Green Gas Company Monitors Nationwide Distribution Network From a Single IoT Dashboard

- **Industry:** Oil & Gas
- **Client:** Major Indian Gas & Energy Provider
- **Region:** India
- **Solution:** BBX VISIBLE IoT Platform

BACKGROUND

A major Indian green energy provider promoted emission reduction and enabled industries to switch from conventional polluting fuels to eco-friendly green fuels in a capital-efficient manner. The company provided clean energy for customers, partners, and associates all across India based on a wide range of economical green fuels (LNG, CBM, Bio Gas, etc.) to the point of consumption, while minimizing capital expenditure in the switch to green energy.

The client wanted to implement an IoT monitoring and analytics solution to manage their nationwide distribution network and monitor the refilling stations remotely and in real-time.

THE CHALLENGE

Before the implementation, real-time data on the quantity of gas available at the filling stations of its distribution network throughout the county was not available to the client centrally. They had to rely on an offline process to update the pricing of

LNG at different sales points. While hundreds of sensors had already been implemented and were continuously spewing environmental data on temperature, pressure, gas level inside the tanks, leakage detection, and many other parameters, the sensor data was only available locally at the filling stations.

The client wanted the solution to address three problems altogether: remote monitoring of gas levels to automate refilling, remote changes of local prices, and aggregation of all local sensor-based data from the filling stations on a single dashboard, including automated alerts and notifications.

THE SOLUTION

Throughout the implementation phase, the previously installed local analog and digital sensors at the filling stations were connected to a controller device (PLC) that acquires all data from the local sensors. A gateway then transmitts all data from this PLC to the cloud using the Modbus protocol. Once processed and aggregated, the data is sent to the cloud IoT platform BBX VISIBLE based on a secured MQTT protocol.

The gateway was programmed to allow retrieving sensor data from different types of sensors of different makes and models. HMI (Human Machine Interface) digitization was done to support Web SCADA features for the dashboard. And finally, a digital twin of the processes was created to design an intuitive user interface for the client on BBX VISIBLE.

Operators now have a single dashboard displaying all the processes, all the PLCs and sensor data, and all required
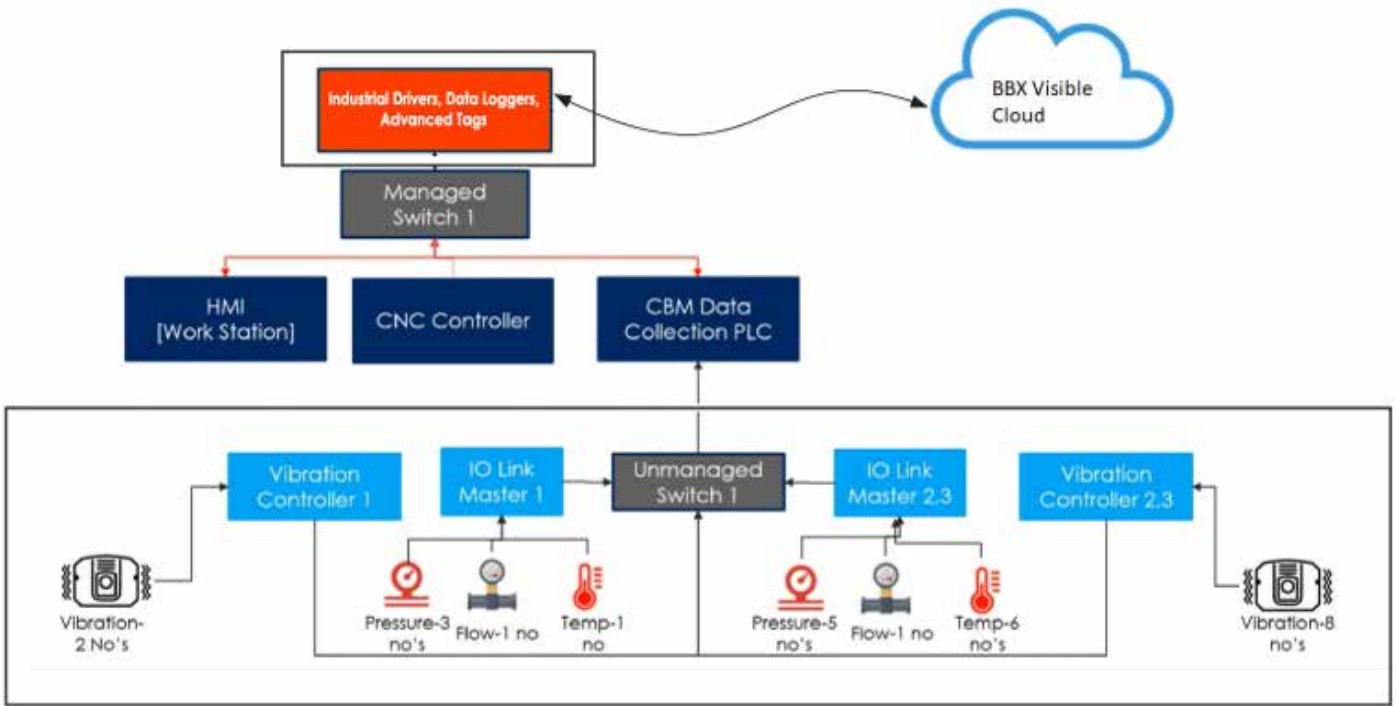
alerts and notifications. At the IoT platform, the data is now stored, processed, and continuously analyzed to trigger alerts or notifications. Reports can be generated in real-time and the BBX VISIBLE dashboard provides complete visualization of real-time data of all connected sensors and PLCs.

RESULTS

The solution has delivered exactly what the client needed to remotely monitor and automate their processes. They now have complete control over the filling station operations, enabling them to update LNG prices as necessary. With real-time data available on the dashboard, inventory management and distribution have improved, leading to cost savings. Historical data is readily available for future analysis. Alerts generated by the PLC are tracked and managed more effectively. Sensors that historically had a higher fault rate are now monitored and repaired promptly, which reduces downtime.

LEARN MORE   BLACKBOX.COM