

# AI Use Cases



Smartera 3S  
*Delivering the future now*

## Empowering Banks with Scalable, Ready-to-Deploy AI Solutions

We help financial institutions unlock the full potential of AI with pre-built, production-ready machine learning and generative AI use cases designed specifically for the banking sector. By leveraging our extensive library of industry-proven models and the Smartera 3S NextGen data platform, banks can accelerate their AI journey, reduce time-to-market, and cut implementation costs—without compromising on performance or regulatory alignment.

### This approach delivers tangible value across four strategic pillars:

#### Accelerate AI Adoption

Leverage ready-made models for rapid market penetration.

#### Cost-Efficient

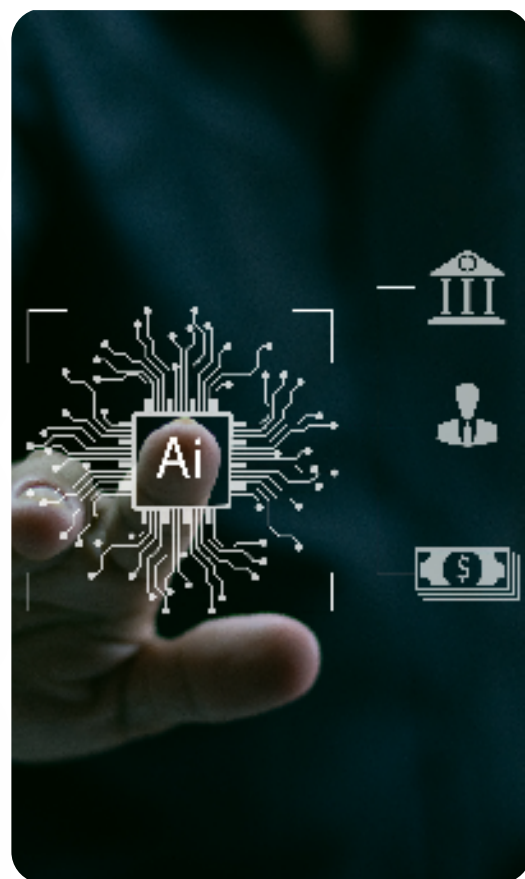
Reduce investment costs through industry-based ready-made models.

#### Comprehensive NextGen data platform

Optimize Smartera 3S next generation EDW platform with AI pre-built products.

#### Extensive Use-Case Library

A comprehensive repository of AI-driven solutions tailored for the financial services industry.



## Machine Learning banking use cases

Machine Learning (ML) in banking is revolutionizing the financial industry by enabling data-driven decision-making. ML models leverage structured and unstructured data to generate predictive insights, automate processes, and personalize customer experiences. The key technologies involved include:

## Accelerate AI Adoption

Leverage ready-made models for rapid market penetration.

## Model-Driven Approaches

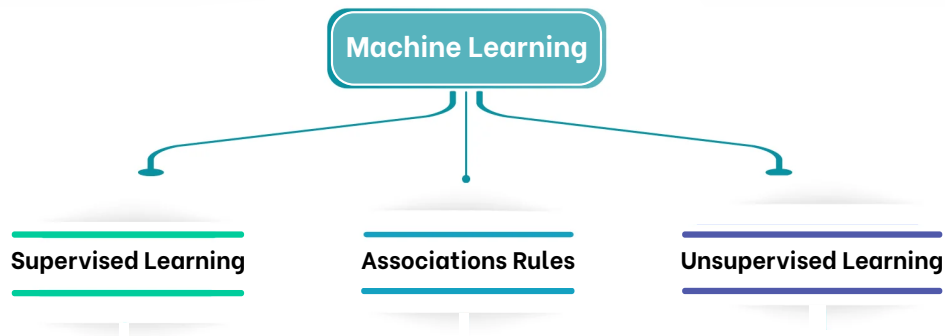
XGBoost, LightGBM, Random Forest, KMeans, and XGBRegressor.

## Techniques Used

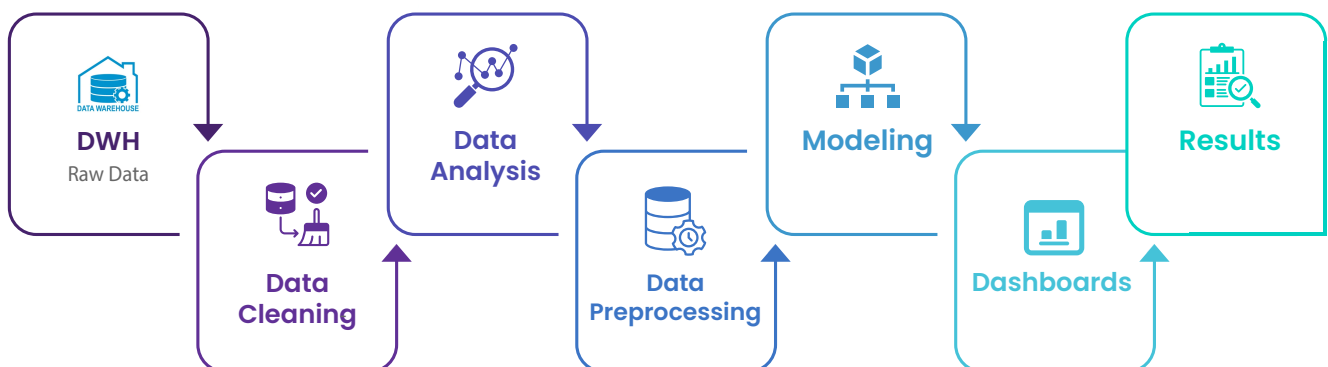
Classification, Regression, Clustering and Association Rules.

## Core Components

Feature engineering, model evaluation, hyper-parameter tuning & dimensionality reduction.



*The machine learning lifecycle is a structured, step-by-step process that transforms raw data into actionable insights through:*



## Raw Data Collection

Extract customer, transaction, and financial data from the Data Warehouse (DWH) for analysis.

## Data Cleaning

Remove inconsistencies, handle missing values, and eliminate outliers to ensure data quality.

## Data Analysis

Explore relationships and trends to identify the most impactful features and business patterns.

## Data Preprocessing

Transform & prepare data using encoding, scaling, feature engineering, & class imbalance handling.

## Modeling

Train machine learning models like XGBoost, or KMeans for predictions or segment customers.

## Results & Dashboards

Train machine learning models like XGBoost, or KMeans for predictions or segment customers.

# Some of ready made ML Banking use cases:



## Credit Card Churn

Predicting credit card churn using Random Forest and XGBoost helps banks identify at-risk customers by analyzing transaction frequency, spending patterns, and engagement history. Feature engineering includes credit utilization, recency of use, and interaction frequency. Class imbalance handling (e.g., SMOTE) improves model accuracy, evaluated using AUC-ROC and F1-score. Insights drive targeted offers, loyalty rewards, and proactive engagement to reduce churn and enhance customer retention.



## Term Deposit Churn

Predicting term deposit churn using XGBoost and Random Forest helps banks identify customers likely to withdraw or not renew their deposits. Models analyze tenure, deposit size, interest rate sensitivity, & withdrawal patterns. Class imbalance is addressed using SMOTE or cost-sensitive learning, & models are evaluated with AUC-ROC & F1-score. Insights drive personalized retention strategies, competitive rates, & tailored financial advisory services, enhancing deposit portfolio stability.



## Customer Salary Estimation

Customer salary estimation using XGBRegressor predicts income based on demographics, spending patterns, and credit history, improving financial profiling and risk assessment. Key features include age, occupation, monthly deposits, and loan repayment history. RMSE ensures accuracy, enabling banks to personalize financial products, adjust credit limits, and refine risk-based pricing.



## Customer Wealth Segmentation

Customer wealth segmentation using KMeans clustering helps banks classify clients based on net worth, income, & financial behavior for tailored financial services. Key features include account balances, investments, credit utilization, & spending patterns. Feature engineering involves scaling, categorical encoding, & PCA for dimensionality reduction, while the elbow method & silhouette score determine optimal clusters. This segmentation enables banks to offer exclusive banking services, personalized wealth management, & premium financial products, enhancing customer retention & revenue.



## Spending Habits Segmentation

Customer spending habits segmentation using KMeans clustering groups clients based on transaction patterns, purchase frequency, and spending categories. Key features include spending volume, payment methods, and seasonal trends, with scaling and PCA improving cluster formation. The elbow method determines the optimal clusters. Insights enable personalized financial products, targeted promotions, and customized credit card rewards, enhancing customer engagement and loyalty.



## Customer Loyalty Segmentation

Customer loyalty segmentation using KMeans clustering classifies customers based on engagement, tenure, and product usage to enhance retention and rewards. Key features include account tenure, transaction frequency, product holdings, and support interactions. Feature engineering involves scaling, encoding, and PCA for optimization, with elbow method and silhouette score determining clusters. This enables personalized rewards, loyalty programs, and exclusive benefits, strengthening customer relationships and reducing churn.



## Corporate Profitability of Default

Predicting corporate Probability of Default (PD) using XGBoost and LightGBM helps banks assess credit risk by analyzing financial metrics, macroeconomic indicators, & repayment history. Feature engineering includes ratio calculations, while class imbalance is handled with SMOTE techniques. Models are evaluated using AUC-ROC & accuracy, enabling early warning systems, and regulatory compliance for proactive credit risk management.



## Customer Demographics Segmentation

Customer demographics segmentation using KMeans clustering helps banks tailor services by grouping customers based on age, income, lifestyle, and financial behavior. Key features include account balances, transaction frequency, and credit utilization, with feature engineering involving scaling, encoding, and PCA. The elbow method or silhouette score determines the optimal clusters. Insights drive personalized marketing, product recommendations, and targeted financial services, enhancing customer satisfaction.



## Balance Churn

Predicting balance churn using XGBoost and LightGBM helps banks identify customers likely to withdraw or reduce balances, enabling proactive retention. Key features include balance trends, transaction frequency, credit utilization, and engagement metrics, with feature engineering focusing on lag features, ratio calculations, and categorical encoding. SMOTE or cost-sensitive learning handles class imbalance, while AUC-ROC and precision-recall measure performance. Insights drive personalized incentives, financial planning, and engagement strategies to retain valuable customers.



## Customer Income Level Prediction

Customer income level prediction using XGBoost helps banks estimate financial status based on demographics, transactions, and credit behavior, enabling personalized services. Key features include age, occupation, education, spending habits, and savings patterns, with feature engineering focusing on log transformations, ratio features, and categorical encoding. Hyperparameter tuning optimizes performance, evaluated using AUC-ROC, accuracy, and F1-score. These insights support customized financial products, credit limit adjustments, and pricing strategies.



## Retail Cross/Up-Selling

Retail cross-selling in banking using association rules analyzes customer transactions to recommend complementary financial products. Patterns like credit card holders purchasing travel insurance are identified using support, confidence, and lift metrics. Feature engineering includes demographics, transaction history, and product usage. These insights drive personalized marketing, bundled offers, and automated recommendations, boosting revenue and customer engagement.



## Corporate Cross/Up Selling

Corporate cross-selling using association rules identifies patterns in business banking behavior to recommend complementary financial products. Key features include company size, industry, transaction volume, and credit utilization. Frequent itemset mining uncovers relationships, such as firms with corporate loans adopting treasury services. Support, confidence, and lift metrics ensure relevant recommendations. These insights enable tailored financial bundles, automated recommendations, and targeted advisory services, strengthening corporate relationships and driving revenue growth.



### Customer Channel Adoption Segmentation

Customer channel adoption segmentation using KMeans clustering classifies clients based on their preferred banking channels—online, mobile, or in-branch. Key features include transaction frequency, digital engagement, and in-branch visits, with scaling and PCA improving cluster formation. The elbow method determines the optimal clusters. Insights help banks enhance digital services, optimize branch experiences, and personalize customer interactions.



### Complete Customer Loss

Complete customer loss prediction using XGBoost identifies clients at risk of fully leaving the bank by analyzing transaction frequency, product usage, balance trends, and digital engagement. Feature engineering and hyperparameter tuning enhance model accuracy, evaluated using AUC-ROC and F1-score. Insights enable personalized retention offers, loyalty incentives, and targeted engagement strategies to prevent customer attrition.



### Point of Sale Churn

POS churn prediction using XGBoost identifies merchants at risk of discontinuing Point of Sale (POS) services by analyzing transaction volume, chargeback frequency, and terminal usage. Feature engineering and hyperparameter tuning enhance model accuracy, evaluated with AUC-ROC and F1-score. Insights help banks implement targeted retention offers, service improvements, and merchant engagement strategies to reduce churn.



### Investment Plans Segmentation

Investment plans segmentation using KMeans clustering categorizes customers based on portfolio size, risk tolerance, and investment behavior. Feature engineering and clustering techniques improve segmentation accuracy. Insights help banks offer personalized investment products, targeted advisory services, and customized wealth management solutions to enhance customer engagement.



### High Risk Customer Prediction

High-risk customer prediction using XGBoost analyzes transaction patterns, credit utilization, and financial stability to identify potential defaulters. Key features include income, account balances, debt-to-income ratio, and missed payments, with feature engineering and hyperparameter tuning optimizing model performance. Insights help banks implement proactive risk management, credit monitoring, and regulatory compliance strategies.



### Corporate Wealth Segmentation

Corporate wealth segmentation using KMeans clustering categorizes businesses based on assets, revenue, and financial behavior. Key features include transaction volume, credit utilization, and investment activity, with scaling and PCA improving cluster formation. Insights enable banks to offer customized financial services, premium banking privileges, and specialized advisory solutions for high-value corporate clients.



### Corporate High Risk Prediction

Corporate high-risk prediction using XGBoost identifies businesses prone to financial instability or default by analyzing revenue, debt ratios, cash flow, and credit history. Feature engineering and hyperparameter tuning enhance model accuracy, evaluated with AUC-ROC and precision-recall scores. Insights help banks implement early risk interventions, stricter credit policies, and tailored financial solutions to mitigate losses.



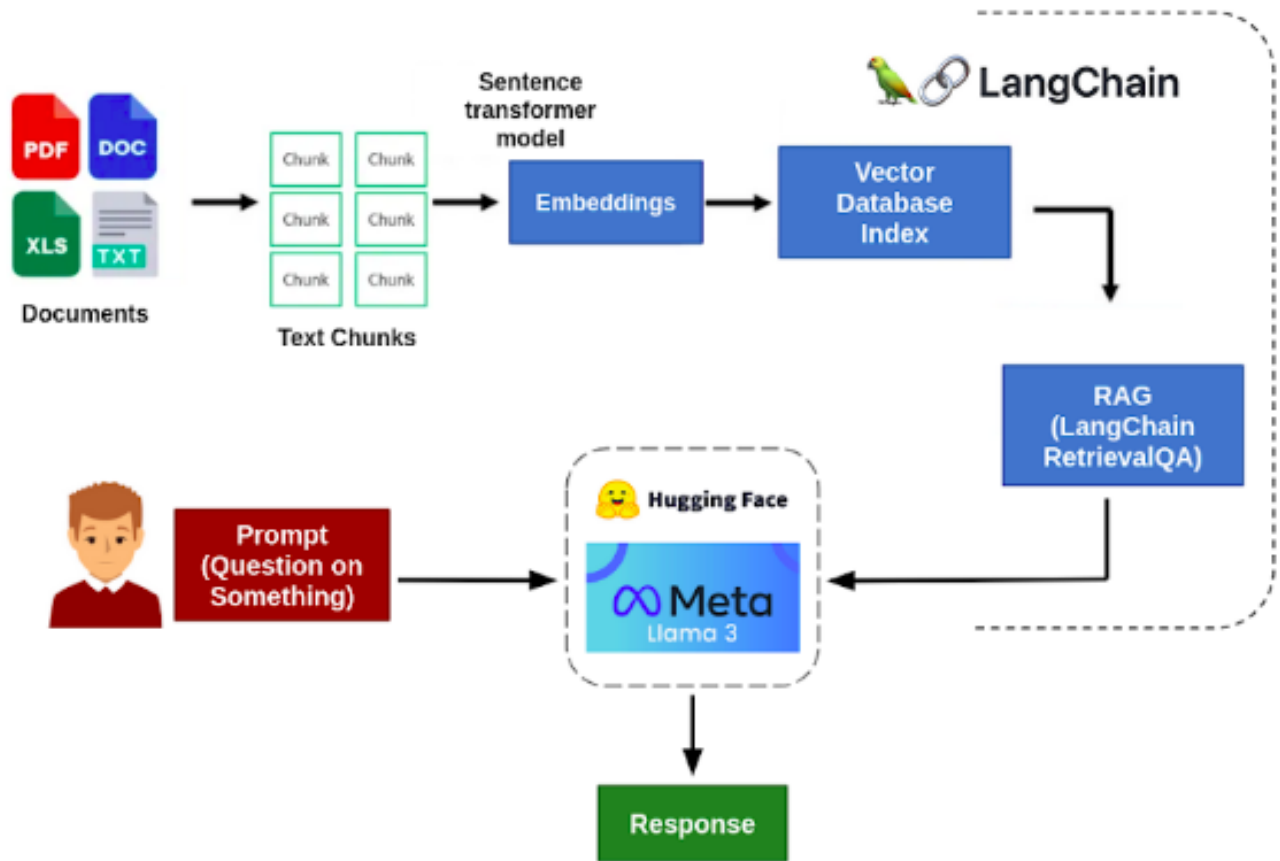
### Cost-to-Income Ratio (CIR) Optimization

Cost-to-Income Ratio (CIR) optimization aims to improve the bank's financial efficiency by maximizing revenue streams while controlling operational costs. Using advanced analytics and machine learning, several use cases contribute to this objective, including Net Interest Income optimization, Fee & Commission prediction and optimization, Trading & Investment advisory, Workforce & Operations optimization, and Procurement & Vendor cost reduction. These initiatives support data-driven decisions that enhance profitability and reduce the overall CIR. A key component is Fee & Commission Prediction and Optimization, which focuses on forecasting and improving commission revenue across banking services. Machine learning models analyze transaction volumes, customer behavior, and product usage to forecast fee income for the upcoming year across products such as cards, trade finance, remittances, and wealth management. The solution also benchmarks current tariffs against market rates and applies optimization models to recommend improved fee structures and pricing tiers that maximize revenue while minimizing customer attrition risk.



# Generative AI use cases

Modern machine learning advancements, particularly with Large Language Models (LLMs) which are the fruitful output of transformers improvements, have introduced a smart and time-efficient approach to document comprehension. By utilizing models like Llama 3 and Retrieval-Augmented Generation (RAG), we can vastly improve the accessibility and usability of dense, technical documentation. Llama 3, developed by Meta, excels at interpreting user queries without needing exact keywords, making it ideal for navigating dense technical manuals. RAG enhances this by retrieving the most relevant document sections and generating well-structured answers that combine multiple sources. It can respond to queries using data from maintenance logs, troubleshooting guides, and specifications—all in one coherent reply.



## Sample of our Ready made Gen AI use cases:

### HR Assistant:

Uses AI to generate structured job descriptions and automate candidate screening by evaluating resumes against job criteria. This streamlines recruitment, improves hiring consistency, and reduces HR workload by providing instant candidate assessments. Large language models (LLMs) extract key candidate qualifications for efficient resume matching.

### Policy Expert:

An AI assistant that helps employees navigate internal policies, regulatory guidelines, and compliance frameworks. It processes policy documents and offers instant, context-aware responses, ensuring regulatory adherence and reducing reliance on manual policy interpretation. Retrieval-augmented generation (RAG) models improve response accuracy by grounding answers in internal policy documents.

### Product Expert:

An AI-powered chatbot that provides real-time, accurate responses to customer inquiries about banking products such as loans, credit cards, and savings accounts. It utilizes natural language understanding (NLU) and integrates with a bank's knowledge base to ensure up-to-date information, improving customer engagement and reducing call center workload. Transformer-based models, such as GPT, enable it to generate contextual responses with high accuracy.



# Agentic AI

Agentic AI represents the next evolution in artificial intelligence, where AI agents move beyond simple responses and begin to autonomously plan, decide, and act based on their goals and the context of the data. These agents operate independently across tasks, analyze data from multiple sources, and continuously adapt to achieve desired outcomes.



## Financial Assistant

The Financial Assistant is an Agentic AI product that empowers internal bank users with smart, data-driven financial advisory. It connects seamlessly with the bank's Data Warehouse, processes unstructured documents, pulls data from live market feeds and public APIs, and automates financial analysis and communication — all through a dynamic, multi-agent system. At the core of the solution is an Agent Router that intelligently distributes tasks to specialized agents:

### Financial Agent

Interprets user queries, calculates metrics and retrieves insights from the banking DWH.

### Scraping Agent

Fetches external data from public APIs, and live market feeds to enrich responses with real-world.

### Parsing Agent

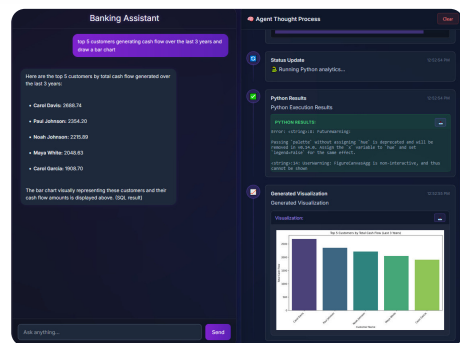
Processes uploaded documents like brochures or reports using OCR and NLP, then uses RAG to find and extract useful information.

### Python Agent

Executes advanced calculations, forecasting models, or custom analytics scripts based on financial formulas or ML models using Python.

### Communication Agent

Enables sending responses and reports via integrated channels like email and SMS, automating delivery to clients or relationship managers.



## Key Advantages



End-to-end pipeline from data ingestion to response generation



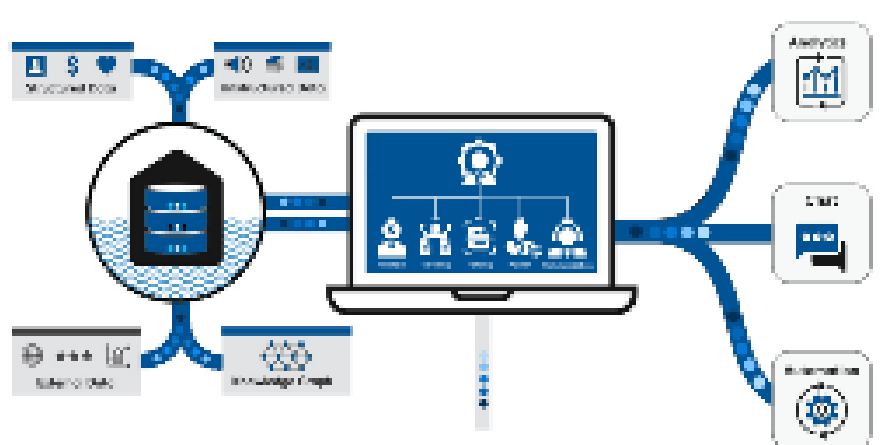
Built-in support for multimodal data (structured, unstructured, real-time)



Flexible orchestration for both RAG and agentic tasks



Secure and scalable design ready for enterprise use





# Business Query Storytelling

Business Query Storytelling is an AI assistant that enables non-technical bank users to query the Data Warehouse in natural language, set query context, drill down into results, and export data in multiple formats, while leveraging an embedded knowledge base that combines structured and unstructured information to deliver clear, insightful storytelling with data.

## Key Capabilities:

- Natural Language Queries: Ask questions in plain language, noSQL required. Context-Aware Exploration: Set query context and drill down into results.
- Flexible Exports: Download results in Excel, CSV, PDF, or dashboard view.
- Knowledge Base Integration: Combine structured DWH data with unstructured insights.
- Storytelling: Transform raw data into clear, narrative-driven insights.

## Benefits:

- Democratizes access to enterprise data.
- Speeds up decision-making with self-service analytics.
- Reduces reliance on IT/BI teams for routine queries.
- Delivers business insights in a storytelling format for better understanding.

### Top 5 Customers by Balance

Customer Name	Total Balance
Tina Williams	\$92,548.76
Noah Harris	\$85,279.53
Frank Anderson	\$69,051.85
Ivy Johnson	\$53,917.57
Grace Davis	\$60,140.34

### Product Distribution

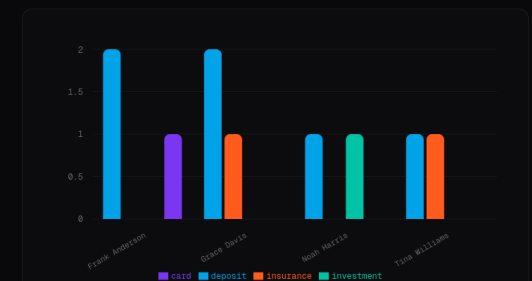
The distribution of bank products (Cards, Deposits, Insurance, Investments) for these customers is summarized below:

- Tina Williams: 1 Deposit, 1 Insurance product.
- Noah Harris: 1 Deposit, 1 Investment product.
- Frank Anderson: 1 Card, 2 Deposit products.
- Grace Davis: 2 Deposits, 1 Insurance product.
- Ivy Johnson: No specific product records found in `customer_products` (though they hold active account balances).

Note: Ivy Johnson appears in the top balances due to account holdings, but does not have entries in the product mapping table. All balances are shown in their primary currency.

- Tina Williams: 1 Deposit, 1 Insurance product.
- Noah Harris: 1 Deposit, 1 Investment product.
- Frank Anderson: 1 Card, 2 Deposit products.
- Grace Davis: 2 Deposits, 1 Insurance product.
- Ivy Johnson: No specific product records found in `customer_products` (though they hold active account balances).

Note: Ivy Johnson appears in the top balances due to account holdings, but does not have entries in the product mapping table. All balances are shown in their primary currency.



AI ASSISTANT

Chat

ADMIN TOOLS

SQL Agent

RAG Agent

Crawling Agent

Communications Agent

LLM Settings

AI Expert

what are the top 5 customers based on balances and their product distribution ?

Ran 2 SQL Queries 2 COMPLETE

1. 5 rows | SELECT c.customer\_id, c.name, SUM(a.balance) as total\_balance FROM customers c ...

```
SELECT
  c.customer_id,
  c.name,
  SUM(a.balance) as total_balance
FROM
  customers c
JOIN accounts a ON c.customer_id = a.customer_id
GROUP BY
  c.customer_id,
  c.name
ORDER BY
  total_balance DESC
LIMIT
  5;
```

Query Results

5 rows x 3 columns

customer_id	customer_name	total_balance
42	Tina Williams	92,548.76
44	Noah Harris	85,279.53

Click stop to cancel generation



# HR Assistant

The HR Assistant is an Agentic AI solution that streamlines recruitment processes. It automates tasks such as job description creation, resume screening, candidate management, interview scheduling, and recruitment analytics. By combining AI insights with structured workflows, it helps HR teams make faster hiring decisions and maintain clear visibility across the recruitment pipeline through an Agent Router that assigns tasks to specialized agents.

## Job Description Agent

Generates professional and structured job descriptions based on role requirements, skills, and organizational needs, ensuring consistency and clarity across all job postings.

## Resume Evaluation Agent

Analyzes and screens candidate resumes against job requirements using AI-powered parsing and scoring to identify the most suitable applicants.

## Recruitment Management Agent

Manages candidates across the recruitment pipeline while providing insights into hiring performance, helping HR teams track applications, organize profiles, and make data-driven hiring decisions.

## Interview Scheduling Agent

Coordinates interviewer availability and schedules interviews automatically, simplifying the interview planning process and reducing administrative workload.

## Key Advantages



### Recruitment automation

From job description creation to candidate evaluation and interview scheduling within a unified AI-powered platform.



### AI-powered resume screening

Automatically analyzes candidate profiles and ranks applicants based on job requirements and relevant skills.



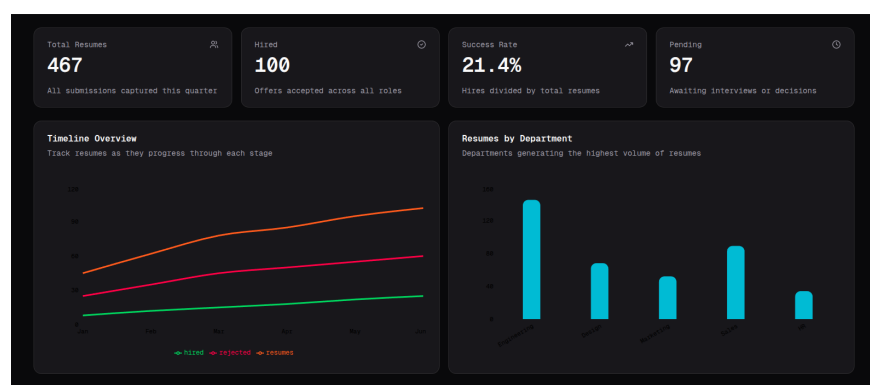
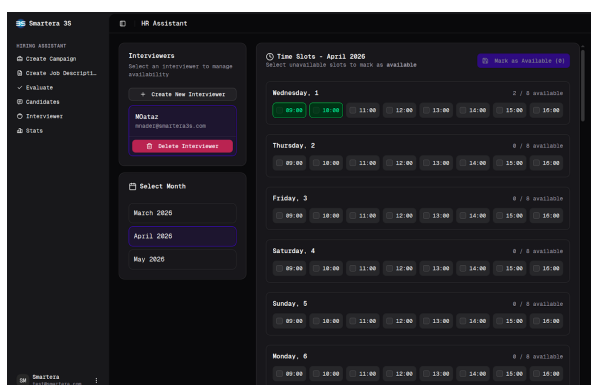
### Recruitment Pipeline & Insights

Keeps candidate progress organized and trackable while providing dashboards and statistics to evaluate hiring performance.



### Smart interview coordination

Simplifies scheduling by aligning interviewer availability and candidate timelines automatically.





# Balance Sheet Analyzer

The Balance Sheet Analyzer is an AI tool that converts unstructured financial documents (like PDFs of balance sheets and income statements) into structured, analyzable data. It extracts key financial information, calculates important ratios, and generates insights to help organizations evaluate financial performance and make better strategic decisions.

## Financial Statement Processing Agent

Extracts financial data from unstructured PDFs and consolidates multiple financial statements into a unified, structured dataset for automated analysis.

## Balance Sheet Analysis Agent

Processes and organizes balance sheet line items, allowing users to explore assets, liabilities, and equity with structured comparisons across reporting periods.

## Financial Ratio Agent

Calculates key financial ratios such as liquidity, profitability, and leverage ratios to support deeper financial evaluation and benchmarking.

## Business Insights Agent

Generates AI-powered financial insights from structured data to help identify trends, risks, and performance opportunities.

## Key Advantages



### Faster Automated Analysis

Converts complex financial files into structured data, reducing manual work and speeding up analysis for better strategic insights.



### Full financial statement coverage

Processes balance sheets, income statements, cash statements, and comprehensive income reports within a single platform.



### Auto financial ratio analysis

Calculates important financial indicators that help assess company liquidity, profitability, and financial stability.



### AI-driven business insights

Transforms financial data into meaningful interpretations and recommendations to support strategic decision-making.

LINE ITEM	2024 LATEST	2023	YOY CHANGE
<b>Contract assets</b>	18,658	16,189	↑15.2%
<b>Contract liabilities</b>	53,288	25,958	↑103.2%
<b>cash Cash and cash equivalents</b>	38,188	25,558	↑49.2%
<b>Current assets</b>	209,108	123,828	↑68.2%
<b>Current liabilities</b>	176,318	163,118	↑7.2%
<b>Deferred tax liabilities</b>	3,678	1,818	↑102.2%
<b>Deferred tax assets</b>	2,368	728,288	↓232.2%

LINE ITEM	2024 LATEST	2023	YOY CHANGE
<b>Acquisition of intangible assets</b>	-275,408	-61,378	↓348.2%
<b>Amortization of intangible assets</b>	89,738	53,958	↑66.2%
<b>Cash and cash equivalents at 1 January</b>	25,558	19,728	↑29.2%
<b>Cash and cash equivalents at 31 December</b>	38,188	25,558	↑49.2%
<b>Cash flows from operating activities</b>	15,588	11,688	↑33.2%
<b>Contract assets</b>	-1,878	-5,728	↓67.2%
<b>Contract liabilities</b>	28,228	8,118	↑248.2%

# AI-Powered Cost-to-Income Optimization

Strategic Framework for Banking Revenue & Expense Optimization

## Revolutionize Your Bank's Profitability with AI-Driven Analytics

Banks today face mounting pressure to improve their Cost-to-Income ratio while navigating volatile markets and evolving customer expectations. Our AI-powered platform deploys a suite of interconnected models that work across the full P&L — from revenue optimization to cost reduction — enabling institutions to make data-driven decisions across lending, fee income, treasury, staffing, procurement, and technology spend.

### The Framework 8 specialized AI models optimizing the full P&L

#### REVENUE OPTIMIZATION

##### M1 Net Interest Income Optimizer

Loan pricing & deposit cost modeling

##### M2 Fee & Commission Predictor & Optimizer

Forecast & grow non-interest income

##### M3 Trading & Investment Advisor

Treasury & portfolio intelligence

##### M4 Cross-Sell & Upsell Engine

Customer wallet share deepening

#### COST OPTIMIZATION & RISK

##### M5 Workforce & Operations Optimizer

Automation & resource planning

##### M6 Procurement & Vendor Cost Reducer

Vendor management & savings

##### M7 Technology & Infra Spend Optimizer

IT rationalization & ROI focus

##### M8 Risk-Adjusted Compliance Guard

Regulatory validation across all models

## Case Study: Commission Revenue Prediction & Optimization

Model M2

Commission income represents one of the most impactful non-interest revenue streams for any bank. Our AI-driven approach combines advanced forecasting with competitive intelligence and behavioral economics to identify the optimal pricing strategy — maximizing revenue while safeguarding customer relationships.

### Methodology

- 1 Time-Series Forecasting**  
Historical transaction data predicts future commission revenues per product line, identifying patterns, trends, and seasonality.
- 2 Competitive Benchmarking**  
A tariff comparison matrix across peer banks determines the institution's percentile position, revealing pricing gaps.
- 3 Elasticity Modeling**  
Customer sensitivity to tariff changes is quantified using causal inference. Each tariff is categorized into risk tiers.
- 4 Constrained Optimization**  
A stepwise feedback-loop model proposes optimal tariff rates, balancing revenue maximization with elasticity guardrails.

### Key Capabilities & Value Drivers

- Revenue Stream Identification**  
Forecasts fee income across product lines — cards, trade finance, remittances, wealth management — using transaction trends to surface untapped potential.
- Intelligent Pricing Decisions**  
Underpriced services identified by market benchmarking. The elasticity framework ensures every adjustment stays within safe bounds.
- Risk-Tiered Implementation**  
Tariff changes categorized from low to very-high risk. Low-risk items deploy immediately; higher-risk changes follow phased rollout.
- Multi-Bank Competitive Intelligence**  
Peer benchmarking panel provides real-time positioning, ensuring pricing stays competitive without leaving revenue on the table.

## Why It Matters

### 01 Accurate Performance Measurement

Assess profitability of individual products and service lines with precision for informed decisions.

### 02 Advanced Methodologies & Reporting

Sophisticated AI techniques paired with intuitive reporting that makes results easy to act upon.

### 03 Proactive Risk Management

Manage attrition risk, elasticity exposure, and competitive positioning through built-in guardrails.

### 04 Consistency & Adaptability

Consistent evaluation framework that adapts to your institution's unique market conditions.

## Implementation Roadmap

### PHASE 1 Foundation

Data infrastructure, pipeline setup, feature store. Compliance Guard (M8) deployed first.

### PHASE 2 Revenue Models

NII Optimizer (M1) & Fee Predictor (M2) live. Cross-Sell (M4) pilot begins.

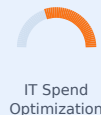
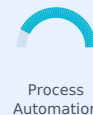
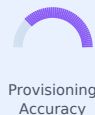
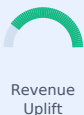
### PHASE 3 Cost Models

Workforce (M5), Procurement (M6), Technology (M7) optimizers integrated with budgeting.

### PHASE 4 Full Platform

All models in production. Trading Advisor (M3) live. Unified dashboard active.

### PROJECTED IMPACT



# AI-Powered Cost-to-Income Optimization

Strategic Framework for Banking Revenue & Expense Optimization  
Revolutionize Your Bank's Profitability with AI-Driven Analytics

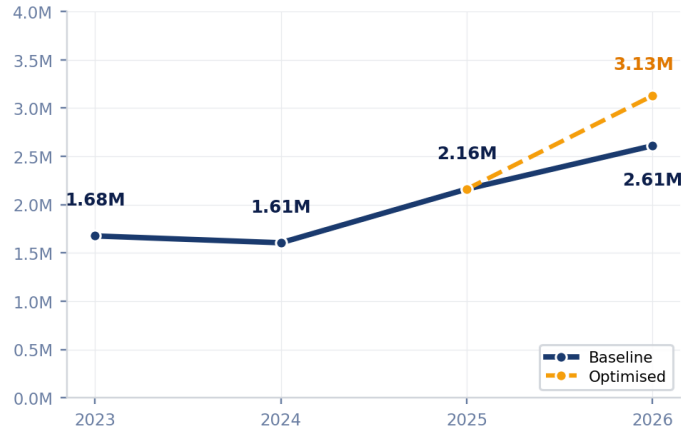
Our AI-powered platform deploys interconnected models across the full P&L — from revenue optimization to cost reduction. The Commission Revenue Predictor & Optimizer (Model M2) demonstrates the power of this approach: combining time-series forecasting, competitive benchmarking, and elasticity-constrained optimization to maximize non-interest income.

## Case Study: Commission Revenue Prediction & Optimization

Model M2

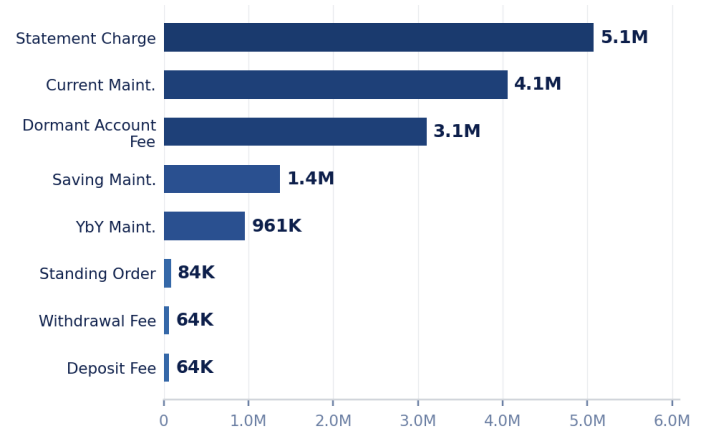
### Commission Revenue Trend (USD)

Historical & Forecast | 2023-2026



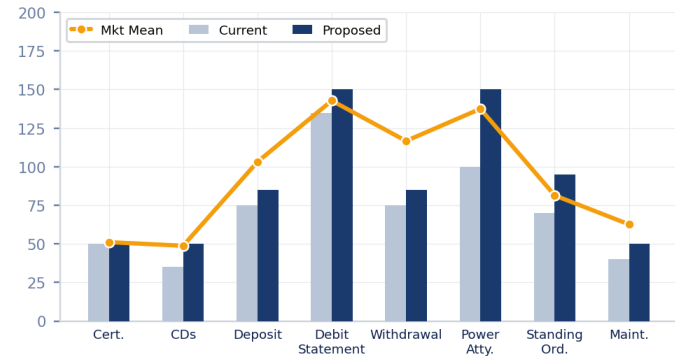
### Revenue Uplift — Top Contributors (EGP)

Waterfall | Sorted by impact



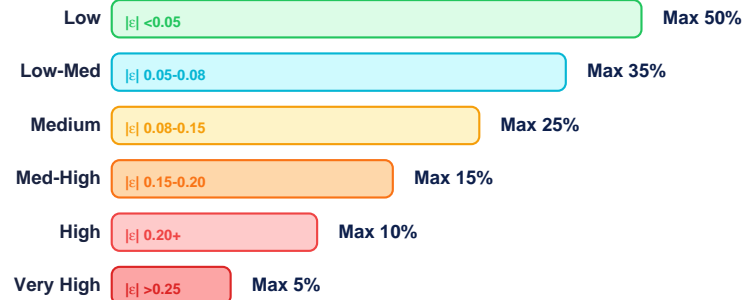
### Client Bank vs Market — Key Tariffs (EGP)

8-bank competitive panel | Existing customers



### Elasticity Risk Framework

Tariff sensitivity tiers | Max safe increase per tier



Avg portfolio elasticity: -0.156 (inelastic) = favorable for pricing optimization

## Strategic Insights

### Biggest Opportunity

Statement Charge increase drives the largest single uplift. ~1/3 of total gains. Conservative change applied vs. theoretical optimum.

### Elasticity Guardrails

Opening Account Fees frozen at current rates due to very high-risk elasticity. Any increase would destroy more volume than revenue.

### Low-Hanging Fruit

Dormant Account Fee and Power Attorney have low-risk elasticity — can be implemented immediately with minimal churn impact.

## Implementation Roadmap

### PHASE 1 Foundation

Data infrastructure, pipeline setup.  
Compliance Guard (M8) deployed.

### PHASE 2 Revenue Models

NII Optimizer (M1) & Fee Predictor (M2) live. Cross-Sell pilot.

### PHASE 3 Cost Models

Workforce (M5), Procurement (M6),  
Technology (M7) integrated.

### PHASE 4 Full Platform

All models in production.  
Unified dashboard active.

## PROJECTED IMPACT

