CASE STUDY

Empowering Location-Based Retail Engagement for DealPoint Geofencing Web App & Custom API Development

thenaworks

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Client Overview

DealPoint is a platform built to help local businesses thrive by making customer engagement smarter, simpler, and more targeted. With a mission rooted in community, DealPoint empowers merchants to launch localized campaigns and deliver hyper-relevant promotions using real-time location data. By combining intuitive design with deep analytics, the platform enables businesses to build stronger loyalty while optimizing every customer interaction.

Project Overview

DealPoint saw a clear gap in how traditional promotions were failing to drive meaningful in-store engagement. Most campaigns were either too generic or mistimed; missing the opportunity to influence customers when it mattered most. To transform how merchants reach their audiences, DealPoint partnered with Athenaworks to develop a location-based offers engine powered by geofencing.

The goal was ambitious: allow merchants to create geographically bound offers that would automatically trigger when a customer entered a store's vicinity—driving foot traffic, increasing redemptions, and personalizing customer experiences in real time.

Key Technologies Used

- **Backend Framework:** Laravel 10.10 (PHP) for web application logic and custom API development
- **Mobile App Framework:** React Native for cross-platform mobile support (iOS and Android)
- **AI Integration:** OpenAI services for automatic generation of offer descriptions
- **Mapping & Geofencing:** Google Maps API for real-time location services, mapping, and geofence implementation
- **Custom Logic:** Latitude/longitude-based geofence calculations using Google Maps data, including radius-based validation to ensure precise location targeting

Timeline & Milestones

Phase 1:

Geofencing, offer delivery, and location-based notifications completed and tested.

Phase 2:

Added AI-generated content, loyalty and reward programs, and advanced reporting.

Next Milestone:

Full production deployment, followed by future phases focusing on scalability and analytics

Team & Execution

- Project Manager
- Backend Developer (Laravel/PHP)
- Mobile Developer (React Native)
- UI/UX Designer
- QA/Test Engineer
- Server Administrator

Challenges

Before our engagement, DealPoint's platform lacked the precision tools needed to connect promotions to physical presence. Existing systems were unable to:

- Deliver offers based on exact store locations
- Personalize content using customer proximity
- Provide real-time, geolocation-based engagement data
- Automate promotional workflows to reduce merchant effort

There were also technical hurdles. The system needed to process latitude and longitude data with high accuracy, remain compliant with mobile platform privacy rules, and sync location logic seamlessly across backend and mobile environments.

Our Solution

To meet DealPoint’s goals, Athenaworks engineered a geofencing solution embedded in a cross-platform application stack:

- Backend: Built on Laravel 10.10 (PHP), with custom APIs for geofence creation and offer management
- Mobile: React Native-based iOS and Android apps delivering location-triggered experiences
- Mapping & Geofencing: Google Maps API integration for accurate geolocation boundaries and visual mapping
- AI-Generated Content: OpenAI integration to auto-generate promotional copy, helping merchants launch campaigns faster

Our team adopted an API-first architecture, enabling scalable, reusable services for offer targeting. Geofences were dynamically created using lat/long data and radii—letting merchants define boundaries for each store. When a user’s device entered one of these zones, the app triggered a relevant offer in real time.

Implementation

- Dynamic Geofencing: Support for multi-location offers, with real-time sync between backend and mobile
- Performance & Scalability: Designed to handle simultaneous geofences across users without latency
- Cross-Platform Quality Assurance (Manually): The solution was thoroughly tested across iOS and Android devices, ensuring consistent performance, location accuracy, and compliance with App Store and Play Store location handling requirements—critical for mobile reliability at scale
- Privacy by Design: Compliant with App Store and Google Play policies for background location access and user consent

The project was delivered in two phases. The first focused on geofencing, mobile offer delivery, and real-time notifications. The second added loyalty programs, reporting features, and AI-assisted content tools—laying the groundwork for a robust customer engagement ecosystem.

Strategic Readiness & Business Potential

With the geofencing and campaign automation infrastructure now fully implemented and tested, DealPoint is positioned to enter the market with a powerful, location-aware engagement engine. While the platform has not yet launched publicly, the product is launch-ready, with all critical features in place for a high-impact debut.

What’s Now Possible

- Hyperlocal Targeting: Merchants can define precise geofenced zones and trigger offers in real time based on customer proximity.
- Automated Campaign Execution: Offers are dynamically delivered with zero manual intervention, reducing merchant overhead.
- Smarter User Experiences: App users will receive relevant, location-based promotions, increasing the likelihood of conversion and store visits.
- Custom Loyalty Tools: A modular reward system supports personalized incentives and retention strategies.
- Frictionless Scalability: The system is built to support thousands of geofences simultaneously with no performance loss.

What We Engineered for Success

- Full Stack Ownership: End-to-end architecture across Laravel (backend) and React Native (mobile), built for cross-platform reliability.
- Precision Logic: Geofencing accuracy refined with radius-based tolerance to account for GPS drift on mobile devices.
- Manual QA Across Devices: Rigorous cross-device testing ensured location triggers worked reliably across all major OS versions and hardware.
- Privacy-First Compliance: Location handling aligns with App Store and Play Store policies, including background permissions and user consent.

AI-Enabled Merchandising: Integration with OpenAI allows merchants to auto-generate compelling offer copy, accelerating go-to-market readiness.

What's Next

With development phases completed, DealPoint is preparing for public rollout. The upcoming launch phase will focus on:

- Merchant onboarding and beta deployment
- In-market testing of offer effectiveness and engagement metrics
- Expansion of analytics and reporting for merchant insights
- Enhancements like tiered promotions, audience segmentation, and multi-offer filtering

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