CASE STUDY

Next-Gen Fleet Management Application

About the Company

The company provides innovative technology solution for school bus fleet tracking, safety, and optimization. The company's business mission is to ensure safe, efficient and convenient bus-riding experience for stakeholders such as school administrators, bus drivers, students, and parents.

Technology Stack

- ✓ Cloud Architecture
- ✓ LAMP Stack – Linux, Apache, MySQL, PHP
- ✓ Android, SQLite
- ✓ HTML 5, CSS3,
- ✓ JQuery, JQuery Mobile
- ✓ Google Maps
- ✓ Open Street Maps
- ✓ PayPal Integration

Business Need

The company wanted to build a solution that would make the school bus-riding experience safer, efficient and convenient for parents & bus riders; and improved management and operational efficiency for fleet managers, dispatches, call center operators, and routing administrators. The solution would consist of web and mobile applications that effectively track buses, and help schools manage their bus fleet, large or small, at an affordable cost. It also wanted a mobile app to help parents and their bus riders know precisely when to arrive at their bus stop. It should help the bus drivers with scheduled and alternate routes and display information of students to be picked up or dropped in each bus stop.

Solution

Trigent helped the client to translate their vision into reality by providing full-scale application development and a set of managed services with a shorter design-to-deploy cycle to release the product. An important aspect of Trigent's value proposition was to provide unique experience and capabilities that were not available across other competing products. Trigent helped develop these unique experiences through complex, predictive real-time algorithms that increase the safety and efficiency of bus fleets and allow bus-riding households to know precisely when their bus will arrive.

Trigent built a cloud-based unified technology solution consisting of mobile and web applications that can be used by school administrators, drivers and parents.

The web application is optimized for the administrators use and the Android application for parents and drivers.

The system operates with low operational cost and uses low-cost tablet devices that do not need a cellular network, instead uses Wi-Fi network at schools and depots.

Features

- SaaS-based solution with the ability to customize or delivered as a hosted solution
- Real-time tracking of bus movement on maps that can be viewed on both PC and mobiles devices
- Bus route tracking with diagnostics
- Bus route analysis and modeling
- ETA for pickup and drop points
- Effectively tracking driver work schedule
- Route information and navigational assistance to drivers – Real-time navigation using maps to reach next bus stop
- Ability to automatically register students' entry and exit of the bus through RFID readers and GPS locations without impacting the load and unload process
- Ability to work with reduced functionality while in offline mode
- Online payment facility for subscriptions

Benefits

The application allowed the client to expand and grow their business with zero or minimal operational constraints. Other benefits and results include:

- The business grew from just a couple of districts to 15 districts within short time
- With high reliability and ease of use, user adaptation and satisfaction improved many fold
- Zero cost on cellular data usage - The application uses only the Wi-Fi points available in the school or bus depots
- Enhanced software security - Complete server controlled information flow to each tablet using IMEI (International Mobile Equipment Identity)
- Information traceability - Track bus movement by accessing data from the tablet
- Increased accountability - Driver login/logout information is notified to depot managers
- Leadership position - The unique and innovative application has established the company's leadership position in the area of school bus fleet management.