



M2M Solutions

Vending Industry Case Study

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Tomra East is helping the world recycle with its reverse vending machines that use the Kyocera 200 Module to redeem recyclable containers.

As a subsidiary of the North American division of Norway-based Tomra, Tomra East builds, markets, and maintains reverse vending machines that offer automated bottle redemptions in states with beverage container deposit laws. Tomra's cost-effective systems make it attractive and easy for people to return used beverage containers for reuse or recycling.

Objective

Tomra East needed a more flexible, less expensive method for managing its automated bottle redemption solution. With an installed base of almost 13,000 vending machines providing 7-8 million refund vouchers each day, Tomra East wanted to reduce installation and maintenance costs, minimize installation times, and provide customers with machines that could be easily relocated if necessary. Landline connections made these objectives challenging. The company saw wireless technology as the answer. By installing wireless devices in new locations and upgrading old equipment with wireless units, the company saw an opportunity to expand the reach of its services and improve relationships with existing customers.

Solution Description

In June 2003, Tomra East began deploying wireless-enabled vending machines that use the Kyocera 200 Module throughout two northeastern states. After one year, the company had expanded these installations to five states and 500 devices, with plans for an additional 500 units during 2005.

The Kyocera 200 Module provides embedded CDMA telemetry functionality for the Land-Cellular CDM-819s modem used in these devices. The modem transmits data over a CDMA2000® 1X nationwide network from Verizon Wireless. This complete wireless solution automates communication with and control of the reverse vending machines. Consumers drop their beverage containers into the machine and receive a refund voucher redeemable at the retailer's register for purchase credit or cash. The two-way communication capabilities of this innovative wireless solution enable Tomra to remotely manage certain machine functions and transmit important data to reconcile redemption activity with retailers and beverage distributors.

The processor board in each machine transmits data to and from Tomra East's headquarters. The company uploads and downloads data to the machine to perform routine maintenance and track essential supply chain information. This functionality allows Tomra East to serve as a clearinghouse for bottlers, distributors, and retailers



Tomra East

Company Description

- Subsidiary of the North American division of Norway-based Tomra
- Builds, markets, and maintains reverse vending machines
- Manages approximately 13,000 machines in eight states
- Handles 7-8 million refunds each day

Objectives

- Reduce installation and maintenance costs
- Decrease installation time
- Make installation and relocation of machines easier

Solution

- Equip 500 machines with Land-Cellular modems powered by Kyocera 200 modules
- Two-way data transmission via CDMA2000® 1X service from Verizon Wireless
- Enables remote maintenance of machines
- Provides immediate access to data for reconciling redemption activity with bottlers, retailers, and beverage distributors

Results

- Reduced installation costs by 65%
- Lowered monthly maintenance costs by 50%
- Decreased recurring line charges by 50%
- Improved customer satisfaction by providing vending machines that can be installed and relocated easily



by remotely downloading the containers' bar-code information and accurately dividing the redemption fee among the parties.

Results

By eliminating the constraints of traditional wireline communication using the Kyocera 200 Module, Tomra can now place machines in most geographic locations without the costly and complicated installation of phone lines. The new wireless design makes it easy to relocate machines by avoiding the need to reroute wiring. Additionally, this advance reduces costs due to vandalism. Previously, damage from vandalism or other abuse often required dispatch of a technician to the location to rewire the phone lines to the machine.

"Our primary goals were to eliminate cumbersome hard-wire phone lines and the increasing costs involved with installing and maintaining them," says Rich DeRosa, senior vice president, service and technology at Tomra East. "With this wireless solution, new installations are easier and far less costly than those requiring extension of wires between demark points. Maintenance of machines has also improved."

DeRosa says the wireless devices save Tomra a significant amount of money compared to landline devices. "Land-Cellular's CDM-819s,

equipped with the Kyocera 200 Module, enabled Tomra to develop communication solutions for our automated recycling systems that have helped reduce the company's installation costs by 65% and maintenance costs by 50%," states DeRosa. He further estimates that the wireless device with the Kyocera 200 Module has lowered recurring line charges by 50%, as well. He adds that customers find the wireless units less obtrusive and appreciate the ease of relocation.

In developing the solution, Tomra East selected 3G CDMA technology over GPRS because it offered greater coverage and a more mature solution. "We knew next to nothing about telemetry transmission when we started. We went with a new technology to save money, and CDMA has given us significant savings," says DeRosa. "It's also easier. Anything tethered to the wall causes me grief and headaches. Now I have fewer headaches to deal with." In fact, Tomra East is instead dealing with accolades. The company recently won QUALCOMM's 2004 3G cdma-List™ Award for a Medium Company for an outstanding wireless data solution based on 3G CDMA2000 1X technology.

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*Rich DeRosa,
Senior Vice President,
Service and Technology
Tomra East*



The 3G cdma-List Awards program honors the leading builders of successful wireless data solutions based on 3G CDMA2000 1X or 1xEV-DO technology. To learn more about the A-List, please visit www.qualcomm.com/enterprise

Supporting Partners

The A-List also recognizes supporting partners for their enabling role in assisting winners with their respective wireless data deployments.



Visit our Web site at www.kyocera-wireless.com.

Kyocera Wireless Corp.
10300 Campus Point Drive, San Diego, CA 92121
USA 1-800-349-4188, Outside USA +1-858-882-1410

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