

IOT Management Tool Delivers Analytics and Self-Service to Global Manufacturer



CHALLENGE

A global gas station equipment manufacturer that's also responsible for customer service, such as the monitoring of gas pumps, transaction information, and providing analytics and security updates, was experiencing an increased demand of visibility into these systems. To provide better insight into these systems, the customer realized it needed a comprehensive management solution to keep track of these devices. This solution needed to offer:

- Proactive real-time monitoring
- Automated media distribution (such as news, advertisements, weather information, etc.)
- Remote firmware upgrades
- Advanced analytics

The customer also provided its customers with help desk support, field services for parts and warranty requests. If a pump needed to be serviced, a technician would request access from the customer. This was normally done through a phone call to the Help Desk. The authorization process slowed the technician's ability to provide maintenance to the system. Likewise, requests for parts and warranty information were normally conducted over the phone or via email.

The customer wanted to empower technicians and customers with a self-service portal that would automatically respond to help desk support, authorization requests and performance inquiries.



SOLUTION

Red River worked closely with the customer to map out the necessary services for a remote management tool that emphasized visibility. Outside parties such as customers, gas station managers and service providers needed real-time access to critical monitoring information. The project started out with a limited budget and only a few initial features. To support functionality, the Red River team knew that any management platform must seamlessly integrate future features during and after development.

To keep track of more than 120,000 devices world-wide, the team leveraged the Azure IoT cloud platform. In addition, a variety of cloud platform-based services, such as Azure Active Directory for Single Sign On, Azure SQL for database and global redundant blob storage for file storage were integrated to provide the best performance out of the box. This was done without incurring significant costs on a custom design or development for scalability and reliability.

Red River designed and developed a Customer Portal application as part of the overall IoT solution, to allow customer self-service capability for their gas stations. The portal allowed customers to

- Register and configure gas stations and devices
- Monitor gas station and gas pump status and view transactional data in near real-time
- Receive alerts on abnormal state and trigger dispatches to fix the gas pumps in the field
- Locate gas stations on an ESRI ArcGIS map
- Generate reports on fuel sales and transactions
- Manage daily promotional video and image uploads and distribution to gas pumps

Our App Development Capabilities

- Proactive real-time monitoring
- Architect, develop and maintain enterprise applications
- Deliver complete stack experience, from the application to the web services and the database layer
- Web and mobile application testing and development
- DevOps consulting services
- Docker assessment and implementation
- Docker training, maintenance and support
- Simplified cloud migration



RESULTS

By leveraging the Azure IoT cloud platform, Red River designed and developed a remote device management solution in the cloud that connects with more than 120,000 devices at over 20,000 gas stations globally. The customer now has remote access to all of its gas pumps, point of sale systems, forecourt management systems, and tank gauge systems. The remote connectivity allows the customer and its customers to collect data from the fuel transactions and operations, remotely upgrade the device firmware for enhanced functionality and security, and distribute engaging media content and advertisements to the pumps.

The near real-time data from the devices allows for continuous monitoring of gas station operations as well as data aggregation to build advanced analytics. Now, alerts can be triggered for malfunctioning or worn out devices, so that dispatches can be proactively deployed to address any operational issues.

Their self-service portal alone saved the customer Fueling about 10,000 maintenance calls per month from customers and technicians. Since launching the web portal and their remote management platform, the customer has greatly improved customer satisfaction and internal operational efficiency throughout their gas stations.



ABOUT RED RIVER

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