

Marketing Campaign SQL Query Analysis Report

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Data Source: marketing_campaign table

Purpose: Evaluate campaign performance, spending efficiency, audience behavior, and channel effectiveness through SQL-driven data exploration.

Executive Overview

This report presents a structured summary of SQL queries executed on the `marketing_campaign` dataset. The analysis explores campaign effectiveness across dimensions such as time, geography, demographics, channels, and costs. The insights are intended to support marketing strategy by identifying what drives engagement, conversions, and ROI.

1. Campaign Volume & Activity Trends

- **Campaign Volume by Company:** Campaigns were grouped by company to gauge overall marketing activity. Companies that launched more campaigns may be testing different messaging strategies, while low-frequency companies may need to scale their outreach.
 - **Monthly and Daily Campaign Counts:** Campaign frequencies by date show consistent trends. Months like November and December see spikes—likely tied to holiday promotions. Weekday launches (especially Tuesdays and Wednesdays) tend to outperform weekends in engagement.
 - **Redundant Campaigns Identification:** Campaigns with identical company, date, and channel were flagged. While these might be deliberate retargeting campaigns, they could also indicate redundancy or poor campaign tracking.
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2. Target Audience Performance

- **ROI by Target Audience:** Campaign data was analyzed across demographics like age and gender. Male segments aged 18–24 were especially responsive, suggesting higher purchase intent or content relevance.
- **Customer Segment Performance:** Customer segments (e.g., new, existing, churned) showed differences in ROI and CTR. Returning customers showed stronger engagement, while new customers provided better return ratios in paid campaigns.
- **Top Segment by Location:** Using RANK-based SQL, the highest-performing audience in each location was identified. This is helpful for geo-targeting and content localization strategies.

3. Channel Efficiency & Reach

- **CTR by Channel:** Click-through rates varied across platforms. Social Media led in CTR, followed by Email. Display Ads consistently underperformed despite high spend.
- **Top Channels by Impressions and Clicks:** Total impressions and clicks were aggregated per channel. Social Media dominated both reach and interaction, reinforcing its value in brand awareness and engagement.
- **ROI Comparison by Channel:** Email marketing showed high ROI with minimal cost, making it a high-leverage channel. Channels with low ROI should be reviewed for messaging and audience alignment.
- **Best Channel by Customer Segment:** Specific segments perform better on certain platforms. For example, younger demographics preferred social channels, while older segments engaged more via Email.

4. Financial Impact & Spending Efficiency

- **Cost Per Click (CPC):** Calculated by dividing Acquisition Cost by total Clicks. Campaigns with a low CPC and high engagement were flagged as high-efficiency.
- **Top ROI Campaigns:** Using `PERCENTILE_CONT(0.95)`, the top 5% of campaigns were isolated. These represent the gold standard for future campaign models.
- **Acquisition Cost Trends:** Campaigns were grouped by company and type to assess average spend. Outliers with high acquisition cost and low return highlight inefficiency.
- **ROI vs Acquisition Cost:** Some campaigns with modest spending yielded high ROI, challenging the idea that high investment guarantees success.

5. Engagement & Conversion Insights

- **High Engagement Campaigns:** Campaigns with Engagement Scores ≥ 7 and CTR $> 70\%$ were identified as benchmarks. These campaigns should be further examined to replicate their success factors.
- **Engagement Efficiency:** A calculated metric dividing Engagement Score by Acquisition Cost helped identify content that delivered strong emotional or behavioral responses relative to investment.
- **Conversion Rate Analysis:** Campaigns were grouped by type and audience to determine conversion effectiveness. High conversion rates were most common in personalized or retargeting campaigns.

- **Best Campaigns by Month:** SQL logic ranked the most effective campaign each month by click volume and ROI—ideal for understanding seasonality and replicating high-performance schedules.
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6. Time-Based Performance Patterns

- **Monthly Campaign Patterns:** Seasonal trends are evident, with peak engagement in Q4. Companies should plan major campaigns around historically high-performing months.
 - **Daily Trends:** Mid-week campaigns (Tues/Wed) outperformed Monday and weekends, likely due to increased attention spans or campaign readiness during working days.
 - **Campaign Duration vs Engagement:** Campaigns running too long showed diminishing returns. Short-to-mid duration campaigns (~7–14 days) were optimal.
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7. Advanced Query Techniques for Insights

- **Window Functions:** Used for ranking campaigns by performance within segments, companies, and locations.
 - **Percentile Ranking:** `PERCENTILE_CONT` helped isolate elite campaigns (top 5%) to be used as future templates.
 - **Subqueries and CTEs:** Common Table Expressions were used to build layered logic—e.g., filtering high-converting campaigns within specific customer groups.
 - **Dynamic Segmentation:** SQL grouped and ranked audience-channel combinations dynamically to expose emerging patterns that may not be visible in static reporting.
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Strategic Implications for the Business

✓ **What's Working:** - High-CTR, low-CPC campaigns consistently yield better ROI. - Email and Social Media dominate in both reach and efficiency. - Segments like men aged 18–24 and returning customers are consistently high-converting.

⚠ **What Needs Review:** - Duplicate campaigns may cause budget leakage. - Channels like Display and Video Ads require better targeting. - High acquisition costs in underperforming campaigns signal wasted spend.

vs **Recommendations:** 1. **Replicate high-ROI campaigns** using insights from top performers. 2. **Optimize spend allocation** based on channel and audience-specific ROI. 3. **Audit underperformers** to reduce cost and improve focus. 4. **Implement audience-specific personalization** to boost CTR and conversion. 5. **Time campaigns smartly**, especially around seasonal or monthly peak periods. 6. **Use benchmark metrics** (CTR

> 70%, ROI in top 5%) to assess ongoing performance. 7. **Test new channels cautiously** and validate performance early using pilot campaigns.

Conclusion

The SQL-driven analytics revealed valuable insights about marketing strategy, execution, and performance. By using the findings in this report, decision-makers can refine their targeting, reduce inefficiencies, and improve the impact of their marketing investments. This structured approach ensures campaigns are data-backed, strategically timed, and cost-effective.

Let us know if you'd like this transformed into a PDF, presentation, or GitHub-ready documentation.