

SECTION B · GROUP 16

Project Yield

BankMarketingCampaign Analysis

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BUSINESS CONTEXT

The Cost of Casting a Wide Net

The Challenge

Banks rely on telemarketing to drive term deposit registrations. Undifferentiated outreach inflates operational costs while yielding low conversion 4 a classic efficiency gap in retail banking campaigns.

Problem Statement

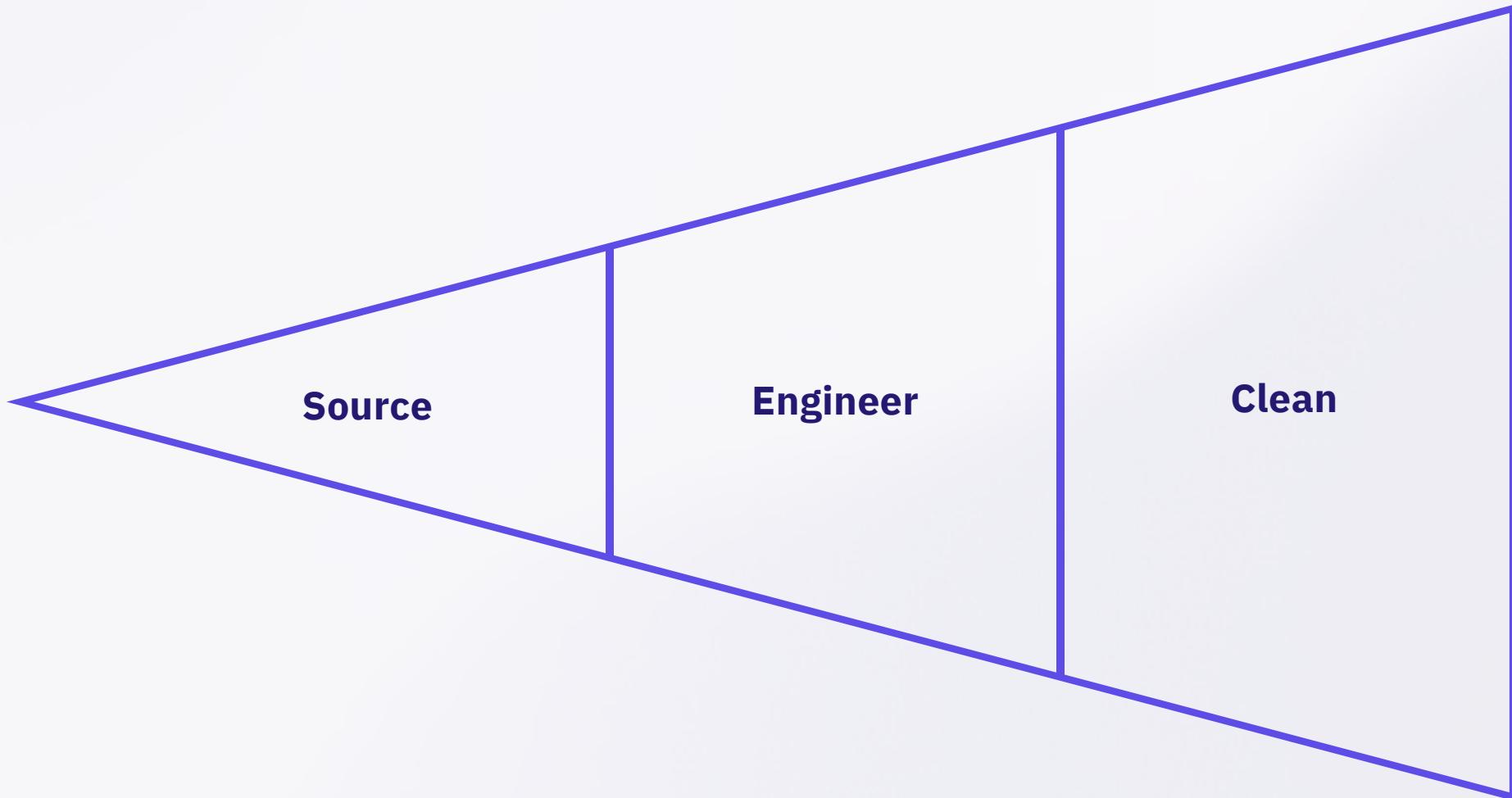
How can the bank optimise its marketing campaigns to increase term deposit conversions while simultaneously reducing outreach to disengaged prospects 4 improving both revenue and cost efficiency?

Project Objective

Identify the behavioural and demographic drivers of conversion to enable a precision, data-driven marketing strategy 4 shifting from mass outreach to targeted engagement.

From Raw Data to Reliable Insights

The Bank Marketing Dataset comprised 43,354 records across demographic, behavioural, and campaign-level attributes. A rigorous four-stage pipeline transformed raw inputs into analysis-ready features.



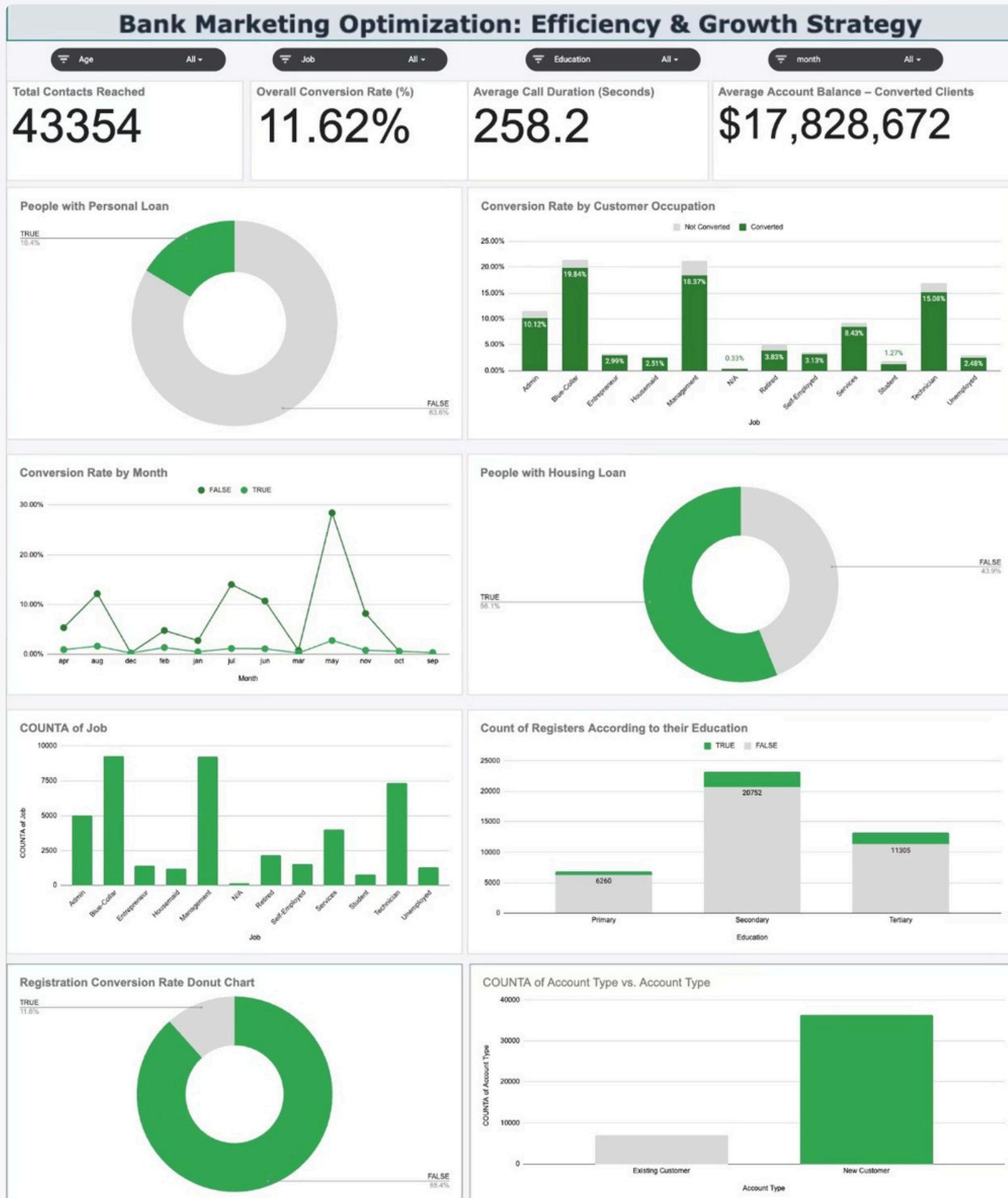
Feature engineering was critical: a binary **debt/credit status** variable unlocked financial health segmentation, while the **New vs Existing** customer flag 4 derived from pdays 4 revealed a significant conversion gap between customer cohorts.

Dashboard Walkthrough

Executive View: Displays key KPIs (Total Contacts, Conversions, Conversion Rate, Avg Balance of Converted) with high-level trend charts.

Operational View: Allows filtering by Job, Marital Status, and Education to pinpoint specific low-performing segments for exclusion.

Interactive Filters: Job, Month, Campaign Number.



Baseline Metrics: Measuring What Matters

Four core KPIs anchor the analytical framework, providing a quantified baseline against which all strategic recommendations are benchmarked.

11.62%

Conversion Rate

Baseline term deposit sign-up rate across all contacted customers in the dataset period.

17.8M

Avg Balance 4 Converted

Average account balance of customers who successfully subscribed to a term deposit.

12.9M

Avg Balance 4 Non-Converted

Average account balance of customers who did not convert a \$4.9M gap vs converted peers.

80%

Effort on New Leads

Share of campaign outreach directed at new customers, despite lower conversion vs existing customers.

- Key Linkage:** Each KPI maps directly to the problem statement 4 conversion rate tracks campaign effectiveness; balance gap quantifies revenue opportunity; effort misallocation signals operational inefficiency.

Three Findings That Change the Strategy

Financial Health Drives Conversion

Customers classified as "In Credit" exhibit significantly higher average account balances at the point of registration. Financial stability is not merely a demographic trait 4 it is a **leading indicator of purchase intent** for term deposit products.

Prior Success Predicts Future Conversion

When a customer's previous campaign outcome was recorded as "Success," their likelihood of converting exceeds **60%** 4 more than five times the baseline rate of 11.62%. Past positive engagement is the single strongest predictor in the dataset.

Call Duration Is a Conversion Signal

Converted customers averaged **537 seconds** per call versus significantly shorter durations for non-converts. Extended call duration reflects genuine customer interest and intent 4 it is both a performance metric and a real-time conversion signal for agents.

Precision Segmentation: Who to Target and Why

Moving beyond aggregate statistics, cluster-level segmentation identified two high-value target cohorts and exposed a critical misallocation of campaign effort.

Segment Alpha 4 Affluent Professionals

Profile: High-balance accounts, tertiary-educated, management or senior professional roles.

Why they matter: This segment combines financial capacity with product sophistication and they understand term deposits and have the liquidity to commit. A targeted value proposition yields disproportionate revenue impact.

Segment Beta 4 Previous Success Leads

Profile: Customers whose prior campaign outcome was "Success" or "Other."

Why they matter: Reconversion rates exceed 60% and the lowest-cost, highest-return segment in the entire database. Yet they currently receive less than 20% of campaign effort.

The Effort Paradox

Existing customers convert at a **higher rate** than new leads, yet **80% of outreach** targets new prospects. Rebalancing this allocation is the single highest-leverage operational change available.

From Data to Decision: The Analytics Dashboard

The project dashboard is structured across two complementary views, enabling stakeholders at every level to extract actionable intelligence from boardroom to frontline.



Executive View 4 Strategic Overview

- **Total Contacts** made in the campaign period
- **Total Conversions** and overall Conversion Rate
- **Average Balance** of converted accounts
- High-level trend lines for month-on-month performance



Operational View 4 Drill-Down Analysis

- Filterable by **Job Category**, **Marital Status**, **Education Level**
- Campaign number and outreach frequency breakdowns
- Month-over-month conversion trends by segment
- Interactive slicers for real-time campaign adjustments

Dashboard Walkthrough Executive View

Executive View 4 Strategic Overview

43,354
Total Contacts

5,289
Conversions

11.62%

Conversion Rate

17,828,672

Avg Balance of Converted



High-level trendchartsvisualize performanceover time, including conversion ratesand revenue contribution (greenand greydonutcharts, bar charts)to providean immediate pulseon campaign health.

Operational View 4 Drill-Down Analysis

The dashboard offersgranularfilteringcapabilities, enablingadeepdiveintocustomer segments and campaignperformance.

- Filter by Job
- Filter by Marital Status
- Filter by Education

Purpose: Pinpoint specific low-performing segments for exclusion.

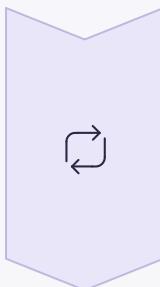
Interactive Filters

- Job
- Month
- Campaign Number



RECOMMENDATIONS

Three Strategic Moves to Transform Campaign ROI



Re-engage Previous Winners

Allocate **60% of outreach effort** towards customers with a prior "Success" or "Other" outcome. At a 60%+ reconversion rate, this is the highest-return segment in the portfolio. Redirect budget from cold prospecting accordingly.



Optimise Call Frequency

Exclude prospects contacted more than 5 times in a campaign cycle. Conversion rates decline sharply beyond this threshold. Hard-cap campaign touches per customer at 5.



Deploy Tailored Messaging

Develop **segment-specific call scripts** for Management and Technician roles, tertiary-educated customers, and high-balance account holders. Personalised value propositions emphasising security, returns, and exclusivity directly improve call-to-conversion ratios.

The Business Case: Quantified ROI

Implementing the three strategic recommendations generates measurable gains across both operational efficiency and revenue performance 4 delivering a compelling return on analytical investment.

15%

Reduction in Call Volume

Achieved by capping repeat contacts and deprioritising low-probability cold leads 4 with **no significant loss in conversions**.

5%
Uplift in Avg Converted Balance

Driven by targeting high-balance Segment Alpha customers, lifting the **revenue quality** of each conversion.

60%
Reconversion Rate for Beta Segment

By reallocating effort to prior-success leads, the effective conversion rate of targeted outreach **quintuples** the baseline.

Why Stakeholders Should Approve

This is not an incremental improvement 4 it is a **strategic reorientation** of the marketing function. Every recommendation is:

- **Data-backed** 4 grounded in 43,354 real customer records
- **Immediately actionable** 4 no new infrastructure required
- **Financially measurable** 4 KPIs defined and baselined
- **Scalable** 4 framework applies to future campaigns

Limitations, Next Steps & Closing Vision

Current Limitations

Missing Macro Context

Interest rate and macroeconomic data were unavailable 4 external rate environments significantly influence term deposit attractiveness and should be incorporated.

Single-Year Snapshot

The dataset covers one campaign cycle. Seasonal effects and year-on-year behavioural shifts remain unverified 4 multi-year data would materially strengthen confidence intervals.

Static Behavioural Data

All features are point-in-time snapshots. Real-time digital behavioural signals 4 website visits, app activity 4 were not captured in the current scope.

Next Steps: The Path to Predictive Marketing



Integrate Real-Time Behavioural Data

Connect CRM with digital channels 4 website activity, app logs, and product page visits 4 to enrich customer profiles dynamically.



Launch Trigger-Based Campaigns

Move from calendar-driven outreach to event-driven campaigns 4 contacting customers when behavioural signals indicate active product consideration.



Deploy Predictive Targeting Models

Build and validate propensity-to-convert models using logistic regression or gradient boosting 4 enabling true precision marketing at scale.

"From mass outreach to precision-driven marketing 4 the future of bank campaigns is intelligent, targeted, and measurable."