

WHITEPAPER



Campaignster's Unified Data Model for Social Media Platforms

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THE CONTENT



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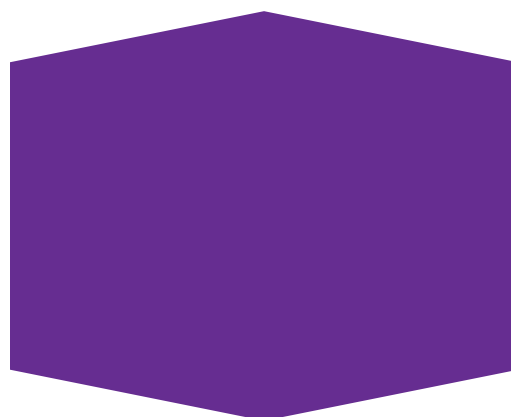
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In the fast-evolving world of digital advertising, maximizing the return on ad spend (ROAS) is critical for agencies and advertisers. Campaignster, a Software-as-a-Service (SaaS) solution powered by Dattico, was designed to address this challenge by integrating data from leading social media platforms—Meta, TikTok, and Google—into a unified model. This model enables media buyers to optimize advertising content and improve campaign performance by leveraging AI-driven insights.

However, the integration of disparate metrics from different platforms, such as Clicks on Google Ads, Scrolls on TikTok, and Engagements on Meta, posed significant challenges. Despite these difficulties, Dattico successfully created a unified data model that allows users to aggregate and analyze data across platforms, providing a comprehensive view of campaign performance.



STATEMENT

The digital advertising landscape is fragmented, with multiple platforms offering various metrics to gauge campaign success. Each platform—Meta, TikTok, and Google—has its own set of unique data metrics and APIs, making it difficult for advertisers to compare performance across platforms directly. This fragmentation leads to inefficiencies in campaign management, as media buyers must manually aggregate and normalize data from different sources. This process is not only time-consuming but also prone to errors, which can negatively impact decision-making and campaign outcomes.

Challenges in Integration:

- **Diverse Metrics:** Each platform uses different metrics to define user interactions, such as Clicks, Scrolls, and Engagements, which are not directly comparable.
- **API Variability:** The APIs provided by Meta, TikTok, and Google have different structures, endpoints, and data access limitations, making data retrieval and synchronization complex.
- **Authentication Tokens:** Each platform requires different authentication mechanisms, such as OAuth tokens for Google and Meta, and API keys for TikTok. Managing these tokens securely while ensuring uninterrupted data access is a critical challenge.
- **Data Normalization:** Transforming the data from these varied metrics into a cohesive model requires advanced normalization techniques, ensuring that each metric is weighted and interpreted correctly.

Despite these challenges, the need for a unified data model is critical for media buyers who aim to maximize ROAS. Campaignster, by Dattico, addresses this need by developing a solution that integrates data from these platforms into a single, easy-to-use model.

SOLUTION OVERVIEW



Campaignster’s unified data model was designed with the primary goal of simplifying the process of aggregating, normalizing, and analyzing data from Meta, TikTok, and Google. The solution involves several key components:

Data Aggregation:

- **API Integration:** Campaignster connects to the APIs of Meta, TikTok, and Google to automatically retrieve campaign data. This involves setting up secure data pipelines and handling API rate limits and data access permissions.
- **Authentication Tokens:** Secure management of authentication tokens is essential to maintain uninterrupted data access. Campaignster uses industry-standard practices to manage OAuth tokens and API keys, ensuring that tokens are refreshed as needed and securely stored.
- **Real-time Data Syncing:** Ensuring that data is continuously updated to reflect the most recent campaign metrics.

Data Normalization:

- **Metric Mapping:** The first step in normalization involves mapping similar metrics across platforms. For example, Google’s Clicks might be mapped to Meta’s Link Clicks and TikTok’s Tap Throughs. Each metric is adjusted based on platform-specific definitions to ensure comparability.
- **Weighting and Scaling:** To address the differences in how each platform defines and counts interactions, a weighting and scaling system is implemented. This allows metrics from different platforms to be compared on a level playing field.

SOLUTION OVERVIEW



Data Model Integration:

- **Unified Dashboard:** Campaignster offers a unified dashboard where users can view performance metrics from all platforms in a single interface. This includes the ability to filter, compare, and visualize data in ways that highlight key performance indicators (KPIs) across campaigns.
- **AI-Driven Insights:** Leveraging machine learning models, Campaignster analyzes the normalized data to provide actionable insights, such as predicting which creative assets are likely to perform best across platforms.

Architectural Overview

The development of Campaignster’s unified data model was underpinned by a robust and scalable architecture built on AWS. This architecture includes:

- **AWS Amplify:** Used to streamline the front-end and back-end integration, AWS Amplify provides an efficient way to deploy and manage the web and mobile applications that interface with the unified data model.
- **AWS Lambda:** Serverless functions, powered by AWS Lambda, manage data processing and integration tasks. These Lambdas handle API calls to Meta, TikTok, and Google, process the incoming data, manage authentication tokens, and feed the processed data into the DynamoDB database.
- **DynamoDB:** AWS DynamoDB serves as the primary database for storing the normalized and aggregated campaign data. Its fast, scalable, and serverless nature ensures that data retrieval is efficient and can scale with the increasing volume of data from multiple platforms.

This architecture ensures that Campaignster can securely, reliably, and efficiently handle the data integration and processing requirements needed to deliver real-time insights to its users.

DIFFICULTIES IN DATA INTEGRATION

METRIC DISPARITY: 01

Clicks vs. Scrolls vs. Engagements: One of the most significant challenges was reconciling fundamentally different metrics across platforms. For instance, while Google Ads focuses on Clicks, TikTok’s primary engagement metric might be the number of Scrolls, and Meta often highlights Engagements (likes, shares, comments). These metrics measure different aspects of user interaction, making direct comparisons challenging. To overcome this, we developed a mapping system that contextualizes each metric within a broader engagement framework. This involved creating custom metrics that combine various aspects of user interaction into a single score.

API VARIABILITY: 02

Differences in Data Structures: Each platform’s API has a unique data structure, with different ways of organizing and delivering data. Meta might provide detailed demographic breakdowns, while TikTok focuses on creative performance metrics, and Google offers granular keyword data. Integrating these different structures into a single model required extensive data transformation processes. We developed custom ETL (Extract, Transform, Load) processes to standardize the data into a unified schema.

REAL-TIME DATA CHALLENGES: 03

Synchronization Issues: Ensuring real-time synchronization of data from different platforms presented a significant technical challenge. Each platform has its own API rate limits, data refresh cycles, and latency issues, which made it difficult to provide real-time analytics. We implemented a queuing system that prioritizes data updates based on the platform’s data freshness and importance to the user’s current analysis.

DATA NORMALIZATION: 04

Normalization Algorithms: Creating algorithms that could accurately normalize data across platforms was a complex task. Each platform has its own way of measuring the success of ads, and these are often influenced by platform-specific user behaviors. Our solution involved developing algorithms that take into account these behaviors, such as the rapid consumption of content on TikTok versus the more deliberate interactions on Meta.

OVERCOMING CHALLENGES AND CREATING VALUE

01

SIMPLIFIED DATA MANAGEMENT:

By aggregating data from Meta, TikTok, and Google into a single model, users can manage campaigns more efficiently. They no longer need to spend time manually aggregating and comparing data from different sources, which reduces the potential for errors.

ENHANCED INSIGHTS:

02

The unified model allows for more sophisticated analysis. Users can now gain insights into how campaigns perform across platforms, enabling them to optimize their content strategy in a more informed manner. The AI-driven insights provided by Campaignster are particularly valuable, as they offer predictive analytics that can inform future campaign strategies.

IMPROVED ROAS:

03

By providing a more accurate and comprehensive view of campaign performance, Campaignster helps users to maximize their ROAS. The ability to see which creatives are performing best across platforms allows for more effective allocation of advertising budgets.

CASE STUDY: IMPLEMENTING CAMPAIGNSTER'S UNIFIED DATA MODEL

A digital marketing agency will be using Campaignster's unified data model reported a significant improvement in their campaign performance. The agency managed campaigns across Meta, TikTok, and Google for a major retail brand. Prior to using Campaignster, the agency struggled with integrating data from these platforms, leading to suboptimal campaign strategies.

After implementing Campaignster, the agency will be able to:

- **Reduce Time Spent on Data Management by 60%:** The unified data model automated the aggregation and normalization of data, freeing up time for the agency's analysts to focus on strategy rather than data wrangling.
 - **Increase ROAS by 25%:** By leveraging the AI-driven insights, the agency was able to optimize their creatives across platforms, resulting in a significant boost in ROAS.
- This case study highlights the tangible benefits of using Campaignster's unified data model in real-world scenarios.

Integrating data from Meta, TikTok, and Google into a single, unified model is a challenging but necessary endeavor for modern digital marketing. The fragmentation of metrics and APIs across these platforms presents significant difficulties, but the rewards of overcoming these challenges are substantial. Campaignster, powered by Dattico, offers a solution that not only simplifies data management but also enhances the ability to optimize campaigns across platforms.

By providing a unified view of campaign performance, Campaignster enables users to make more informed decisions, leading to improved ROAS and more effective advertising strategies. The successful implementation of this model, supported by AWS Amplify, Lambda functions, and DynamoDB, demonstrates its value and positions Campaignster as a leading tool for digital marketers seeking to maximize the impact of their advertising campaigns.



Conclusion.



Viktor is a dynamic Data Scientist and Engineer whose comprehensive skill set, educational background, and professional experience make him a standout candidate in the field of data science.

Viktor Melnikov



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