CASE STUDY

IoT FOR REMOTE DEVICE MANAGEMENT

Fortune 100 financial institution saves $2M annually by eliminating 24/7 staffing in remote sites, and achieves a higher level of reliability and accuracy for IT support services, by implementing Modius' IoT solution for remote management.

INTRODUCTION

The idea of the Internet of Things has been around a lot longer than the term "IoT". For over a decade, Modius has been connecting to devices at the edge of the network, collecting, normalizing and consolidating data points from thousands of these assets and turning this data into actionable information using built-in analytics and automated processes.

Since 2004, Modius has been a leading provider of solutions for the analysis of data from geographically dispersed devices and equipment to help organizations make better operational decisions and improve the quality of service for these remote assets. When a Fortune 100 financial services company needed an IoT solution for their remote asset management, they turned to Modius and the OpenData application to provide a complete solution from a company that has years of experience managing devices at the edge of the network.

This San Francisco based financial services company is one of the nation's largest, providing brokerage and related services to over 8 million active accounts. The technology environment is diverse and complex, with in-house and vendor supported hardware ranging from mainframes, distributed systems (e.g., Unix, NT, and Netware), network equipment (e.g., routers, switches, and firewalls), disparate supporting infrastructure (e.g., power and cooling), and diverse management and control systems.

"Data collection and monitoring for remote asset management is a viable first project for many companies considering IoT solutions. The real innovation starts when you have enough data to reliably predict outcomes and automatically adjust on the fly; that's the promise of IoT"
Craig Compiano, CEO, Modius Inc.

COMPANY PROFILE

COMPANY **MODIUS, INC**
INDUSTRY **TECHNOLOGY**
COUNTRY **UNITED STATES**
WEBSITE **WWW.MODIUS.COM**

SOLUTIONS AT A GLANCE

- Internet of Things
- Big data
- Remote asset management

BUSINESS NEED

This financial services organization needed "around the clock" centralized management of its geographically dispersed network of IT equipment and infrastructure. They needed to leverage their staff to cover unmanned sites 24x7 without adding additional personnel.

SOLUTION

OpenData, an IoT-based remote asset management solution from Modius providing centralized monitoring and management of remote infrastructure. Modius collector software running on processors like the intelligent Dell Edge Gateway 5000 collects data at the edge of the network, processes it, and transports it to the OpenData application for further analysis. This centralized information is easily integrated with other applications to support automated processes for superior control and management of remote facilities.

UNIFYING A HETEROGENEOUS ENVIRONMENT

Over the years, rapid corporate expansion, a combination of leased and owned facilities, and a hybrid IT environment resulted in a very diverse mix of data centers, equipment and supporting software for this client. When the client began their search for a remote asset management solution, they had a portfolio of fifteen core data centers and smaller satellite data centers, each running one or more Building Management Systems (BMS) for monitoring and controlling the supporting infrastructure. This mix of hardware and software, combined with the distance between these sites was significantly impacting the client's ability to provide timely support without adding more personnel.

Craig Compiano, President and CEO of Modius, explains the client's issue. "With this mixed environment, the client had no central source of data for the 15 data centers and required a different expert in each site to manage the equipment. Providing 24/7 on-site support for these locations was a significant on-going expense."

IOT, A PERFECT FIT

Managing this geographically dispersed environment of mixed equipment is perfectly suited for an IoT platform like OpenData. "We installed OpenData collector software in each site and configured it to collect, normalize and centralize data from the existing legacy equipment and new sensors installed at each site. These OpenData collectors can run on existing IT hardware or dedicated IoT gateways like the Dell Edge 3XXX or 5XXX series, process data at the edge, and pass this information to the centralized OpenData application for analysis and action. All the important data from the fifteen different sites was consolidated into a single screen at the NOC, and alarm and alert conditions were passed to appropriate operational teams. Furthermore the normalized information could be used for better capacity planning and predictive maintenance efforts" says Compiano.

Assets in these locations that were not previously being monitored by the local applications were easily added to OpenData Collector providing a complete picture of the health of this remote infrastructure. This IoT solution for data collection and monitoring at the edge allowed the client to forego adding additional personnel in these remote locations, and centralize management expertise for this mission-critical infrastructure.

UNEXPECTED BENEFITS

Remote asset management was the primary objective for implementing OpenData, but it wasn't the only benefit achieved by the client. The granularity of data available from the OpenData collector provided the client with insight and knowledge beyond the capabilities of the existing applications. These additional capabilities are summarized in the table on the following page.

BENEFITS

- Financial company **saves $2M annually** by leveraging existing IT service personnel to cover 24x7 support of remote data center facilities.

- **Multiple catastrophic failures were averted** based on OpenData predictive analytics and alarm and alert functionality eliminating costly service interruptions.

- **Reduction in energy costs** through automated analysis of operational and efficiency metrics (i.e., continuous commissioning) **saves the company $600K annually**.

- Automated and pre-schedule operational reports **saved the company over $100K annually** by eliminating the man-hours associated with manual report generation.

- **Improved MTTD and MTTR metrics** based on alarm and alert escalation for monitored devices with less staff turnover.

- **Deferral of new facility build-outs** by using actual load data for power capacity management calculations providing higher utilization of existing power infrastructure.

CAPABILITY	DESCRIPTION	EXAMPLE
Power (Load) Management	Automated and continuous measurement of power infrastructure	A critical business application went off-line intermittently and the IT team suspected there was a problem with the supply of power to the server. Analysis using OpenData showed that the RPP was supplying power consistently and the problem was quickly isolated to the server hardware.
HVAC Monitoring	Automated and continuous measurement of Cooling infrastructure	In a co-lo environment, the monitoring of a customer's IT equipment detected a server temp issue. The co-lo operator claimed that the SLA was being met, but OpenData was able to identify the point in time when the CRAC unit started failing and the provided trending data could verify when remediation was completed.
Environmental Monitoring & Alerts (Temp. & Humidity)	Automated and continuous measurement of Environmental Sensors	Combined with PUE and other operational metrics, detailed temperature measurements combined with power measurements allowed for precise fine tuning of environmental conditions, an increase of temperature set-points and resulting savings and better conditioning of the space.
Energy Management	Automated and continuous measurement of power infrastructure	Previously the BMS was being used for PUE reporting in a shared 4 MW facility. However, there were many known errors in the accuracy of the calculation due the complex environment so no significant efficiency projects were undertaken. Using OpenData and the Modius Field Service Team, an accurate baseline was created and efficiency efforts could be undertaken.
Automated Report Generation	Automated and pre-scheduled standard operational reports to inform all stakeholders with no recurring staff prep time	Load distribution analysis for redundancy and capacity was performed manually on a monthly basis. Automated reporting from OpenData can now supply accurate power management and capacity planning for facility management. Available redundant capacity analysis is fully automated.

ONLY THE BEGINNING

The consolidation of data from multiple OT applications into a central unified view was only the first step in the client's vision of using the IoT capabilities of OpenData to improve service delivery in their 15 data centers. By adding OpenData collectors and the processing power of the Dell Edge gateway, the client can unlock new streams of data from previously un-monitored equipment to automate processes in real-time. For example, server processor load data can be used to predict the need to automatically adjust HVAC settings for more efficient cooling.

"Data collection and monitoring for remote asset management is a viable first project for many companies considering IoT solutions," added Compiano. "The real innovation starts when you have enough data to reliably predict outcomes and automatically adjust on the fly, that's the promise of IoT".

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