



Case Study



Building an AI-based AdTech Product to Drive Customised Advertising

Find out how GS Lab builds an AI-Driven Adtech platform centered around consumer data privacy & control.

Executive Summary

Our customer was looking to develop an AdTech platform that would deliver suitable, relevant and customised ads to consumer's while allowing them complete control over their data. The platform would also help publishers and advertisers monitor user activity and draw insights to deliver personalized content to targeted audience segments who would be willing to receive these ads.

They needed a reliable technology partner with proven expertise to help them build this product swiftly and seamlessly in the cloud.

GS Lab's technical cloud domain expertise combined with our in-depth data science techniques of artificial intelligence and machine learning (AI/ML) positioned us as an optimal and reliable business partner for this product development. Our rich expertise in computing, storage, networking, and AI/ML helped our customer build a robust cloud-native application within the stipulated timeframe.

Not only did this result in advanced marketing analysis and in-depth consumer insights through the AdTech platform, but also helped the advertisers optimize their marketing spends.

Key Business Objectives

Traditional AdTech platforms were designed to gather information from consumer and then showcase relevant ads based on this information repository. However, the user lacked any control over their data, neither could they choose the kind of ads they would like to see. Our customer's vision was to create an Adtech platform where users would have more control over data and publishers can have a better ad relevance and ROI.

Our customer's key challenge was to connect the online advertisers to the right set of consumers, thereby creating a steady and sustainable revenue stream for the publisher. Here's a quick overview of the business-critical objectives outlined for this product.

- Build ML models that can continuously enhance ad relevance and delivery
- Drive a seamless API integration with various ad distribution platforms for data ingestion and NLP data generation
- Build an ecosystem for advertisers to communicate more responsively with consumers

Our customer envisioned an AdTech platform where consumers would retain control over their own data, while publishers would be able to pull detailed reports for a better understanding of customer behaviour, ad performance metrics and ROI, and GS Lab was the perfect IT partner to deliver this.

GS Lab's Solution

In line with the customer's business requirement we developed a platform that give consumer's control over the type of content they view - including ads, stories, and data they share. Consumer's would also receive free digital wallets, replenished each time they view an ad on the platform.

They could then use the balance in these digital wallets to purchase fresh content. Consumer's expenses would decrease as they share more details and preferences, allowing advertisers to further customize their ads.

GS Lab's expertise in data analytics, ML/AI architectures, cloud automation and integration, and digital advertising was instrumental in building a scalable solution in the following steps.

Step 1: Platform Technology

GS Lab built a technology platform for both advertisers and publishers within their own product. The platform had following built in features like:

- Demand Side Platform (DSP) to help advertisers make ad-buying decisions
- Supply Side Platform (SSP) to help publishers handle the advertisement inventory and market advertising space
- Ad campaign manager to help advertisers and publishers manage digital campaigns across websites
- Publisher and Advertisers portal to provide intuitive insights and an end-to-end ad management system

Demand Side Platform

- Overall spend
- CTR
- CPA
- Conversion
- Campaign wise spend
- Campaign wise impressions
- Campaign wise CTR, CPA, CPM, CPC, Conversion
- Graphical representation of spend, clicks and conversion

Filters

- Date filters
- Campaign filters
- Advertiser filters
- Real-time research dashboard
- Custom report builder

[And more](#)

Supply Side Platform

- Unique visitors
- Page views
- Ad Blocker Enabled
- Top performing content
- Page views by location
- Sessions by devices location
- Device wise acquisition and behavior data

[And more](#)

We then developed user-centric features with the platform such as:

- Consent Management Platform (CMP) to let the consumer know what data will be collected and gather their consent before using their data
- Survey-based Ads which enable advertisers or media companies to build and customize their single/multi-question surveys. The platform then serves these surveys to the consumer as traditional ads, and captures the survey responses.

Step 2: ML and AI Technology

The critical step was implementing ML/AI technology to build an ad engine that performs hypothesis testing and experiments, data mining, visualization, and metrics generation. With specific and customised data science algorithms, the platform could now execute the following tasks:

- Collect information such as demographics, climate, and the NLP category type of the consumer visiting the page, as well as many more data points for predictive analysis
- Implement advanced data pre-processing and extensive image processing technologies to get heatmaps, utilizing mouse hover data events to verify coordinate impressions, locations, and timing
- Setup a real-time analytics engine for data growing at a rate of 1TB every 35 days

Step 3: DevOps and Cloud Technology

Next, we combined a set of practices and methods to automate the processes between software development and IT operations, and incorporate continuous integration (CI) and continuous delivery (CD) pipelines. This helped quicken the pace of the development processes and ensure they were easy to deploy.

Our goal was to merge all the components into a highly scalable delivery platform that can accommodate various architectural and deployment styles. We deployed the components on a Google Cloud Platform (GCP), which provided us with the following capabilities:

- Containerize applications to scale, secure, and manage the platforms
- Establish a consistent and automated method to build, package, and test applications and deliver quality applications and code
- Monitor and alert solution with a single dashboard view for high-level components
- Design custom data ingestion and processing pipeline
- Auto-scale and auto-downsize infrastructure as per the load
- Support multi-regional deployment and geolocation-based routing to scale further across the globe.

GS Lab has completed developing and deploying the end-to-end cloud-native technology that has transformed the product lifecycle in the manner of how requirements are collaboratively accepted, coded, tested, and deployed.

Delivering Tangible Business Benefits



Reduce Costs



Data Control & Privacy



Scalable Architecture

GS Lab's scalable and seamless product development and deployment were instrumental in fulfilling the customer's business goals within the required timeframe. Additionally, more than 30% of publishers in the United States have already signed up for this platform.

Key benefits included —

Reduced costs: The cloud-native architecture and containerized application enabled us to utilize system resources better and reduce overall infrastructure and operational costs.

Data control and privacy: The platform gave users complete control over their data, providing publishers with a cooperative audience which was ready to view ads, resulting in better ROI.

Scalable architecture and faster delivery: The container architecture allowed us to scale the application as per the requirements, while automation of DevOps and CI/CD pipelines helped us deliver the product faster.

Comprehensive performance insights: The ML-based ad engine empowered advertisers and publishers to get detailed insights into consumer behavioural patterns, enabling them to predict, measure results, and develop advanced calculations in a much better way.

Great Software Laboratory (GS Lab) has been the technology partner of choice to 150+ organizations across North America, Europe and Asia-Pacific for over 17 years. Leveraging our expertise in 130+ tools & technologies, we have created 350+ 'first-of-its-kind' solutions to real-world problems. Our 'Beyond code' philosophy ensures that we not only push boundaries of existing technologies but also try out newer problem solving approaches to keep our customers one step ahead of their competitors. Our global team of 1500+ employees is adept at creating 'real value' at each stage of the customer growth journey, right from proof-of-concepts to completely scaled up products. For more information about our solutions & offerings, please visit www.gslab.com

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