

Power BI Business Case

Term Deposit Marketing Campaign Analysis

Objective of the Analysis

The objective of this analysis is to evaluate the effectiveness of a telephonic marketing campaign for term deposits and identify customer segments that are more likely to convert. Since telephonic campaigns are cost-intensive, the goal is to improve targeting efficiency by focusing on customers with higher conversion potential, thereby improving return on investment and reducing operational costs.

This dashboard is designed for an executive audience, with a focus on clarity, business relevance, and actionable insights.

Data Overview & Preparation

Dataset

- Source: Bank Marketing Dataset (Kaggle – Train.csv)
- Records: Individual customer interactions
- Target variable: Subscribed (Yes / No)

Key Data Fields Used

- Demographics: Age, Job, Education, Marital Status
- Financial Information: Balance, Housing Loan, Personal Loan
- Campaign Attributes: Number of contacts (campaign)
- Outcome: Term deposit subscription

Data Preparation Steps (Power BI)

1. Loaded CSV file using Get Data → Text/CSV
2. Verified data types (numeric, categorical)
3. Created calculated measures:
 - Total Customers
 - Total Conversions
 - Success Rate (%)
4. Created derived fields such as:
 - Age Groups
 - Target Segment (High / Low Potential)

All transformations were performed inside Power BI to maintain transparency and reproducibility.

Dashboard Structure

The dashboard contains two report pages:

1. Overview Page – Executive summary and key insights
2. Details Page – Deeper analysis of behavioral and demographic drivers

Page size: 1400 × 900

Design focus: clean layout, minimal clutter, consistent color usage, and accessibility.

OVERVIEW PAGE – Executive Summary

Purpose

To provide leadership with a quick understanding of campaign performance, customer composition, and targeting opportunities.

1. KPI Cards

Visuals Used

- Total Customers
- Total Subscriptions
- Campaign Success Rate (%)

- Customers with existing loans

Why This Visualization

KPI cards provide instant visibility into overall campaign performance and set context for deeper analysis.

Insights

- The overall success rate is relatively low, which is expected for cold-call campaigns.
- Even small improvements in targeting can lead to significant cost savings.

Business Outcome

Executives can quickly assess whether the campaign is meeting expectations and whether optimization is required.

2. Success Rate (%) by Balance Segment

Visualization Type

Clustered Column Chart

Purpose

To analyze how customer financial capacity impacts term deposit subscription success.

What It Shows

- Success rate across balance segments: Low, Medium, and Negative.
- Each bar represents average conversion rate for that segment.

Key Findings

- Customers with positive balances show higher conversion rates.
- Customers with negative balances show comparatively lower engagement.

Business Insight

Customers with available funds are more likely to invest in fixed-term products.

Business Outcome

Marketing campaigns should prioritize medium-to-high balance segments to improve conversion efficiency.

3. Success Rate (%) by Job

Visualization Type

Horizontal Bar Chart

Purpose

To understand how occupation impacts term deposit subscription behavior.

What It Shows

- Success rate by job category.
- Highlights top-performing and low-performing occupations.

Key Findings

- Retired and self-employed customers show higher success rates.
- Blue-collar and service roles show lower engagement.

Business Insight

Job type correlates with income stability and investment preferences.

Business Outcome

Use job category as a secondary targeting filter to refine call lists.

4. Success Rate (%) by Education

Visualization Type

Clustered Column Chart

Purpose

To measure the relationship between education level and subscription success.

What It Shows

- Success rate across education levels (primary, secondary, tertiary, unknown).

Key Findings

- Customers with secondary and tertiary education show higher conversion rates.
- Lower education levels have reduced engagement.

Business Insight

Financial literacy and product understanding increase likelihood of investment.

Business Outcome

Tailor scripts and prioritize customers with higher education levels.

5. Success Rate (%) by Age Group

Visualization Type

Clustered Column Chart

Purpose

To evaluate how customer age influences campaign success.

What It Shows

- Success rate for each age group (Under 30, 30–44, 45–59, 60+).

Key Findings

- Customers aged 60+ demonstrate the highest success rate.

- Younger customers show lower responsiveness.

Business Insight

Older customers typically have higher savings and lower risk tolerance, making term deposits more attractive.

Business Outcome

Call campaigns should prioritize older age segments to maximize success.

6. Interactive Slicers (Marital, Loan, Housing, Education)

Purpose

To enable executives and analysts to dynamically filter insights and observe how different customer attributes affect campaign performance.

Business Outcome

Enhances exploratory analysis and supports data-driven decision-making without requiring technical expertise.

DETAILS PAGE – Deep Dive Analysis

Purpose

While the Overview page summarizes overall campaign performance, the Details page focuses on behavioral drivers and operational efficiency.

It explains *why* certain customers convert and *how* campaign execution impacts success, enabling more precise targeting and cost optimization.

1. Success Rate (%) by Number of Contacts

Visualization Type

Line Chart

Why This Visualization Was Chosen

A line chart clearly illustrates how conversion likelihood changes as the number of telephonic contact attempts increases, making it ideal for identifying diminishing returns.

What the Visualization Shows

- The X-axis represents the number of contact attempts per customer.
- The Y-axis represents the success rate (%).
- Each point shows the average conversion rate for that contact count.

Key Findings

- The highest success rate occurs on the first contact attempt.
- Conversion rates steadily decline after 2–3 calls.
- Beyond 4 calls, success drops significantly.

Business Insight

Repeated calls do not improve outcomes and instead increase operational cost.

Business Outcome

Limit telephonic outreach to a maximum of 3 attempts per customer to improve efficiency and reduce call center expenses.

2. Average Campaign Contacts & Success Rate (%) by Duration Bucket

Visualization Type

Combo Chart (Column + Line)

Why This Visualization Was Chosen

This visualization allows simultaneous analysis of call effort (duration) and conversion effectiveness, highlighting the balance between effort and outcome.

What the Visualization Shows

- Bars represent the average number of campaign contacts by call duration bucket.
- The line represents the success rate (%) for each duration category.

Key Findings

- Very short calls (<1 min) have extremely low success.
- Calls lasting 3–10 minutes show significantly higher conversion rates.
- Excessively long calls do not guarantee higher success.
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Business Insight

Meaningful customer engagement—not call length alone—drives conversions.

Business Outcome

Train agents to focus on structured, high-quality conversations within optimal call durations.

3. Total Customers by Subscribed and Loan

Visualization Type

Stacked Column Chart

Why This Visualization Was Chosen

This chart highlights how existing loan obligations influence subscription outcomes.

What the Visualization Shows

- Comparison of subscribed vs non-subscribed customers.
- Segmented by loan status (Yes/No).

Key Findings

- Customers without existing loans convert at higher rates.
- Loan-heavy customers show lower subscription likelihood.

Business Insight

Customers with fewer financial obligations have greater capacity and willingness to invest.

Business Outcome

Deprioritize customers with active loans when allocating call center resources.

4. Converted Customer Profile (Table)

Visualization Type

Table with Interactive Filters

Why This Visualization Was Chosen

Tables enable granular inspection of individual customer attributes and support validation of observed trends.

What the Visualization Shows

- Age group
- Job
- Balance segment
- Subscription outcome

Key Findings

- Converted customers generally have:
- Medium to high balances
- Fewer loans
- Fewer contact attempts

Business Outcome

Supports replication of high-performing customer profiles in future campaigns.

5. Customer Target Potential Distribution

Visualization Type

Donut Chart

Why This Visualization Was Chosen

The donut chart provides an intuitive summary of how much of the campaign audience aligns with the ideal targeting criteria.

What the Visualization Shows

- Proportion of customers classified as High Potential vs Low Potential
- Classification based on age, balance, loan status, and campaign effort

Key Findings

- A significant portion of the audience is currently low potential.
- Indicates room for better targeting before outreach begins.

Business Insight

Better pre-campaign segmentation can significantly improve ROI.

Business Outcome

Use this distribution to optimize call lists before campaign execution.

Key Business Findings (Summary)

1. Campaign success is driven more by customer quality than volume
2. Older, financially stable customers convert at higher rates
3. Education level significantly influences responsiveness
4. Repeated calling reduces efficiency
5. Existing loan burden negatively impacts conversion

Recommendations

- Prioritize customers aged 30–59
- Focus on customers with higher balances and fewer loans
- Limit call attempts to reduce operational cost
- Use education and marital status to refine targeting
- Continuously monitor target segment distribution