GO2POWER

Improving Systems Management & Fueling Customer Loyalty with Connected Power Systems

The Challenge

> Building an IoT solution requires connecting data sources in microcontroller-based, embedded systems to the Internet
> Internal development team lacked specialist knowledge sets needed to agilely develop IoT solution
> Maintaining reputation as being an innovator in the central inverter market

The Opportunity

> Customers prefer systems that can be accessed and maintained with ease and speed
> Operational efficiency can be improved by connecting data silos
>Improving efficiency of systems maintenance
> An industry leading technology can enable sales network to surpass targets

Solution

> Real-time System Management
> Comprehensive Web Reporting
> Delivering Data to Customers

Why Sempercon?

> Embedded design background
> Experience interfacing microcontroller-based systems
> Deep web and mobile experience
> Collaborative advisory process

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Go2Power is a power electronics development company committed to satisfying their customer's current and future product needs. Products are what they build, but solutions are what they provide. Although their product team had developed a reputation of designing and manufacturing custom tailored, original hardware solutions, their internal product team lacked the technical expertise needed to address the anticipated demands of their customers.

An Isolated System

Emergency Lighting Inverter systems, often referred to as a "UPS (Uninterruptible Power Systems) for emergency lighting", contain large batteries that switch on automatically during a power failure. Federal and state UL certification requires that all commercial buildings provide emergency lighting for all exits, which must be tested in order to insure defined illumination levels are met and these systems can deliver electricity for at least 90 minutes after a power outage. Besides constantly **monitoring** power conditions and **managing** battery charging, Emergency Lighting Inverter systems are also required to provide **system test** capabilities and **save logs** of all events and alarms.

These systems typically are designed as isolated modular cabinets, with microcontroller-based control units storing data locally in limited solid state memory (typically 64MB). The user interface is limited to a small LCD display, a number of multiplexed buttons, and various colored status/ alarm LEDs.

The only way users could initiate tests, display events, view alarms and monitor other system data was by physically interacting with the system's LCD display. Go2Power recognized that their enterprise customers, who valued convenience and efficiency, would rather invest in a hardware solution that enabled them to quickly manage their UPS Emergency System via the Internet, which was most convenient to them.

"We always try to put the needs of our customers first and anticipate their demands. Customers now expect to have easy online access to their systems. A fixed, display only interface isn't enough anymore; customers want the convenience and benefit offered by our cloud-connected interface."

The Case For Connectivity

Internet-enabled apps and systems are becoming critical to businesses' operational efficiency goals. Go2Power understood that it was only a matter of time before their customers and prospects demanded the same accessibility, ease of use and added value from their emergency lighting system. Thus, they began outlining specifications to open up their systems to the Internet.

Opening up the data silos of their systems when isolated in the field also had the potential to enhance Go2Power's internal efficiency. By Internet-enabling their hardware, Go2Power would be able to rapidly collect and respond to their hardware's data streams. With a smart Emergency Lighting Inverter system, they could automatically run service tests, remotely troubleshoot field issues without sending a factory tech onsite and develop new features that couldn't even be imagined when the entire system terminated on a small LCD display of the system's front panel.

"By connecting our emergency lighting equipment to the web our technicians can now access all of our systems remotely and diagnose problems without actually having to go on-site. Our field service team can now work more efficiently than we could've imagined"

Enhancing Business Model Delivery

Go2power is establishing themselves as a leading Emergency Lighting Inverter systems provider with a Internet-connected hardware solution that offers:

Real-time Systems Management. Go2power's web portal provides real-time access to all system status information, meter data and alerts. Customers can now login to a web portal where they can review all equipment that they have in the field, view a dashboard confirming system status in real-time, and focus on data specific to any individual piece of equipment.

Comprehensive Web Reporting. Web dashboard provides full data reports complete with graphing visualizations. Go2power's customers can now save time conveniently generating required reports and monitoring the temperature and health of backup battery systems.

Delivering Data to Customers. Critical data alarms are pushed from Go2Power's hardware device to customers as email and SMS alerts alerting them of battery issues, lighting issues and even dead bulbs.

Results

> **Delivering on marketing and sales promise** of providing innovative solutions

> **Deepening relationships with customers** by incorporating their feedback into new feature releases and upgrades to Emergency Lighting Inverter system's web interface

> **Achieving cost savings** with newfound ability to remotely service hardware systems

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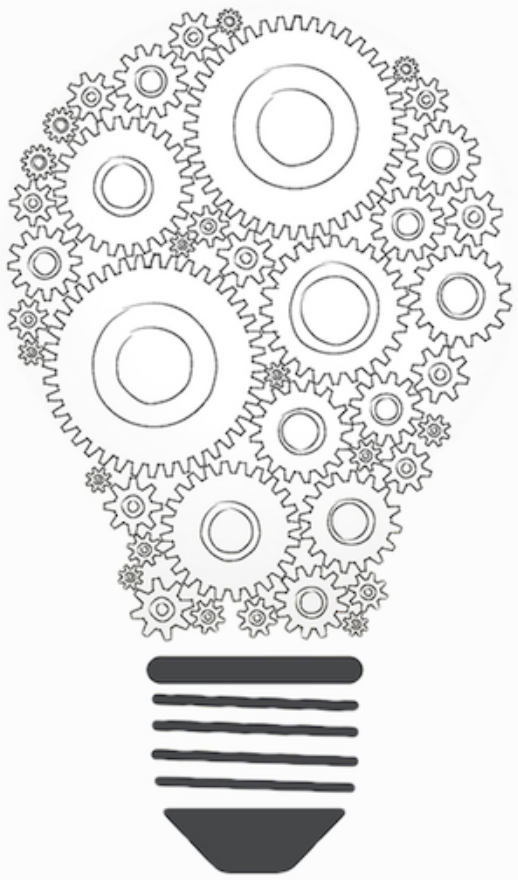
The path to building a cloud-connected Emergency Lighting System



Define and design

Sempercon assisted Go2Power's leadership on translating vision of simultaneously improving customer experience and business processes into an Industrial Internet solution. As part of this process, Sempercon consulted Go2Power on matching their hardware design with the best-suited cloud platform, and defining a multilayered web management interface.

Building Bridges for Embedded Data Sources to join the Internet

A dedicated consultant worked closely with Go2power's internal development team on building connections that would enable data generated in microcontroller-based system to connect to the Internet.

Development

Developed web application on-time, following instructions of assigned project coordinator.