Charging Ahead with Remote Monitoring and Reporting

PEP Stations®

PEP Stations is a leading Plug-in Electric Vehicle (PEV) charging- station company based in Detroit, Michigan.

PEP's chargers are commercial, dual level 2 electric car charging stations with an architectural design and a flexible operating model that requires no subscriptions for electric vehicle charging.

The challenge

The parent company of PEP Stations is a commercial real-estate-building owner and commercial architecture company. A prospective resident of one of the multi-tenant, company-owned buildings is a supplier for the General Motors Volt. The supplier was looking for a commercial space, and they needed access to charging stations where their employees could charge their Volts.

"We looked at what the purchase options were for charging stations, but in 2009 there wasn't much to choose from. We didn't like the design and form factor of any of them. We also didn't like the operating model they offered, which was a subscription-based, revenue-sharing model," said Brady Blaine, VP of Business Development at PEP Stations. "So being an architectural group, we had the skill set to design our own. We also had the unique perspective to base that design around the building owner's requirements of durability, safety, ADA compliance, and usability."

This diversification from the core business utilized the architectural firm's skill sets in the design and was supplemented with third-party expertise in areas such as engineering, manufacturing, sales and distributions, and service and monitoring.

From day one, a key aspect of the station design was the ability to monitor the charging stations. Since they could not afford to have their tenants unable to drive their cars home because the station didn't work, building owners needed to know when there was an issue. Larry Granger, CIO of PEP Stations, saw the working model of the charging station being similar to an ATM.

"I went to a friend of mine who is the CIO of a large bank with a network of ATMs and asked him who services them and how they are monitored," said Granger. The bank's CIO explained that the ATMs are serviced by Diebold®, who uses PTC® Axeda® software to monitor the performance of the devices. Larry approached Diebold to see if they would be interested in servicing the charging stations. He then decided to use PTC Axeda software technology inside the stations to provide the monitoring and reporting aspects of the stations.

"We were looking for a cloud-based machine-to-machine monitoring application," said Granger. "We liked the features and functions we saw in PTC Axeda software with regard to customers. What really pushed us over the edge was the fact that our nationwide service and support partner was also using the platform."

The solution

PEP Stations offers a service called PEPAdvantage™, an annual service agreement for building owners including monitoring, software upgrades, and reporting on utilization and service. The machine data is automatically sent from the charging stations directly to PTC Axeda software and is then monitored by technicians at PEP Stations.

The company wanted to design a trouble-free device for their customers so that PEP Stations would know there was a problem before the customer was impacted. PEP service personnel use the remote connectivity provided by PTC Axeda software to log into the station and diagnose the fault and then, when possible, use the software delivery options of the platform to remedy the issue. Should a fault occur that is not repairable remotely, their service partner is dispatched to the site to repair the station. With the knowledge supplied from the remote diagnosis, an accurate and speedy first-time fix is ensured.

Machine data that is delivered to the cloud by this station includes aspects such as:

- Time of connection/disconnection of vehicle
- Start/stop time of charging
- Energy utilized
- Temperature
- Current
- Voltage
- Any faults that occur

Another advantage for PEP Stations customers is the ability to receive reports on the utilization of the equipment. In most cases, this is a monthly report showing the number of charging sessions, how much electricity was provided, and how much revenue was earned. These reports enable the clients to look at system usage and see where more stations need to be installed when the existing ones reach their maximum utilization. If necessary, some clients will set up their system to receive reports on a more frequent basis.

We wanted to design a device that was trouble free for our customers so that we would know there was a problem before they did."

Brady Blain, Vice President of Business Development, PEP Stations

The future

The commercial charge station market is driven by the number of electric vehicles (EV) on the road. More and more building owners are seeing tenants, customers, and employees looking to charge their electric vehicles. PEP Stations views their charging stations as part of the building infrastructure; another amenity that needs

to be provided. From the beginning of the construction, these stations need to be constantly monitored to ensure a trouble-free experience for all of the tenants and users of the buildings.

The U.S. Department of Energy estimates that one million electric vehicles will be on the road by 2017, leading to a growing demand for facilities that provide EV drivers with a place to easily charge their cars. More building owners will be looking for additional incentives to attract tenants into their spaces, and providing charging stations will create an abundance of open opportunities for the owners and for future tenants.

"There are so many advantages of PTC Axeda software. I'd say we're just getting started with the capabilities right now," Granger said. "We have plans to add new features, including tracking the utilization of the stations and proactively increasing the number of units based on a client's increasing demand. The outcome will be the expansion of data analytics from a purely service aspect to include a sales enhancer."

Challenge

To provide a trouble-free PEV charging station so that PEP Stations could proactively address problems before their customers were affected.

Solution

PTC Axeda software enables PEP Stations to provide real-time system diagnostics for proactive service and support, and accurate and timely utilization reports.

Results

Approximately 25% of all issues are resolved remotely.

For more information, visit the company's website at **www.pepstations.com**

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