**MDA Chewy: Excel Functions & Metrics**

**Project:** Historical SEM & Paid Social Performance Analysis  
**Focus:** Data mining, pivot tables, calculated metrics, and insight generation

**Metrics Calculated**

| **Metric** | **Formula** | **Description** |
| --- | --- | --- |
| CTR | =Clicks/Impressions | Click-through rate: percentage of ad impressions that resulted in clicks |
| CPC | =Spend/Clicks | Cost per click: how much each click costs |
| CVR | =Orders/Clicks | Conversion rate: percentage of clicks that resulted in orders |
| CPA | =Spend/Orders | Cost per acquisition: cost to generate one order |
| Revenue | Sum of revenue | Total revenue generated by channel or campaign |

**Pivot Tables Created**

**Overall Performance Breakdown by Channel**

* **Rows:** Channel (SEM, Meta)
* **Values:** Total Spend, Total Revenue, Total Clicks, Total Orders
* **Calculated Fields:** CPC, CPA, CTR, CVR

**Performance Breakdown by Campaign**

* **Rows:** Campaign Name
* **Columns:** Channel
* **Values:** Spend, Revenue, Clicks, Orders
* **Calculated Fields:** CPC, CPA, CTR, CVR

**Quarterly Performance Comparison (Q1 vs Q2)**

* **Rows:** Metric (Spend, Revenue, Clicks, Orders, CPC, CPA, CTR, CVR)
* **Columns:** Quarter (Q1, Q2)
* **Values:** Sum of each metric
* **Calculated Fields:** % Change = (Q2 - Q1)/Q1

**Key Excel Functions Applied**

| **Function** | **Example Usage** | **Purpose** |
| --- | --- | --- |
| =SUMIFS() | =SUMIFS(SpendRange, ChannelRange, "SEM") | Sum spend by channel or campaign |
| =COUNTIFS() | =COUNTIFS(ClicksRange, ">100") | Count campaigns or keywords exceeding a threshold |
| =IFERROR() | =IFERROR(Spend/Orders,0) | Prevent errors like division by zero in CPA/CVR calculations |
| =VLOOKUP() | =VLOOKUP("Bird", CampaignTable, 2, FALSE) | Lookup landing page or campaign details |
| =XLOOKUP() | =XLOOKUP("Q2", QuarterRange, SpendRange) | Match and return corresponding metric across quarters |

**Data Modeling & Power Query**

* Combined multiple raw datasets (SEM, Paid Social, landing pages) using Power Query
* Created normalized table structure for pivot analysis
* Columns included: Quarter, Channel, Campaign, Campaign Type, Fiscal Week, Date, Spend, Revenue, Clicks, Impressions, Orders
* Calculated fields and metrics dynamically generated for reporting and trend analysis

**Insights & Recommendations (Summary)**

* **Top Performing Campaign:** Dog – highest revenue, lowest CPA, strong CTR/CVR
* **Lowest Performing Campaign:** Reptile (Meta) – low revenue, high CPA, low CVR
* **Channel Insights:** SEM outperforming Paid Social in CTR and CVR, but Meta lower CPC
* **Quarterly Trends:** Q2 CTR +8.17%, CVR -16.16%, CPC -4.46%, CPA +18.26%
* Recommendations: Focus spend on top-performing campaigns/channels, pause underperforming campaigns, and optimize landing pages