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## Nube

### **Nube Improves LP Gas Consumer Experience and Gas Tank Refilling Efficiency - A Sierra Wireless® Smart Metering Application**

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### **Nube Improves LP Gas Consumer Experience and Gas Tank Refilling Efficiency**

#### ***A Sierra Wireless® Smart Metering Application***

#### **CUSTOMER CRITICAL CHALLENGE**

- Due to the lack of access to the liquid petroleum (LP) gas tank reading, the gas consumers in Mexico take the constant risk of running out of gas.
- The gas companies, on the other hand, run refilling operations that are inefficient and costly.
- The whole LP gas delivery ecosystem operates on guesswork and fear.

#### **SOLUTION**

- Nube delivers a complete end-to-end solution that comprises of a Telemetry AsA Service (TaaS), seamlessly integrated with Sierra Wireless's Device-to-Cloud solution. In addition, they provide a cloud Gas Admin Portal

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for the gas companies and a mobile app for the consumers. Gas companies can use the admin portal to monitor the demand (orders) of their customers and integrate the information to plan, schedule and develop delivery schedules in advance. This in turn enables gas companies to optimize their procurement and inventory management.

## **BENEFITS**

- The consumers can set alerts in advance, eliminating the risk of running out of gas
- The gas company can optimize scheduling and delivery operations giving way to significant cost savings and superior customer services.

When Chris Gnanakone bought a house in scenic Cabo San Lucas, on the Mexican coast, he didn't have plans to start a company. But when he learned how liquid LP gas would be delivered to the house, it got him thinking.

In Mexico, as in most of Central and Latin America, LP gas used by commercial, industrial businesses and residences is almost unanimously stored on the roof top of buildings. Roof mountings free up space on the ground, take advantage of an area that might otherwise go unused, and give buildings a more attractive appearance – but make tanks hard to access. It can be difficult, even dangerous, to reach a tank and get a meter reading.

Without meter readings, it is almost impossible to know when tanks need a refill. Some gas companies schedule top-ups based on average consumption rates, or wait for customers to place an order, while others have trucks roam neighborhoods and do refills on demand. It's something of a guessing game, and during spikes in usage, if the weather turns cold or there's a holiday, customers can find themselves without fuel.

Gnanakone had an idea. With cloud-based remote monitoring, gas companies could know exactly who needed a refill, and when. The setup would increase efficiency and deliver significant benefits to everyone involved – and was simply too compelling to resist. He started a company, called it Nube (the Spanish word for cloud, pronounced Noo-bay), and began looking for development partners.

## **Sierra Wireless Device-to-Cloud Solution**

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After evaluating several options for the hardware and software required for an Internet of Things (IoT) deployment, Gnanakone chose Sierra Wireless. He found they had the strongest portfolio, from a technology standpoint, for the telemetry aspects of the Nube service, and was certain that the IoT Acceleration Platform would simplify development and speed time-to-market.

Nube now offers a complete, fully turnkey IoT solution that includes tank monitoring, wireless transmission of tank data to a cloud-based repository, a portal that gas companies use to view status and schedule deliveries, and a mobile app that the gas companies' residential and commercial customers use to set alerts, order gas, make payments, and manage their accounts.

Sierra Wireless supports the gathering and transmission of tank data, and provides the necessary links that connect the back-end data repository with the portal and the mobile app.

- **Sierra Wireless HL Series 3G Modules**

The Sierra Wireless HL Series 3G module, a small and cost-effective module that is interchangeable with 2G and 4G alternatives, is part of the Nube monitoring device, which connects to the tank's analog meter, logs readings, and sends data to the cloud-based repository. The device intelligently collects gas levels while correcting for ambient temperature changes and transmits the gas level, along with the battery's current capacity, the signal strength (RSSI), and any leakage data, to the cloud. Tank readings are sent daily for commercial accounts, and weekly for residential accounts. Because the WP module minimizes the amount of power used for transmissions, the monitoring device can send daily readings for between five and seven years before needing a battery change.

- **Sierra Wireless SIM and Connectivity**

Each Nube device is equipped with a Sierra Wireless SIM card. The 'Smart SIM' enables access to most operators in a given location, anywhere in the world, and uses a patented smart network steering technology to connect dynamically to the best carrier network when a data-service failure is detected. What's more, the Smart SIM's electronic profile can be defined according to customer preference. With the Smart SIM, Nube uses just one SIM for every deployment, regardless of operating region, and that simplifies inventory management. Also, since Nube only deals with Sierra Wireless for connectivity, the company

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doesn't have to spend time negotiating and managing multiple carrier agreements or integrating with multiple SIM management platforms.

- **Sierra Wireless IoT Acceleration Platform**

The Sierra Wireless IoT Acceleration Platform offers an easy-to-use, tightly integrated approach to collecting machine data and transmitting information to the cloud. The Platform handles all the management activities required to keep Nube's devices online and communicating, with remote monitoring and updating, along with activation and monitoring of the Sierra Wireless SIM cards used for cellular connectivity. The Platform also organizes and stores all the transmitted data coming from the tanks, and makes it available to other applications, including the portal used by gas companies to monitor status and schedule deliveries, as well as the mobile app used by their customers to view and manage their accounts.

## **Benefits**

As a startup company looking to attract investors and build a customer base, Nube was focused on saving time while reducing risk. With Sierra Wireless at their side, Nube was able to design the system they wanted, meet development deadlines, and position themselves to expand quickly.

## ***NEW HORIZONS FOR GAS COMPANIES***

Most gas companies don't have the in-house knowledge, resources, or infrastructure to deploy sophisticated telemetry hardware, a management portal, and an mobile app. The Nube service, driven by Sierra Wireless technology, gives gas companies a seamless way to enter the IoT age.

- **Nube takes care of everything** All the gas company has to do is hand over a list of customer names and addresses, and Nube does the rest – they install, deploy, and manage the metering devices, configure the portal for the gas company's use, and prepare the mobile app for customer download.
- **Just-in-time deliveries and streamlined inventories** The Nube portal lets gas companies optimize their delivery schedules and make inventory

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management more efficient. The portal lets companies view tank levels for every customer all at once, and know in an instant who needs what. Service routes become more efficient, with lower costs and a reduced carbon footprint, and can be linked to mapping applications that deliver turn-by-turn instructions to delivery personnel. Alerts, reporting, and monitoring ensure smooth operation, and bring other options, like predictive maintenance, within easy reach.

- **Differentiated services and increased loyalty** Since LP gas doesn't really vary from supplier to supplier, choosing a gas company is often less about the product and more about service and the customer experience. By signing up for Nube's service, with its IoT-driven refill schedules and easy-to-use mobile app, gas companies have something new to offer their customers, and that helps keep existing accounts and attract new ones.

## ***A PLAN FOR THE FUTURE***

Many of Nube's customers operate in more than one region. By partnering with Sierra Wireless for connectivity, Nube has the flexibility to deploy wherever their customers want, whether it's across town or across the border. Also, since the IoT Acceleration Platform is interoperable with any IP-based end-points and cloud services, Nube will be able to develop new ideas quickly and efficiently, as part of their long-term goal to service other vertical markets.

## **HAPPY CONSUMERS**

Running out of gas becomes a thing of the past, and there's no more having to check the meter or remember to schedule a delivery. The mobile app lets residential and commercial customers view their tank level, manage their account, and pay for service, so it's easier to track usage, find opportunities for savings, and optimize cash flow.

## **CONFIDENT INVESTORS**

Sierra Wireless hosts some of the largest IoT deployments in the world, and offers startups like Nube the proven, reliable technology they need to attract investment. The tight connection between Sierra Wireless hardware and the IoT Acceleration

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Platform made it easier for Nube to meet development deadlines, create a compelling customer portal and mobile app, and start growing their customer base.