

Case study

Gateway Delivery



At a glance

Industry: Logistics

Application: Pickup and Delivery

Wireless mobility cuts paper and inefficiency from daily delivery operations

For years, Gateway Delivery successfully completed thousands of deliveries per day – and had piles of boxes of delivery receipts to prove it. However, when the Canadian contract delivery company had to document proof of a specific delivery, someone had to sift through those piles of boxes to pull the paperwork and fax it to the customer. When Staples, one of Gateway Delivery's largest customers, offered a new delivery contract that would significantly increase Gateway's business, Gateway was effectively boxed in. Staples' service requirements couldn't be met with the slow, paper-based delivery confirmation process. To get the new business, Gateway Delivery had to change the way it did business.

"Our operation was completely based on paper, we have boxes and boxes of records and we simply cannot continue to expand our operation without an adequate technology platform," said David Carruth, Gateway Delivery's co-founder and executive vice president.

Staples required delivery confirmations to be available in a timely manner and also wanted accurate documentation for its goods that were transferred to Gateway Delivery's warehouses. Paper-based procedures were too slow and error prone to satisfy the service level conditions in the Staples contract offer. Paperwork processing also placed a costly administrative burden on Gateway.

It took Intermec Technologies Corp.'s 760 Series handheld computers with three integrated radios, coupled with Concept Interactive's mobile design and development expertise, to drive all the paper out of Gateway Delivery operations. Daily delivery routes and notes are delivered to drivers using an 802.11b-standard wireless LAN in the distribution center. Delivery confirmations, including a digitized image of the customer signature, are sent to headquarters from throughout Canada in just seconds over Bell Canada's third generation (3G)

CDMA 1xRTT wide-area wireless data network. A Bluetooth® radio is in place to manage data exchange between the handheld computer and peripherals.

“We had two full-time workers who spent almost all their time looking up records and faxing them to customers. We’ve been able to repurpose these employees, in fact one was promoted to office manager. They’re certainly doing something more important to the company than looking something up in a box,” said Carruth.

Fast change

Gateway Delivery had only four months to have a system deployed to provide real-time delivery confirmation on 175 routes in six Canadian provinces. Staples also required the ability to provide detailed reports on inventory and shipment shortages and overages. The geographic breadth of Gateway Delivery’s operations meant the application had to be developed in both French and English. IT requirements called for an application developed in C# (C sharp) and the Microsoft .NET Compact Framework. There would be little time for experimentation and software redevelopment, so Gateway Delivery sought partners with a proven record of success in the software environment. Gateway Delivery selected Concept Interactive, an Ontario software developer who had previously developed and deployed .NET applications for Intermec’s rugged devices.

Concept Interactive and Gateway Delivery quickly agreed that the Intermec 700 Series was the best computer for the job. “The 700 Series supports multiple radio cards, and the competitive devices did not,” said Sean Bredin, vice president of business development at Concept Interactive. “That really made it the right device for this project. The 700 Series also runs the Pocket PC operating system and supports Microsoft .NET, which made it easy for us to integrate the mobile application with Gateway’s different back-end systems. Besides, the Intermec device is the Cadillac of rugged computers.”

“We had no worries about the computer,” said Carruth. “Our biggest concern was wide area wireless network coverage. We are a national fleet. We have vehicles stationed all across Canada, including rural areas where there hasn’t typically been good coverage. Our development and implementation team, led by Thomas Henshall (project manager) came up with many options. At the end of the day we chose to work with Bell Canada. However, when we started the project, Bell Canada only had CDMA 1xRTT in certain areas and didn’t have full coverage but, by the time we deployed, they had extended their network, so now we have coverage wherever we need.”

Providing customers, including Staples, with two-hour delivery windows and timely delivery confirmation, without reducing delivery volume, were the drivers for the entire mobile automation project. Gateway considered transferring the data in batches several times during the day, which was acceptable to Staples, but concluded that real-time communication would provide benefits to its own operation in addition to meeting the customer’s requirement.

“Once you go with wide-area wireless, it’s better to do it in real-time, because it doesn’t cost you any more than communicating in batches throughout the day,” said Carruth. “There are some real advantages to having delivery confirmation in real time. We can monitor exactly what’s happening on the routes – for example, how many stops a driver has made, any stops that have been missed, who is available to make a pickup – and we can reallocate our drivers accordingly.”

When Gateway Delivery saw the benefits wireless communications could provide for route operations, it decided to extend real-time connectivity to its warehouses to support driver operations there. Previously, daily route assignments were all done on paper that drivers picked up at the start of their shifts. Gateway’s drivers are independent and typically go home after their last delivery of the day

instead of returning to the warehouse. They would turn in their daily delivery receipts and other paperwork when they arrived at work the next morning. Throwing paperwork into an inbox and pulling the day’s route instructions from a mail slot wasn’t an inconvenience. Automating these steps with mobile computers potentially would introduce delays, which would anger drivers and prevent them from starting their deliveries on time.

“We have 160 drivers who work out of 16 delivery hubs and distribution centers across Canada. To have them line up to use docking cradles would just be insane, and a waste of time, so a wireless LAN was the way to go,” said Carruth.

Once again, wireless technology was implemented to solve a specific problem and leveraged to provide business value. Besides distributing route lists to drivers, Gateway Delivery uses its wireless LANs and complementary applications to monitor and control its loading and pre-delivery processes. Concept Interactive developed a console application that shows what percentage of orders have been loaded into each truck. Supervisors use the real-time data to reallocate loading personnel so trucks can start their routes on time. “Going wireless in the warehouse makes us much more proactive in our operations,” said Carruth.

The system also validates that everything required for each order is accounted for. “Previously when there were losses or shortages, we would negotiate settlements with our customers,” said Carruth. “When a couple of pencils go missing it doesn’t have a big impact on your metrics. When it’s high value computers or business machines, it starts to add up. We wanted to stop the bleeding there. We wanted to provide better answers to our customers, especially when packages go missing. How can we give an answer about where something is if we don’t track it? Maybe it was never loaded on the truck, maybe it never arrived at our warehouse. We wanted to avoid the finger pointing.”

Earning user acceptance

Concept Interactive's experience in the software environment and ruggedized mobile computers enabled it to develop the set of distribution center and delivery applications in time. The biggest remaining challenge was training Gateway Delivery drivers to use them. Some of Gateway's drivers previously worked for other delivery companies that used mobile computers, and were enthusiastic for the conversion. Others had never used anything but paper in their route operations. Many of these drivers were skeptical about the new system and were concerned it would slow them down – and cost them money because pay is partly based on delivery volume.

Gateway, Bell Canada, Intermec and Concept Interactive worked together to anticipate objections and potential problems, then optimized the equipment, software and network connectivity for maximum ease of use. Intermec made adjustments to the power management settings after its sales representative spent a day riding along with a Gateway Delivery driver to see exactly how the computer was used. To save more power, Concept Interactive developed a software control that turns off WWAN network access (the CDMA 1xRTT network normally provides always-on connectivity) when it isn't being used. Drivers can now count on battery power for 12 hours if necessary. Concept Interactive took advantage of the color display on the 760 Series to create intuitive screens that facilitate fast data entry, prevent errors and cover all the contingencies that occur during the course of business. "They used every last pixel of the screen to make a really great user interface," said Henshall.

The development team spent a lot of time thinking about what could happen in the field, so drivers wouldn't have to think about how to record unusual experiences with the handheld computer. The deadline-driven project timeline was so compressed that drivers got just one day of training before they were switched to the new system. Because of the software design and ease of use of the mobile computers, one day was enough.

"Training time for drivers to adopt this was minimal," said Marc LaPierre, information strategist at Concept Interactive. "That's pretty amazing, considering they're coming from a paper environment."

"Training went fantastic," said Carruth. "The support we got from Intermec and Concept Interactive was just excellent. The reward for our team came when we heard back from the first drivers who used the computers in the field. Their reaction was: 'Wow – you've thought of everything!'"

More to come

Actually, Gateway Delivery has a lot more thoughts about how wireless computers can improve operations. "We'd like to make about a million changes," said Carruth. "This is just the first phase. We only had four months to develop and deploy the system. We identified many more features that we wanted, but made a strategic decision not to implement them to save time. Now we're going back and getting things just the way we want them."

First, the company plans to leverage the unique communications capabilities of the 760 mobile computers to improve receiving and loading operations at its warehouses. Workers currently scan materials to record receiving and loading with a laser scanner that is strapped to the back of the hand and cabled to a computer worn on their belt. The wearable scanners have been high maintenance, and workers find them awkward to use. Gateway Delivery will replace them with Intermec's SF 51, a very compact, cable-free scanner that communicates bar code scan data to the 760 computer using a Bluetooth radio interface. The SF 51 weighs only 283g (10 oz.) and connects to a belt strap with a powerful magnet that provides easy removal and replacement.

Gateway Delivery will also continue to add functions and may extend wireless computing applications to other lines of business. Perhaps one day the company will even apply bar codes to the boxes of delivery paperwork it keeps in archive. Thinking outside the box enabled Gateway Delivery to significantly grow its business once, and is now a foundation for profitable operations.

"There is no way to run our operation, making 6,000 deliveries a day, with paper. It is not possible," said Carruth. "Now, we could add three more customers the same size without any problem."

North America

Corporate Headquarters

6001 36th Avenue West
Everett, Washington 98203
Phone: (425) 348-2600
Fax: (425) 355-9551

South America & Mexico

Headquarters Office

Newport Beach, California
Phone: (949) 955-0785
Fax: (949) 756-8782

Europe/Middle East &

Africa Headquarters Office

Reading, United Kingdom
Phone: +44 118 923 0800
Fax: +44 118 923 0801

Asia Pacific

Headquarters Office
Singapore
Phone: +65 6303 2100
Fax: +65 6303 2199

Internet

www.intermec.com
Worldwide Locations:
www.intermec.com/locations

Sales

Toll Free NA: (800) 934-3163
Toll in NA : (425) 348-2726
Freephone ROW: 00 800 4488 8844
Toll ROW : +44 134 435 0296

OEM Sales

Phone: (425) 348-2762

Media Sales

Phone: (513) 874-5882

Customer Service and Support

Toll Free NA: (800) 755-5505
Toll in NA : (425) 356-1799

Copyright © 2007 Intermec Technologies Corporation. All rights reserved. Intermec is a registered trademark of Intermec Technologies Corporation. All other trademarks are the property of their respective owners. Printed in the U.S.A. 611554-01B 05/07

In a continuing effort to improve our products, Intermec Technologies Corporation reserves the right to change specifications and features without prior notice.

