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CONNECTING WIRELESS SOLUTIONS TO BUSINESS STRATEGY

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Building a Global Tracking Solution

By Jeff Goldman

Orlando, Fla.-based iGPS manages an inventory of approximately 10 million all-plastic pallets that it rents to customers worldwide, primarily in the fast moving consumer goods business.

Since its founding in 2006, according to company chief information officer Jack Sparn, iGPS has used both passive RFID and bar codes to track its pallets. With passive EPC Gen 2 RFID tags embedded in each pallet, a serial number is sent back to iGPS' database in Orlando every time a pallet is scanned as it moves from a depot location to a manufacturer, a retailer, or anywhere else in the supply chain.



The rationale behind that system, Sparn says, is simple. "Our pallet value is approximately \$70, so we wanted to track those \$70 bills floating around out there to make sure they were being properly utilized and would come home," he says.

If, for example, Kraft orders 570 pallets, Sparn says, iGPS then has 570 individual serial numbers recorded as having been sent to Kraft. "Then when Kraft puts their product on that pallet, they scan the pallet and transmit data back to us saying that pallet 1234, or whatever the number is, left location A and is being routed to location B — say, Costco ... and what we do in our database is take that specific pallet off of inventory for Kraft from that location and show that it's in inventory at that specific Costco location," he says.

Still, Sparn says issues can arise within that system. "Someone will steal [a pallet] — or maybe Kraft forgot to scan that pallet, just made a mistake, and the pallet went somewhere and we didn't know about it," he says. "So what we've always had a keen interest in is knowing where these pallets are."

In 2009, Sparn says, he began looking for a solution that could allow iGPS to track pallets down as needed, regardless of whether that was because the pallet had been stolen or was simply misplaced within a warehouse. "Our whole intent is to be as efficient in the supply chain as we can be, and to have all our pallets, ideally, under load and moving all of the time," he says.

Sparn had several key requirements in mind as he looked for a potential solution — any device to be deployed would have to be small enough to fit inside the mold of a pallet at the time of manufacture, but would also have to have a battery that would last for several years. For global connectivity, Sparn knew he wanted a device with a GSM SIM card, but he also needed to avoid racking up massive roaming charges in tracking pallets worldwide.

The company ultimately chose to work with Numerex and Enfora, leveraging the Numerex WorldPass global network service along with the Enfora Spider AT asset tag. "The device is small and has a high IP rating ... and it has an adequate antenna to pick up cellular signals, even though it's embedded inside a plastic container and quite often inside a building," Sparn says. "It also has the ability to pick up a GPS signal, it has a battery that will last in excess of five years — and the cost of the whole device is reasonable."

Numerex chief operating officer Michael A. Marett says the ability of the device to connect globally, regardless of location, was key. "We were able to build intelligence into the device at the network level that allowed it, when it landed in a particular location, to check with the network and say, 'I'm no longer in Florida — I'm in Brazil' — and as a result of that, the device knows, through technology that we employed, that it should be looking to a different network for connectivity," he says. "That intelligence to identify where the pallet had landed was important to the process for iGPS — the intelligence at the network level to say, 'I'm in the United States, and I need to look at these carriers,' or 'I'm in Mexico,' or 'I'm in Chile,' or wherever it is that that pallet landed."

In late 2009 and early 2010, Sparn ran a trial of the Enfora/Numerex solution with a handful of the devices embedded in iGPS pallets. “We tried them out, and did that for about three months,” he says. “Then we started doing an ROI and benefit analysis to say, ‘If we knew this information about these pallets, working backwards from that, would it be beneficial to us? Would we be able to find pallets that went astray sooner?’”

Satisfied with the answers, iGPS signed a contract with both companies and began implementing the solution in the summer of 2010. “We’ve been up and running about 14 months or so with several thousand of these devices,” Sparn says.

And in those 14 months, Sparn says, the solution has helped to recover thousands of pallets worldwide. “We’ve easily been able to recoup 100 percent of our investment in less than a year,” he says — including the costs of software, hardware, deployment and personnel.

Looking forward, while the company plans to continue to deploy more of the devices, Sparn says it won’t be necessary to have the devices embedded in every single pallet — since pallets tend to stick together. “If you tag one pallet out of 100 and you send all 100 to a customer, many of those pallets still stay together throughout their life ... so what we’ve found is that we can be very efficient and cost-effective by tagging some of the pallets, and as those are scattered around, we’re finding the movements of a large portion of our inventory. ... We can go to a location where one or two of the pallets may have this tracking device transmitting to us — and then we subsequently find several hundred or a couple thousand pallets that we otherwise would not have found,” he says.