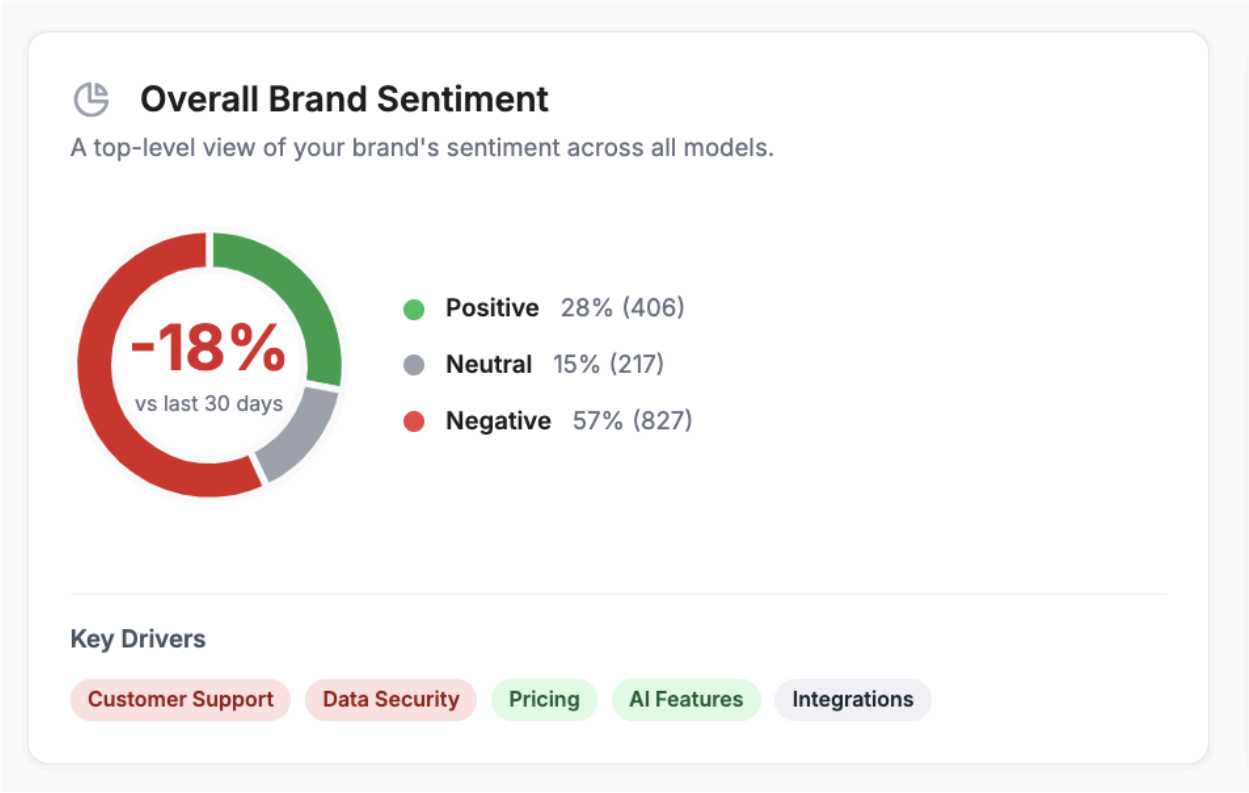
Overall Brand Sentiment



The logic and formulas for the **Overall Brand Sentiment** card.

The core idea is to process your raw data (prompts and their corresponding LLM answers) through a series of analytical layers to generate the final metrics.

Here's the step-by-step logic:

Foundation: The Enriched Data

First, you need to process every raw response you've collected. For each response, you'll need to run two primary analyses:

1. **Sentiment Analysis:** Each response text is analyzed to determine its sentiment. The output for each response should be:
    - A **sentiment_label**: Positive, Negative, or Neutral.
    - A **sentiment_score**: A number from -1.0 (very negative) to +1.0 (very positive).
2. **Topic Tagging:** Each response text is analyzed to identify its main topics or keywords.
    - The output is a list of **topics**: e.g., ['Pricing', 'Discounts'], ['Customer Support'].

Once this is done, every response in your database should have this enriched information associated with it.

Logic for Each Component on the Card

With that enriched data, here's how you calculate each metric for the "Overall Brand Sentiment" card within a given time frame (e.g., the last 30 days).

1. The Doughnut Chart & Positive/Negative/Neutral Numbers

This is the most straightforward calculation.

- **Logic:** Count the total number of responses for each sentiment label.
- **Formulas:**
  - `Positive_Count` = Total responses where `sentiment_label` is 'Positive'.
  - `Negative_Count` = Total responses where `sentiment_label` is 'Negative'.
  - `Neutral_Count` = Total responses where `sentiment_label` is 'Neutral'.
  - `Total_Responses` = `Positive_Count` + `Negative_Count` + `Neutral_Count`.
- **For the Chart Percentages:**
  - `Positive_%` = (`Positive_Count` / `Total_Responses`) * 100
  - `Negative_%` = (`Negative_Count` / `Total_Responses`) * 100
  - `Neutral_%` = (`Neutral_Count` / `Total_Responses`) * 100

These values directly populate the doughnut chart and the numbers next to it (e.g., "Positive: 28% (406)").

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2. The Overall Brand Sentiment Score (e.g., -18%)

This score provides a single, top-level metric of your brand's health. It's a weighted score that accounts for the intensity of the sentiment.

- **Logic:** Calculate a "Net Sentiment" by treating positive responses as +1 and negative responses as -1. Then, find the average.
- **Formula:**
  - `Net_Sentiment_Score` = (`Positive_Count` × 1) + (`Negative_Count` × -1)
  - **`Overall_Brand_Sentiment_%` = (`Net_Sentiment_Score` / `Total_Responses`) × 100**
- **Example:** Using the numbers from your dashboard (Positive: 406, Negative: 827, Total: 1450):
  - `Net_Sentiment_Score` = (406 × 1) + (827 × -1) = -421
  - Overall_Brand_Sentiment_% = (-421 / 1450) × 100 = -29%
    (Note: The numbers in the UI are illustrative, but this formula provides the correct logic.)

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3. The Change vs. Last 30 Days

This metric provides crucial trend information.

- **Logic:** Calculate the Overall Brand Sentiment for the current period and the immediately preceding period, then find the difference.
- **Formulas:**
    1. `Current_Period_Sentiment` = Calculate the `Overall_Brand_Sentiment_%` for the selected time frame (e.g., days 1-30).
    2. `Previous_Period_Sentiment` = Calculate the `Overall_Brand_Sentiment_%` for the *previous* equivalent time frame (e.g., days 31-60).
    3. **`Change_%` = `Current_Period_Sentiment` - `Previous_Period_Sentiment`**

The result will be a positive or negative number that you can display with an up or down arrow.

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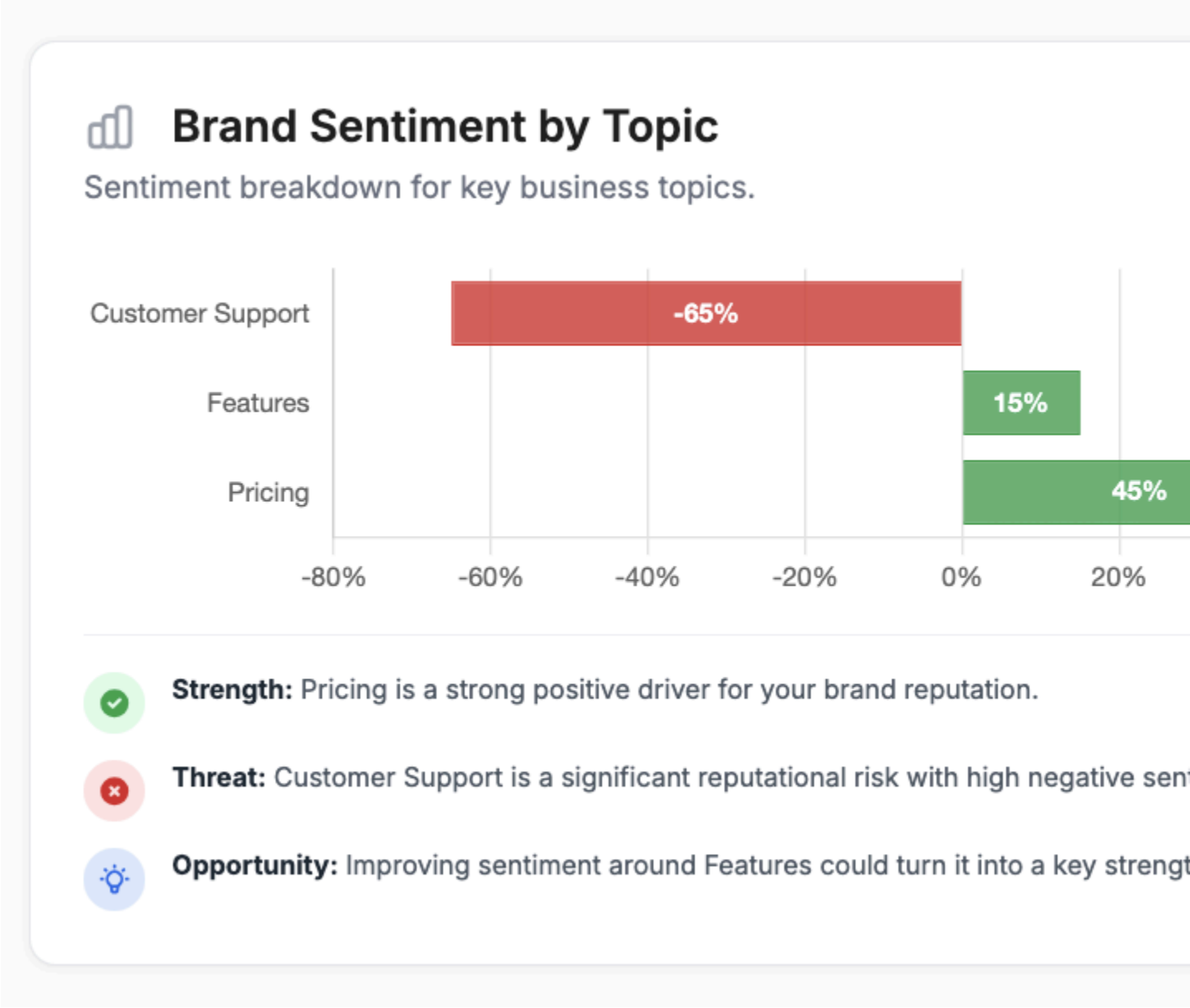
4. The Key Drivers

This is the most sophisticated piece of analysis on the card. It tells you *why* your sentiment is what it is.

- **Logic:** Identify which topics have the most significant positive or negative impact by considering both their sentiment and their volume.
- **Formulas & Steps:**
    1. **Group by Topic:** For every topic you've tagged (e.g., 'Pricing', 'Customer Support'), create a group of all responses that contain that tag.
    2. **Calculate Topic-Specific Sentiment:** For each topic group, calculate its own `Overall_Brand_Sentiment_%` using the formula from step 2.
        - *Example for "Pricing":* `Pricing_Sentiment_%` = ((Positive Pricing Responses - Negative Pricing Responses) / Total Pricing Responses) * 100
    3. **Calculate an Impact Score:** To find the *key* drivers, you need to weigh sentiment by volume. A topic with a -80% sentiment that was only mentioned twice is less important than a topic with -40% sentiment that was mentioned 500 times.
        - **`Impact_Score` = `Topic_Sentiment_%` × log(Total Responses for that Topic)**
        - Using the logarithm of the volume (`log(Volume)`) prevents extremely high-volume topics from completely dominating the results.
    4. **Rank and Display:**
        - Rank all topics by their `Impact_Score` from highest to lowest.
        - The top 2-3 topics with the highest positive scores are your **Positive Drivers**.
        - The top 2-3 topics with the lowest negative scores are your **Negative Drivers**.

- Topics with scores close to zero are your **Neutral Drivers**.

Brand Sentiment by Topic



The logic and formulas required to power the **Brand Sentiment by Topic** card.

This card is designed to move beyond the overall brand score and show you *which specific aspects* of your business are driving your reputation. The logic builds directly on the enriched data we discussed before.

Foundation: The Enriched Data

As a reminder, the logic assumes each response in your database has been processed and contains:

- `sentiment_label` (`Positive`, `Negative`, `Neutral`)
- `sentiment_score` (-1.0 to +1.0)
- `topics` (a list of tags like `['Pricing']`, `['Customer Support', 'Billing']`, etc.)

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1. Logic for the Horizontal Bar Chart

The bar chart visualizes the average sentiment for your most important business topics.

- **Logic:** For each pre-defined key topic, you need to isolate all responses related to it and calculate the average sentiment for that specific group.
- **Formulas & Steps:**
    - **Define Key Topics:** First, you must define the list of key business topics you want to consistently track. These become the labels on the chart's Y-axis (e.g., 'Customer Support', 'Features', 'Pricing').
    - **Isolate Topic Data:** For each key topic, filter your database for all responses (within the selected date range) that include that specific topic tag.
    - **Calculate Topic Sentiment Score:** For each topic's group of responses, apply the Net Sentiment formula:
        - `Topic_Positive_Count` = Count of responses in the group with `sentiment_label` = 'Positive'.
        - `Topic_Negative_Count` = Count of responses in the group with `sentiment_label` = 'Negative'.
        - `Topic_Total_Responses` = Total number of responses in the group.
        - `Topic_Net_Sentiment` = `Topic_Positive_Count` - `Topic_Negative_Count`.
    - **Calculate the Final Percentage:** This gives you the value for each bar in the chart.
        - **`Topic_Sentiment_%` = (`Topic_Net_Sentiment` / `Topic_Total_Responses`) × 100**
- **Example:**
    - Let's say the topic **"Pricing"** was mentioned in 200 responses.

    - Of those, 120 were positive, 20 were negative, and 60 were neutral.
    - `Topic_Net_Sentiment` = 120 - 20 = 100.
    - `Topic_Sentiment_%` = (100 / 200) * 100 = **+50%**. This would be the value for the "Pricing" bar.

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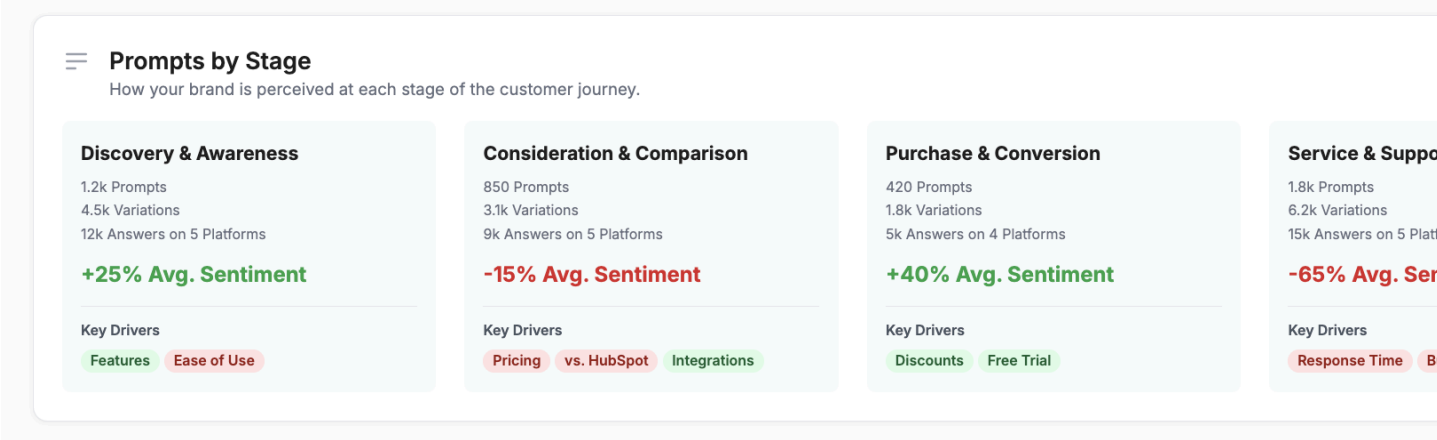
2. Logic for the Strength, Threat & Opportunity Insights

These insights are automated summaries that instantly draw the user's attention to the most important topical trends.

- **Logic:** This involves ranking the topics based on their calculated sentiment scores and, in the case of "Opportunity," considering the volume of conversation.
- **Formulas & Steps:**
    1. **Calculate All Topic Sentiments:** First, run the `Topic_Sentiment_%` calculation for every key topic you defined in Step 1.
    2. **Identify the Strength:**
        - **Formula:** Find the **`MAX(Topic_Sentiment_%)`** from your list of topics.
        - **Generate Insight:** The topic corresponding to this highest positive score is your key strength.
        - *Example Output:* "Strength: [Topic Name] is a strong positive driver for your brand reputation."
    3. **Identify the Threat:**
        - **Formula:** Find the **`MIN(Topic_Sentiment_%)`** from your list of topics.
        - **Generate Insight:** The topic corresponding to this lowest negative score is your key threat.
        - *Example Output:* "Threat: [Topic Name] is a significant reputational risk with high negative sentiment."
    4. **Identify the Opportunity:**
        - **Logic:** An opportunity is a topic that is frequently discussed but doesn't yet have a strong positive or negative sentiment. Pushing this topic into positive territory would have a major impact because of its high volume.
        - **Formula & Steps:** i. **Filter for Neutrality:** First, select all topics whose `Topic_Sentiment_%` is in a neutral range, for example, between -15% and +15%. ii. **Find Highest Volume:** From that filtered list, find the topic with the highest `Topic_Total_Responses`. iii. **Generate Insight:** This high-volume, neutral-sentiment topic is your biggest opportunity. iv. *Example Output:* "Opportunity: Improving sentiment around [Topic Name] could turn it into a key strength."

Prompts by Stage



STAGES:

Option 1 (Our one):

- DISCOVERY + AWARENESS
- CONSIDERATION + COMPARISON
- PURCHASE + CONVERSION
- SERVICE + SUPPORT

Option 2 (Scrunch):

- ADVICE
- AWARENESS
- EVALUATION
- COMPARISON
- OTHER

Option 3 (New Suggestion):

- **AWARENESS**
    - **What it is:** This stage represents the user's first encounter with a problem space or your brand. They aren't comparing options yet; they are learning and discovering. The reputational goal here is to be visible and make a positive first impression.
    - **Example Prompts:** *"What are the best tools for X?"*, *"What is [Your Brand Name]?"*, *"Reviews for [Your Industry]"*.

- **CONSIDERATION**
    - **What it is:** This is the active evaluation and comparison phase. The user knows about your brand and is now directly comparing its features, price, and quality against named competitors. This is a critical battleground for reputation.
    - **Example Prompts:** *"[Your Brand] vs. [Competitor Brand]"*, *"Is [Your Brand] worth the price?"*, *"Reviews of [Your Product]"*.

- **CONVERSION**
    - **What it is:** This stage focuses on the moment of purchase or commitment. Prompts here are highly transactional and reveal the final barriers or drivers to becoming a customer. The reputation goal is to appear trustworthy and make the process seamless.
    - **Example Prompts:** *"[Your Brand] discount code"*, *"How to cancel [Your Brand] contract?"*, *"Is it easy to set up [Your Brand]?"*.

- **LOYALTY**
    - **What it is:** This is the post-purchase experience. It's a more insightful term than "Support" because it encompasses the entire customer relationship, including satisfaction, advocacy, and potential churn signals. It answers: "Do our customers love us after they've paid?"
    - **Example Prompts:** *"[Your Brand] support is slow"*, *"How do I use [X feature]?"*, *"I love using [Your Brand]"*, *"Problems with [Your Brand] billing"*.

The logic and the specific formulas for the **Prompts by Stage** card, using the new, more efficient stages: **Awareness, Consideration, Conversion, and Loyalty**.

This structure is designed to give your clients a clear, actionable view of their reputation across the entire customer lifecycle.

Part 1: Foundation - Mapping Your Universal Taxonomy to the New Stages

This mapping is the core logic that powers the entire card. It dictates which topics and keywords are associated with each stage of the customer journey.

1. AWARENESS

- **Description:** This stage covers a user's first encounter with the brand or the problem space. The goal is to be visible and make a positive first impression.
- **Mapped Topics from `universal_topic_taxonomy`:**

    - Core Functionality / Purpose
    - Marketing & Advertising
    - Company News & Financials
    - Market Leadership & Innovation
    - Corporate Social Responsibility (CSR)
    - Leadership & Vision
    - Ethics & Values

2. CONSIDERATION

- **Description:** The active evaluation phase. Users are comparing your product/service against competitors on features, quality, and price.
- **Mapped Topics from universal_topic_taxonomy:**
    - Competitor Comparison (and all sub-topics like Feature Comparison, Price Comparison, etc.)
    - Value for Money / ROI
    - Price & Cost
    - Plans / Tiers / Packages
    - Features & Specifications
    - Quality & Craftsmanship
    - Design & Aesthetics
    - Performance
    - Variety / Selection

3. CONVERSION

- **Description:** This stage focuses on the final decision-making and purchase process. It reveals the final barriers or drivers to becoming a customer.
- **Mapped Topics from universal_topic_taxonomy:**
    - Sales Process
    - Free Trial / Demo
    - Discounts & Promotions
    - Contracts & Terms
    - Financing Options
    - Billing & Payments
    - Implementation / Setup
    - Onboarding & Training
    - Shipping & Delivery
    - Inventory & Availability

4. LOYALTY

- **Description:** The post-purchase experience. This stage measures customer satisfaction, advocacy, and potential churn signals.
- **Mapped Topics from `universal_topic_taxonomy`:**
    - `Customer Support` (and all sub-topics like `Response Time`, `Quality of Support`)
    - `User Experience (UX)`
    - `Reliability / Uptime`
    - `Returns & Refunds`
    - `Warranty & Repairs`
    - `Account Management`
    - `Documentation & Self-Help`
    - `Workplace & Employees` (as it often impacts customer perception of the brand's stability and values)

Part 2: The Calculation Engine & Formulas

With the mapping above established, you can now apply the following formulas to your enriched (tagged) data for each of the four stages.

1. For the Summary Numbers (e.g., "1.2k Prompts, 4.5k Variations")

This is a **filtering and counting** process.

- **Logic:**
    1. Select a stage (e.g., "Consideration").
    2. Retrieve the list of all topics mapped to that stage from Part 1.
    3. Filter your entire database to get only the prompts tagged with **at least one** of those topics.
    4. From that filtered group of prompts, you simply **SUM** the total number of unique prompts, their variations, and the answers collected for them. You also count the number of unique LLM platforms.

2. For the "Avg. Sentiment" (e.g., "-15%")

This uses the **Net Sentiment Formula**, scoped to the specific stage.

- **Logic:**
    - Gather all the *responses* associated with the prompts for a specific stage (e.g., all responses for "Consideration" prompts).
    - Count the positive and negative responses within that specific group.
- **Formula:**
    - `Stage_Net_Sentiment` = (`Positive_Response_Count_in_Stage`) - (`Negative_Response_Count_in_Stage`)
    - `Stage_Total_Responses` = Total number of all responses in that stage.

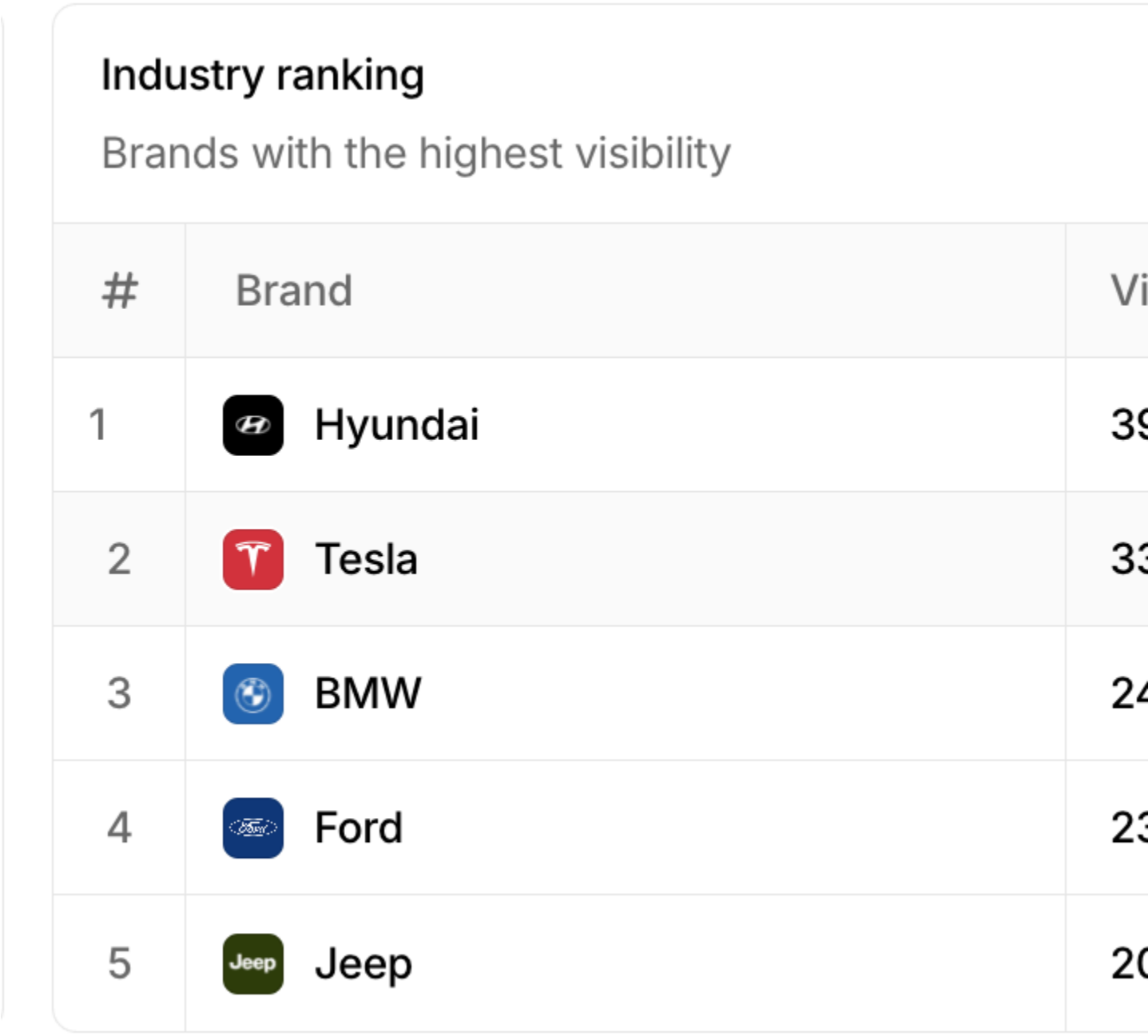
    - **`Stage_Avg_Sentiment_%` = (`Stage_Net_Sentiment` / `Stage_Total_Responses`) × 100**

3. For the "Key Drivers" (e.g., "Pricing", "vs. HubSpot")

This uses the **Weighted Impact Score Formula** to find the most influential topics *within that stage*.

- **Logic:**
    1. For a given stage (e.g., "Consideration"), look only at the topics mapped to it.
    2. For each of those topics (e.g., 'Pricing', 'Value for Money'), calculate its sentiment and volume *using only the data from that stage's responses*.
    3. The "Impact Score" identifies which topic had the biggest positive or negative effect on that stage's overall sentiment.
- **Formula:**
    1. **`Impact_Score` = `Topic_Sentiment_within_Stage_%` × `log(Volume_of_Topic_within_Stage)`**
- **Process:**
    1. Calculate the Impact Score for every topic within the stage.
    2. Rank the topics by this score.
    3. The topic with the highest positive score is the top positive driver.
    4. The topic with the lowest (most negative) score is the top negative driver.

Industry Ranking



The logic and formulas for the **Industry Ranking** card.

This card is a powerful competitive intelligence tool. Its purpose is to move beyond your own brand's metrics and show exactly how you stack up against the competition in terms of visibility on the most important, high-level industry queries.

Foundation: Defining the Arena

Before any calculations can be done, two things must be defined in the platform's setup for each client. For this example, the client is **Tesla**.

1. **The Competitive Set:** You must define a list of direct competitors to be tracked.
    - **Example for Tesla:** `['Hyundai', 'BMW', 'Ford', 'Jeep', 'Rivian', 'Lucid']`
2. **The "Industry Prompts" Bucket:** This is the most critical step. You need to curate a specific list of high-value, non-branded prompts that define the industry. These are the queries a potential customer might ask before they have decided on a specific brand.
   WE SHOULD FETCH THESE PROMPTS
    - **Example for the Automotive Industry:**
        - *"What is the best electric car?"*
        - *"Safest family SUVs 2024"*
        - *"Most reliable electric vehicles"*
        - *"Which car has the best self-driving technology?"*
        - *"Longest range EV"*

The analysis for this card is performed *only* on the answers generated for this specific bucket of "Industry Prompts".

Logic for Each Column on the Card

Here's how each metric in the table is calculated for a given time period (e.g., Last 30 Days).

1. Visibility Percentage

This is the core metric. It represents a brand's "Share of Voice" within the answers to the most important industry questions.

- **Logic:** For each brand in the competitive set, you count how many times it was mentioned in the answers to the "Industry Prompts" and then calculate what percentage of the *total* mentions that represents.
- **Formulas & Steps:**
    - **Count Mentions for Each Brand:**
        - `Tesla_Mentions` = Count the number of times "Tesla" appears in the answers to the Industry Prompts.
        - `Hyundai_Mentions` = Count the number of times "Hyundai" appears.
        - ...and so on for every brand in the competitive set.
    - **Calculate Total Mentions:**

        - Total_Industry_Mentions = Tesla_Mentions + Hyundai_Mentions + BMW_Mentions + ...
    - **Calculate Visibility Percentage for Each Brand:**
        - **Visibility_% = (Brand_Mentions / Total_Industry_Mentions) × 100**
- **Example for Tesla:**
    - If Tesla was mentioned 500 times and the total mentions for all competitors combined was 1500:
    - Tesla_Visibility_% = (500 / 1500) * 100 = **33.3%**

2. Rank (#)

- **Logic:** This is a simple ranking based on the calculated Visibility_%.
- **Formula:**
    - **Rank all brands in the competitive set from highest Visibility_% to lowest.** The brand with the highest percentage gets rank #1.

3. Trend (Change in Visibility)

- **Logic:** This shows whether a brand's visibility is increasing or decreasing compared to the previous time period.
- **Formulas & Steps:**
    1. Current_Visibility_% = Calculate the Visibility_% for the selected period (e.g., Last 30 Days).
    2. Previous_Visibility_% = Calculate the Visibility_% for the *immediately preceding* period (e.g., Days 31-60).
    3. **Trend_% = Current_Visibility_% - Previous_Visibility_%**
- The result determines the arrow: positive for green up arrow, negative for red down arrow, and zero for a neutral symbol.

4. Previous Rank

- **Logic:** This shows what the brand's rank was in the prior period, providing context for any movement up or down the list.
- **Formula & Steps:**
    1. For every brand in the competitive set, calculate their Previous_Visibility_% as described in the Trend calculation.
    2. **Rank all brands based on their Previous_Visibility_%** to determine what their rank was in the last period.

By following this logic, you can create a highly valuable and competitive ranking system that clearly demonstrates a brand's share of voice and reputational standing within its industry's key conversations.