

Case Study Overview

Business Context

You are a Data Analyst for a global marketing agency that runs digital marketing campaigns across multiple channels for various clients. The agency wants to optimize campaign performance and provide data-driven recommendations to clients. You have been tasked with analyzing marketing campaign data to derive insights and build an interactive dashboard that will help the marketing team make strategic decisions.

Dataset

The dataset contains marketing campaign performance metrics with the following fields:

- **campaign_id**
- **company_size** (Small, Medium, Large, Enterprise)
- **industry** (Technology, Finance, Healthcare, Retail, etc.)
- **marketing_channel** (Social Media, Email, PPC, Content Marketing, etc.)
- **ad_spend** (Amount spent on the campaign)
- **duration** (Campaign duration in days)
- **target_audience** (Demographics, interests)
- **region** (Geographic region)
- **device** (Mobile, Desktop, Tablet)
- **operating_system** (iOS, Android, Windows, macOS)
- **browser** (Chrome, Safari, Firefox, Edge)
- **engagement_metric** (Clicks, Views, Shares)
- **conversion_rate** (Percentage of users who completed desired action)
- **success** (Success rating score)
- **budget_allocation** (How budget was allocated)
- **audience_reach** (Number of unique users reached)
- **device_conversion_rate** (Conversion rate by device)
- **os_conversion_rate** (Conversion rate by operating system)
- **browser_conversion_rate** (Conversion rate by browser)

Your Challenge

You will have 2-3 hours to analyze this marketing dataset and build an interactive Power BI dashboard. The goal is to demonstrate your technical skills in Power BI and your ability to derive actionable marketing insights.

Part 1: Data Modeling and Preparation (recommended time : 30-45 minutes)

1. Import the dataset into Power BI
2. Clean and transform the data as needed
3. Create a proper data model with these key tasks:
 - Create a date table from campaign duration
 - Develop calculated columns for ROI and efficiency metrics
 - a. $\text{ROI \%} = (\text{Conversion_Rate} * \text{Ad_Spend}) / \text{Ad_SpendAudience_}$
 - b. $\text{Efficiency} = \text{Audience_Reach} / \text{Ad_Spend}$
 - Establish appropriate relationships between different data dimensions

Part 2: Analysis and Visualization (recommended time : 60-90 minutes)

Create an interactive dashboard with three main sections:

Section 1: Campaign Performance Analysis

- Design visualizations showing channel performance
- Create comparative metrics between different campaigns
- Show ROI and efficiency metrics across campaigns

Section 2: Technology Impact Analysis

- Analyze how different devices, operating systems, and browsers affect conversion rates
- Create visualizations comparing technological factors

Section 3: Audience Targeting Insights

- Analyze performance by region, company size, and industry
- Create visualizations showing the customer journey

Part 3: Presentation (recommended time : 15-30 minutes)

Prepare to present your dashboard, explaining:

- Your approach to data modeling

- The insights you discovered
- How your visualizations answer business questions
- Recommendations for marketing strategy improvements

Expected Outcomes

During the interview, be prepared to:

1. Explain your data modeling decisions
2. Walk through your DAX calculations and why you created them
3. Demonstrate your dashboard's interactive features
4. Showcase your storytelling ability with data
5. Answer technical questions about Power BI functionality
6. Provide marketing insights based on your analysis

Evaluation Criteria

- Technical Power BI skills (data modeling, DAX, visualizations)
- Analytical thinking and problem-solving
- Communication and presentation skills
- Ability to derive actionable insights
- Creativity and dashboard design