Project Title:

Multi-Brand Campaign Analytics and Marketing Performance Optimization

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Project Brief:

This Business Intelligence project analyzes the performance of 30 digital marketing campaigns launched by 6 different electronics companies over a period of 2 months. These campaigns promote a total of 36 distinct products across various categories, each hosted on its **own company website**.

Each company runs 5 campaigns, targeting specific audience segments via digital channels such as social media, Google Ads, and display advertising. The project tracks and analyzes user behavior from ad impressions to conversions, aiming to uncover the key drivers of campaign success and optimize future performance.

Project Objectives:

- Compare the performance of 30 electronics campaigns across different companies, websites, platforms, and product categories.

- Measure and analyze key marketing KPIs such as ROI, CTR, Conversion Rate, CAC, Engagement Time, and Retention.

- Provide actionable insights and recommendations for improving marketing strategies and budget allocation.

- Build interactive dashboards that allow stakeholders to monitor company-wise and category-wise performance in real time.

Data Overview:

- **6 Companies**

- **30 Campaigns**

- **36 Products**

- **70+ Columns** across the following tables:

    - Campaigns & Objectives

- o   Products & Categories

- o   Customers & Target Audience

- o   Platforms & Ad Content

- o   Acquisition & Engagement

- o   Website Interaction (Sessions, Pages, Duration, Clicks)

📈 **KPI Table – Calculations and Use**

KPI	Formula	Description / Use
Click-Through Rate (CTR)	Clicks ÷ Impressions	Measures how effective the ad is at getting users to click.
Conversion Rate	Conversions ÷ Clicks	Evaluates how well clicks are converting into actual actions (e.g., purchases).
Return on Investment (ROI)	Revenue ÷ Actual Budget	Measures how profitable the campaign was based on what was actually spent.
Retention Rate	(All Users – New Users) ÷ All Users	Shows the percentage of returning users (user loyalty or revisit behavior).
Website Click-through	Landing Page Clicks ÷ Impressions	Indicates how many users reached the website landing page from an ad.
Sessions per User	Sessions ÷ All Users	Measures the average number of sessions per user (repeat visits).
Staying in Budget	((Actual Budget – Budget) ÷ Budget) × 100	Shows how much over or under budget the campaign was, as a percentage.

KPI	Formula	Description / Use
Cost Saving per Campaign	Budget – Actual Budget	Shows how much money was saved if the actual spending was less than planned.
Customer Acquisition Cost (CAC)	Actual Budget ÷ Conversions	Indicates the cost to acquire one customer or conversion.
Customer Lifetime Value (CLV) *(optional)*	Avg Purchase Value × Purchase Frequency × Customer Lifespan	Estimates the long-term revenue a single customer will bring. *(Use only if relevant)*

Scenario Summary:

- Each company has its own e-commerce website with dedicated landing pages for their products.

- Each company runs 5 targeted campaigns (30 in total) across digital platforms.

- Customer behavior is tracked from ad impression to landing page interaction, engagement, and eventual conversion.

- The project seeks to answer:

    o Which campaign types and platforms drive the highest ROI and conversions?

    o Which companies and product categories perform best?

    o How can future campaign budgets be optimized based on past performance?

Final Deliverables:

- Fully designed **relational database (OLTP)** and **data warehouse (OLAP)** structure

- ETL pipeline using **SSIS**, and data cube processing with **SSAS**

- Interactive dashboards in **Power BI** and **Tableau**

- Final documentation including **ERD, KPIs, metrics dictionary, and business insights**

- Executive-level report with strategic marketing recommendations

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Data Model Structure and Column Descriptions

1. Campaign

This table stores details about each marketing campaign launched by the companies.

- **ID**: Unique identifier of the campaign.

- **Name**: The campaign title or label.

- **Start Date / End Date**: Timeline of the campaign.

- **Duration**: Calculated duration in days (End Date - Start Date).

- **Conversions**: Number of successful customer actions.

- **Clicks**: Number of ad clicks.

- **Revenue**: Total revenue generated from the campaign.

- **Budget**: Planned budget for the campaign.

- **Total Budget**: Could represent cumulative or adjusted budget across stages.

- **Impressions**: Number of times the ad was shown to users.

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2. Ad Content

Stores creative details for each ad used in campaigns.

- **ID**: Unique identifier for ad content.

- **CTA**: Call-to-action phrase (e.g., "Buy Now").

- **Headline**: The title of the ad.

- **Video Length**: Duration of video ads (in seconds).

- **Description**: Detailed text content of the ad.

- **Creative**: Type or style of the ad creative (image, carousel, etc.).

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3. Platform

Tracks the platforms on which the campaign appears.

- **ID**: Unique platform identifier.

- **Name**: Platform name (e.g., Facebook, YouTube).

- **Device Type**: Device used by the user (mobile, desktop, tablet).

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4. Objective

Defines the purpose of each campaign.

- **ID**: Unique objective ID.

- **Type**: Type of marketing goal (Awareness, Conversion, etc.).

- **Description**: Explanation of the goal and its scope.

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5. Target Audience

Represents the audience segments targeted in each campaign.

- **ID**: Unique identifier for the segment.

- **Gender / Age Range**: Demographics.

- **Interests**: Interests the audience is known for (e.g., tech, fashion).

- **Behavior**: Online/user behavior (e.g., frequent buyers).

- **Location**: Geographical targeting.

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6. Company

Holds data about each brand running the campaigns.

- **ID**: Company identifier.

- **Name**: Brand name.

- **Country**: Where the company is headquartered.

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7. Product

Information about the products being promoted or sold.

- **ID**: Product ID.

- **Name**: Product name.

- **Price**: Sale price (USD).

- **Category**: Product type (e.g., smartphones, laptops).

- **Color**: Available color variants.

- **Stock**: Units in stock.

- **Availability**: In/Out of stock status.

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8. Customer

User-level data that helps track and analyze behavior.

- **ID**: Customer ID.

- **First / Last Name**: Customer full name.

- **Phone / Mail**: Contact information.

- **City / Country**: Location data.

- **Gender / Age**: Demographics.

- **Device Type / Platform Name**: Technical details of the session.

- **Purchases Num**: Total purchases made by the user.

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9. Website

Pages visited during or after campaign interaction.

- **ID**: Page or section ID.

- **Page Name**: Specific page name visited (e.g., product page).

- **Website Name**: Website where the page belongs.

- **Category**: Type of page (e.g., product, support).

- **URL**: Full web address.

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10. Acquisition

Tracks the sources that brought users to the site.

- **ID**: Acquisition record ID.

- **Source**: Origin (e.g., Google, Facebook).

- **Medium**: Method used (e.g., organic, paid).

- **Sessions Num**: Number of sessions initiated.

- **New Users**: Count of first-time visitors.

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11. Engagement

Details user interactions and behavior on the website.

- **ID**: Engagement record ID.

- **Event Name**: Type of event (click, scroll, video play).

- **Event Count**: How often the event occurred.

- **Event Value**: Value tied to the event (e.g., $ for checkout).

- **Engagement Duration**: Time spent during the session/event (in seconds or minutes).

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12. Transaction

Captures sales-related data for purchased products.

- **ID**: Transaction ID.

- **Transaction Date**: When the purchase occurred.

- **Payment Method**: Method used (e.g., Credit Card, PayPal).

- **Quantity**: Number of items bought.

- **Total Price**: Final price (unit price × quantity).