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
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