📌 Marketing Campaign Dashboard – Business Requirements Document

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✅ Project Objective

To analyze the performance of Facebook and Google Adwords marketing campaigns over a year by leveraging Python for data cleaning and EDA, and Power BI for interactive visualizations, in order to derive actionable insights and support data-driven decision-making.

📊 Business Requirements

🔹 1. Executive Summary / Overview

Goal: Provide a high-level overview of overall marketing campaign performance.

Metrics to Display:

- Total Spend (Overall, Facebook, Adwords)
- Total Views, Clicks, Conversions, and CTR
- Total Spend Distribution (Pie Chart)
- Total Conversions by Platform (Pie Chart)

Business Question:
How much are we spending, and which channel brings in the most conversions?

🔹 2. Monthly Trend Analysis

Goal: Track campaign performance month over month to detect seasonal patterns or improvements.

Metrics to Display:

- Total Conversions Over Time
- Average CTR Over Time
- Cost per Conversion Over Time
- Channel-wise Comparisons (FB vs Adwords):

    - Conversions
    - CTR
    - Cost per Conversion

Business Questions:

- Are our conversions improving over time?
- Is one channel more consistent or cost-effective across months?

🔹 3. Funnel & Cost Efficiency Comparison

Goal: Understand user drop-off through the marketing funnel and compare efficiency of platforms.

Metrics to Display:

- Conversion Funnels (Views → Clicks → Conversions) for:
    - Facebook
    - Adwords
    - Total
- Cost per Click Comparison (by month and platform)
- Total CPC Over Time

Business Questions:

- What percentage of viewers convert on each platform?
- Which channel gives better cost-efficiency at each funnel stage?

🔹 4. Correlation Insights

Goal: Discover relationships between cost, clicks, and conversions to inform budget allocation.

Metrics to Display (Scatter Plots):

- Total Cost vs Total Conversions

- Total Clicks vs Total Conversions
- Facebook Spend vs Facebook Conversions
- Facebook Clicks vs Facebook Conversions
- Adwords Spend vs Adwords Conversions
- Adwords Clicks vs Adwords Conversions

Business Questions:

- Do higher costs result in more conversions?
- Are clicks a strong predictor of conversions?
- How do spend and performance correlate per platform?

✅ **Tools & Technologies**

- **Python**: Data Cleaning, Data Profiling, Exploratory Data Analysis (EDA)
- **Power BI**: Dashboard Development & Interactive Visualizations
- **Dataset**: Cleaned marketing campaign data (CSV)

📈 **Expected Outcome**

- Identify the **most cost-effective** platform.
- Understand the **conversion funnel** and where drop-offs occur.
- Track **monthly performance trends**.
- Discover **correlations** to support budget and marketing strategy.

Business Question:

How much are we spending, and which channel brings in the most conversions?

📊 **Data from Dashboard:**

Metric	Facebook Ads	Google Ads (AdWords)	Total
Spend	$32K	$49K	**$81K**
Conversions	**4,286 (66.25%)**	**2,183 (33.75%)**	**6,469**

📌 **Insights:**

- ✅ **Total Spend**: $81,000
- 💰 **Higher Spend**: Google Ads ($49K), which is **60.59%** of the total.
- 🥇 **Higher Conversions**: **Facebook Ads** with **4,286 conversions (66.25%)**
- ✅ **Conclusion**: **Facebook Ads** generated more conversions **despite lower spend**, indicating **better conversion efficiency** than Google Ads.

Business Question 1: Are our conversions improving over time?

✅ **Answer:**

- **Overall conversions** have shown a rising trend.
- **January** started with **513**, and by **December**, it reached **587**.
- **July** (571) and **October** (589) saw peaks, indicating strong campaign performance mid-year and post-Q3.
- There is a slight dip in **February** (466), but the trend mostly climbs back up — suggesting seasonal or budget-related variance.

➡️ **Conclusion:**
Yes, conversions are improving overall, with noticeable growth in H2 (July–December).

Business Question 2: Is one channel more consistent or cost-effective across months?

✅ **Answer:**

💸 **Cost per Conversion (Bottom-right chart):**

- **Facebook** consistently has a **much lower cost per conversion** (between **7–9**) across all months.
- **AdWords** fluctuates between **24–30**, with spikes in **August (26)** and **October (26)**.

📊 **CTR Trends (Bottom-middle chart):**

- **Facebook** maintains a steady increase in CTR, peaking at **2.55% in December**.
- **AdWords** CTR remains lower and more stable around **1.25–1.35%**.

📈 **Conversion Volume (Bottom-left chart):**

- **Facebook** consistently outperforms AdWords in conversions every month.
- Especially from **July to December**, Facebook gains more momentum.

➡️ **Conclusion:**

- **Facebook Ads** is the **more cost-effective** and **consistent** channel across months.
- It yields more conversions and a better CTR at a lower cost per conversion compared to AdWords.

Business Question 1: What percentage of viewers convert on each platform?

📌 **Facebook:**

- **Views:** 796K
- **Clicks:** 16K
- **Conversions:** 4K
- **Conversion Rate:**

(4000/796000)*100≈0.5%

📌 **AdWords:**

- **Views:** 1.72M
- **Clicks:** 22.04K
- **Conversions:** 2.18K
- **Conversion Rate:**

(2180/1721780)×100≈0.13%

📌 **Total:**

- **Views:** 2.52M
- **Clicks:** 38.12K
- **Conversions:** 6.47K
- **Conversion Rate:**

(6470/2517360) ×100≈0.26%

➡️ **Answer:**

- **Facebook** converts **0.5%** of its viewers
- **AdWords** converts only **0.13%**
- **Facebook** clearly drives higher viewer-to-customer conversion

Business Question 2: Which channel gives better cost-efficiency at each funnel stage?
Insights:

1. **Facebook CPC is higher** from **January–April**, but after that, it **drops and stays lower** than AdWords for most months.
2. **AdWords starts cheaper**, but **gets relatively more expensive** in **mid and late year**.
3. **Facebook** has **more months (May–Nov)** where it's **more cost-efficient per click**.

✅ **Conclusion:**

- **AdWords is cheaper only in Q1 and December**, but
- **Facebook is more cost-efficient** in **7 out of 12 months**.
- Therefore, **Facebook becomes the better CPC choice** over the year despite a higher start.

Business Requirements #4

1. Do higher costs result in more conversions?

✅ **Answer:**

- The **"Total Cost vs Total Conversions"** scatter plot shows a **moderate positive trend**: as **total cost increases**, **total conversions also increase**, though not perfectly linearly.
- This implies **higher ad spend generally leads to more conversions**, but there may be **diminishing returns** at higher cost levels.

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2. Are clicks a strong predictor of conversions?

✅ **Answer:**

- From the **"Total Clicks vs Total Conversions"** chart, we observe a **strong positive linear relationship**.
- This suggests that **more clicks are strongly correlated with more conversions**.
- This trend is **more consistent than cost vs conversions**, making **clicks a better predictor** of conversion performance.

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3. How do spend and performance correlate per platform?

📌 **Facebook:**

- **Facebook Spend vs Facebook Conversions** shows a **very weak or scattered correlation**.
    - This means spending more on Facebook **does not guarantee** better conversion results.
- **Facebook Clicks vs Facebook Conversions** has a **very strong linear correlation**.
    - Indicates **clicks are highly predictive of conversions on Facebook**.

📌 **AdWords:**

- **AdWords Spend vs AdWords Conversions** appears **scattered with no clear upward trend**.
    - Like Facebook, **spend alone doesn't guarantee performance**.

- **AdWords Clicks vs AdWords Conversions** also shows **strong positive correlation**, though slightly more dispersed than Facebook.