



Data Analytics Case Study

Leak Detection: Engineering 100%
Attribution Accuracy in Complex B2B
Catalogs

Kristina Lichtenwald

SEO STRATEGIST & DATA ENGINEER

FOCUS: GTM DEBUGGING, GA4 EVENT VALIDATION, REGEX
FILTERING, ATTRIBUTION RECOVERY

The Challenge:

Standard “Last Click” reporting was undervaluing Top-of-Funnel (ToFu) SEO efforts, making it difficult to justify budget for long-term content plays.

The Objective:

Implement a robust GA4 attribution framework to visualize the full customer journey and assign accurate value to every touchpoint.

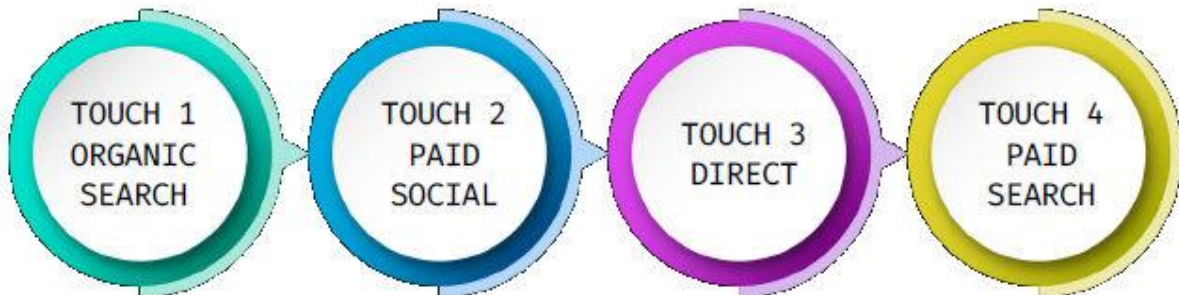
The “Zero-Waste” Approach

Step 1: Technical Tracking Audit:

Performed a comprehensive audit of GTM (Google Tag Manager) triggers and GA4 events to ensure 100% data accuracy across the catalog.

Step 2: Model Comparison:

Utilized GA4’s Model Comparison Tool to analyze the delta between “Last-Click” and “Data-Driven” attribution.



Step 3: Assisted Conversion Mapping:

Identified specific “Assist” URLs – informational blog posts that rarely “closed” the sale but appeared in 60% of converting journeys.

Feature	Legacy “Last-Click” Model	MTA Engineered System
<i>SEO Valuation</i>	Under-reported (Direct/PPC bias)	Full-Funnel Visibility
<i>Content ROI</i>	“Zero Value” for ToFu blogs	Verified Assisted Conversion value
<i>Budget Logic</i>	Cut non-converting pages	Invest in High-Assist assets
Outcome	Scaled-back SEO growth	Optimized Multi-Channel Spend

Technical Execution

BigQuery Export

Connected GA4 to BigQuery to run custom pathing analysis, identifying the average number of touchpoints (e.g., 4.2 visits) before a B2B lead conversion.

Data Cleaning

Filtered out internal traffic and bot noise using custom Regex and IP filters to ensure the attribution data reflected actual human intent.

Results & Business Impact

Strategic Re-Alignment

Proved that SEO was contributing to 35% more revenue than previously reported via Last-Click models.

Budget Optimization

Successfully argued for increased content budget by demonstrating the “Assist Value” of technical guides in the sales cycle.

Executive Buy-In

Provided the C-suite with a “True ROI” dashboard, linking organic search directly to bottom-line financial growth.

This and the other case studies represent Technical Proofs of Concept designed to demonstrate high-level SEO architecture, Python-driven automation, and advanced data modeling.

While the brand names and specific datasets are simulated to protect proprietary methodologies, each scenario is built on real-world logic, live SERP data, and enterprise-level growth frameworks. These case studies serve as a sandbox for testing zero-waste efficiency before deployment in live production environments.

None of the solutions of the case studies are “off the shelf.” They are custom-built to eliminate waste and demonstrate some of my knowledge.