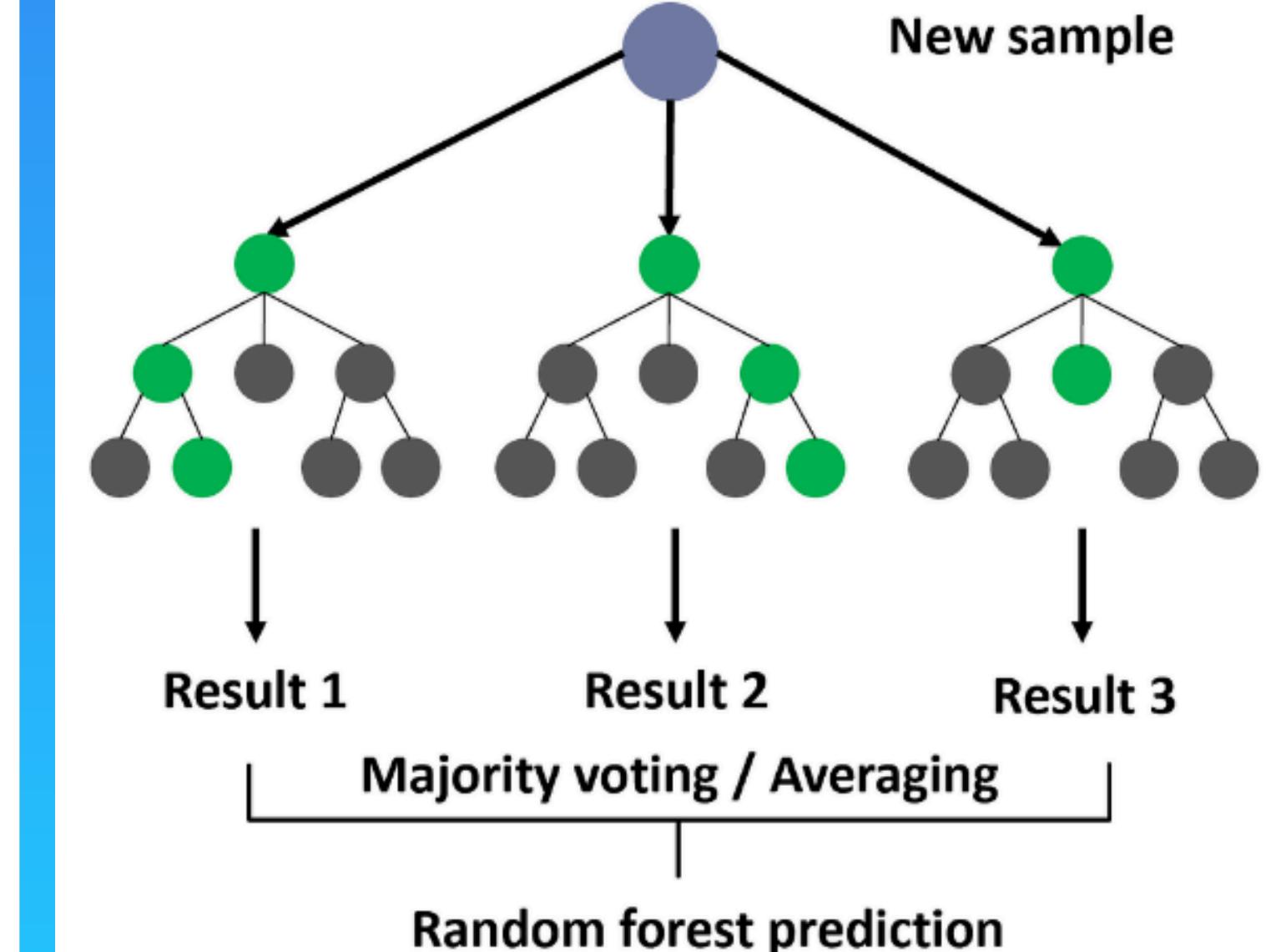
**Data Collection and  
Data Preprocessing  
in Python**



## Sales Prediction & Optimization Flow

**3. Algorithm Selection:** Linear Regression finds relationships between variables, making it ideal for predicting continuous outcomes like sales figures. Random Forest is a robust, ensemble learning technique that builds multiple decision trees, enhancing accuracy and handling complex patterns in data. Together, these algorithms help in understanding trends and making reliable sales predictions.

**4. Identifying Key Sales Drivers:** Use model outputs to pinpoint the most influential factors affecting sales performance, helping participants understand which variables contribute most to successful sales.

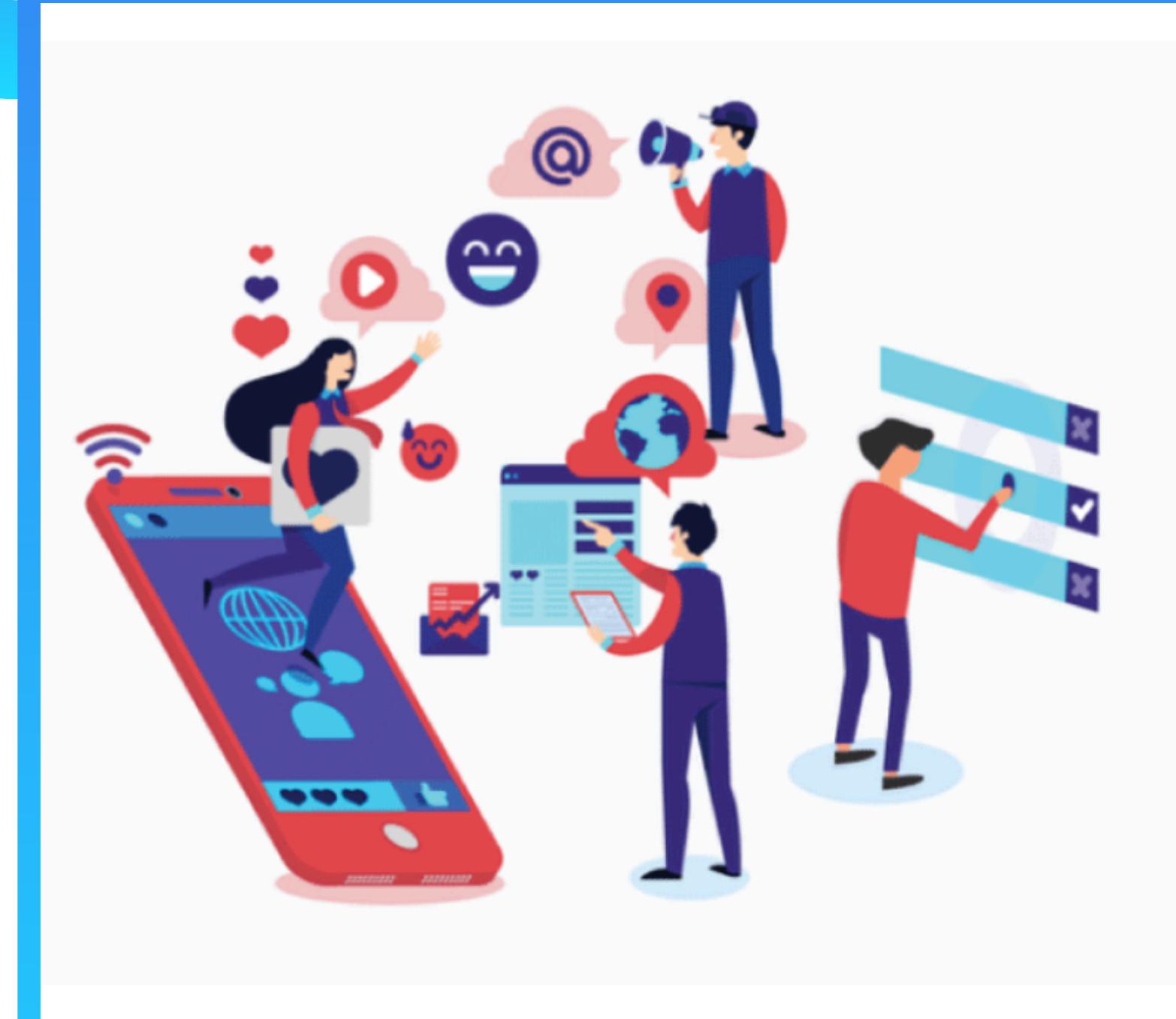


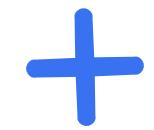


## Sales Prediction & Optimization Flow

**5. Optimizing Sales Strategies:** Show how to leverage model insights to develop and adjust sales strategies, focusing on targeted marketing and resource allocation to improve overall performance.

**6. Interpreting and Presenting Results:** Conclude with techniques for interpreting model outcomes and translating them into actionable insights that can guide decision-making in real-world banking scenarios.



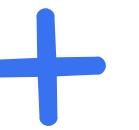


## Bussiness outcomes

1. **Enhanced Sales Forecasting Accuracy:** By using predictive models, the project improves the accuracy of sales forecasts, enabling banking teams to plan more effectively and set realistic targets.

2. **Optimized Resource Allocation:** Insights from the models help banks allocate resources, such as time, budget, and personnel, to the most promising products and customer segments, increasing efficiency and returns.

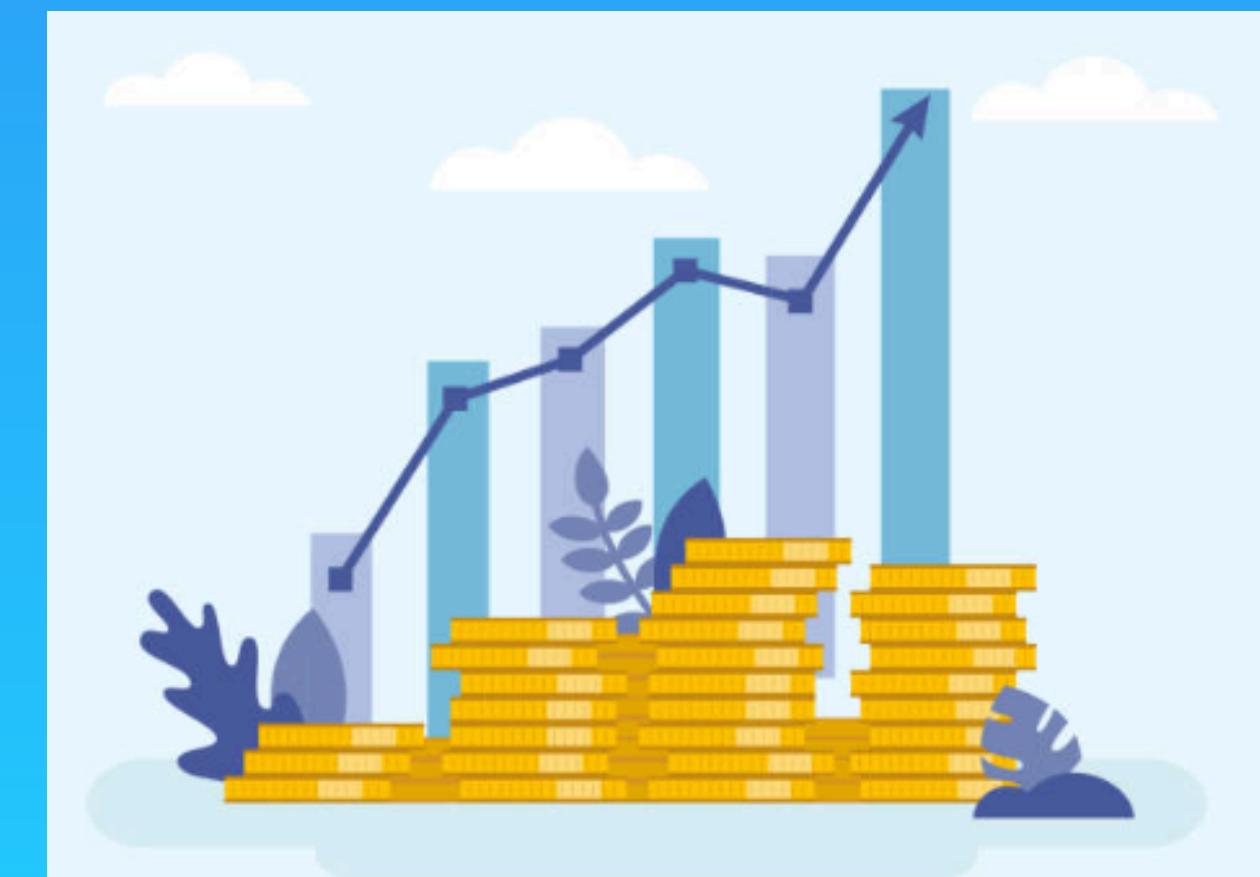


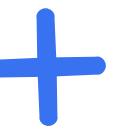


## Bussiness outcomes

**3. Increased Revenue Growth:** The project identifies high-impact sales drivers, allowing banks to focus on strategies that boost revenue, ultimately driving growth in a competitive market.

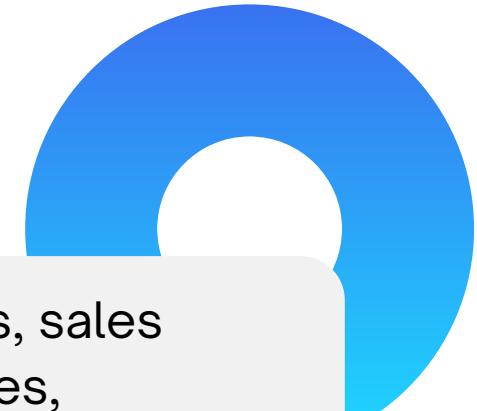
**4. Improved Customer Targeting:** Predictive insights allow for more precise targeting of potential customers, resulting in better engagement and higher acquisition rates for banking products and services.





## Bussiness outcomes

**5. Data-Driven Decision-Making:** By interpreting model outputs, sales teams gain data-driven insights that guide their strategic choices, reducing guesswork and improving overall business outcomes.



**6. Enhanced Competitive Advantage:** Leveraging predictive analytics enables banks to stay ahead in the market, offering a more personalized and effective sales approach that differentiates them from competitors.

