

Centralized Data Aggregation Platform for Manufacturing IoT Industry

An industry giant providing a full range of innovative solutions for controlled dispensing equipment, vending machines, cashless systems, software, and wireless communications.



OBJECTIVES

The objective was to develop an IoT-based data aggregation platform to analyze, monitor, and manage dispensing equipment; vending machines; cashless systems for effective asset and inventory management.

CHALLENGES

- Lack of a centralized real-time data aggregator platform to manage multiple devices.
- Inability to support multiple customers and non-connected assets with a huge amount of data and users.
- Difficulty in managing online and offline transactions on a cloud-based infrastructure.

PROCESS

- A centralized IIoT platform was designed and implemented that could manage multiple device types with real-time data and support multiple customers.
- The platform was implemented on a robust cloud-based infrastructure to seamlessly manage online and offline transactions.
- Features such as device management, locker facility, admin portals, user registration, machine management/transaction, consolidated reports, and event triggering was implemented.
- A mobile vending app for the end-user to interact with connected vending machines in an online to offline environment.
- The mobile app also includes features such as employee authentication, hierarchy selection, POG (Planograms) view, multi-dispense, check-in/check-out, and transactions log.



RESULTS DELIVERED

- The client could effectively manage multiple devices, and monitor real-time data on a centralized IIoT platform.
- The platform supported multiple customers and devices while managing large volumes of concurrent users and data.
- Various features were implemented including virtual tracking reports, customized lockers with adept security, third-party integrations, product alerts, and much more for smooth and connected asset management.
- The client was able to achieve real-time monitoring through centralized data management, increase efficiency, and reduce costs along with robust security.

TECH STACK

- **Asp.net core MVC (Web App)**
- **Asp.net core (Web API)**
- **React (VT Application)**
- **Databases: SQL Server, MongoDB**
- **Cloud: AWS**