MODERNIZING MEDIA BUYING OPERATIONS

A next-gen media management platform that helps businesses manage their ad spends and media buys across channels and formats.

Overview

We reengineered the client's legacy media management platform to help them keep pace with the evolving market dynamics in the media buying space. The new platform laid the foundation for a future-ready system that improves performance, enhances data reliability, and streamlines operations to help manage ad spends and media buys across media platforms.

Client Profile

A global advertising technology company that provides media planning, buying, and reconciliation solutions to multiple Fortune 500 brands. Their flagship solutions are designed to manage multimillion dollar ad spends and media buys across various media platforms.

Business Requirement

The client wanted to upgrade their legacy media management platform to a modern, scalable system that enhances performance, usability, and integration capabilities. The upgraded platform would support real-time data processing and advanced analytics, while ensuring seamless connectivity with external tools such as finance systems and data sources. It would offer a responsive user experience along with capabilities to scale in line with growing business.

Business Challenges

- High-volume data: The client handles multiple media projects. Often, a single media plan that includes up to 15,000 line items, adds stress to the system's grid rendering and data processing efficiency.

- Real-time sync: The platform required real-time synchronization with external finance systems and research data sources.

- Sluggish APIs: Several APIs had high response times, negatively affecting overall user experience.

- Data inconsistency: Discrepancies between the client's platform and external systems needed constant monitoring and reconciliation.

- Legacy tech stack: The existing system was developed using outdated technology, requiring frequent redesign and modernization.

- Lack of scalability: Constant requests for implementation from the product team, along with performance improvements impacted critical processes such as merging code, testing, and releases.

QBurst Solution

A 60-member cross-functional team that included developers, architects, testers, and DevOps engineers, upgraded the media management platform. The revamped platform connects brands, agencies, suppliers, and ad-tech partners within a centralized workflow across channels. Legacy modules were migrated to Spring Boot, improving maintainability and scalability. Spring Boot was selected for its rapid development capabilities, ease of use, and support for microservices architecture. Additionally, MongoDB was implemented to handle diverse data formats and scalability to ensure a robust database.

Technical Highlights

1. Performance Optimization

Asynchronous Processing: Moved heavy data columns, such as research data, to async calls, reducing the initial grid load time.

Background Services: Restructured services to offload non-critical tasks to background workers, improving UI responsiveness.

Grid Virtualization: Grid components were reengineered to deliver

consistent performance even with large datasets.

2. Monitoring and Corrective Actions

New Relic Integration: Continuous monitoring was set up with New Relic to identify slow-performing APIs.

API Tuning: Performed targeted optimizations on bottleneck APIs (indexing, batching, caching).

Error Detection: Logs and performance traces were analyzed to identify memory leaks and database call overhead.

3. Data Sync and Integrity

External Validation Scripts: Employed automated scripts to compare the client's platform data with finance systems.

Checker Application: Implemented a custom visualization tool to display discrepancies, helping teams resolve data mismatches quickly.

Daily Sync Reports: Auto-generated reports alerted stakeholders about missing or delayed sync events.

Technologies

- IntelliJ IDEA
- Bitbucket
- GitHub Copilot
- JDK
- Maven
- Spring Boot Core
- JProfiler

- Spring Actuator
- ReactJS
- Knockout.js
- MongoDB
- MongoDB Compass
- RabbitMQ
- Karate

- JConsole (JMX)
- Spring Boot Actuators
- Jenkins
- JaCoCo
- SonarQube
- JUnit
- Mockito
- Spring Data JPA
- Hibernate
- Spring Cloud Config
- Selenium
- JMeter
- Amazon Web Services (AWS)
- Docker
- Rancher
- Jira Cloud
- Confluence
- Hazelcast
- Apache Solr
- New Relic

Business Benefits

- **Improved Productivity:** The upgraded platform significantly improved user experience, leading to higher productivity for media planners.

- **Assured Financial Accuracy:** Data integrity across systems ensured more accurate billing and audit accuracy.

- **Enhanced Reliability and Responsiveness:** Intelligent performance optimizations, real-time sync strategies, and comprehensive monitoring made the platform more reliable, responsive, and ready to support enterprise-scale media buying.

- **Ensured Future-proof Capabilities:** The platform became scalable and future-ready after the modernization effort.

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