

Bell RFID solution helps CN increase efficiency, improve productivity and cut costs.



The customer

- Canadian National Railway (CN) provides domestic and international shipping through a number of intermodal freight terminals across Canada and the US

The need

- Accurate tracking of CN assets

The solution

- Radio Frequency Identification (RFID)-based asset tracking solution from Bell

The results

- Increased efficiency of asset usage to improve cycle time by nearly 50%
- Improved productivity by optimizing asset deployment and utilization
- Cost savings through reduced capital and operational expenses
- Improved CN customer satisfaction

Technology drives growth and success for CN

Canadian National (CN) has a long history of technology milestones. In the roaring '20s, the railway was the first to make a radio broadcast from a moving train. In the early 1940s, CN initiated full-scale use of Centralized Traffic Control on the Moncton to Truro line and in 1990, the railway developed BELTPACK, the world's first remote control that operates driverless switching locomotives.

Time and again CN has driven innovation in the rail industry through its use of technology and consequently, the company has seen tremendous growth from those investments. Most recently, the company adopted a radio-frequency identification (RFID) solution from Bell to track assets at its largest intermodal freight terminal. CN's 195-acre yard in Brampton, Ontario is a transfer station where shipping containers are moved from rail lines to truck chassis, and vice versa.

The tracking challenge

For some time, the Brampton terminal had been experiencing inaccurate reporting and asset management inefficiencies due to manual processes. On any given day, 14 freight trains carrying heavy cargo containers arrive at the Brampton terminal, ready to be transferred onto a wheel framed chassis and transported to its destination by truck.

Traditionally, truck chassis identification numbers were entered by hand. As a trailer entered or exited the intermodal facility, a gate clerk would record the

"Bell has always been very responsive to our needs. The mobile solutions team has been very adaptive to the many twists and turns that we have thrown at them."

Remy Benmiloud,
CN Manager, Intermodal Excellence



RFID antennas at the Brampton Intermodal Terminal

trailer number, as verbally declared by the driver, into a tracking system. This manual process was increasingly prone to error as the actual markings on the chassis were often obscured or numbers were jotted down too hastily, resulting in inaccurate or illegible data.

"Often, when a chassis went out the gate with an incorrect number, it would still show up on my computer as being in the yard. Many times we wouldn't know where the chassis went, who had it and when it was coming back," said Remy Benmiloud, CN Manager, IMX (intermodal excellence).

As the largest terminal in Canada, the Brampton facility was reaching its capacity. The manual processes were not only negatively impacting the cycle time for each chassis (the amount of time the chassis is in use), but they were also losing track of costly inventory.

Adding to the existing capacity and throughput strains, containers belonging to private companies were also using CN lifts and cranes to move boxes off trains, onto CN chassis and eventually grounded at a storage location for pickup. "This meant more lifts, more cranes

Bell

and more congestion, which ultimately led to less productivity,” said Benmiloud. To help alleviate the congestion problem, the terminal created a chassis pool where every container that is unloaded from a train is put on a CN chassis. Private customers can then use the CN equipment at a per diem rate. “While sharing assets with customers helped streamline our process, it brought forward a greater need to track those assets (chassis) more accurately,” explained Benmiloud.

CN turned to long-time partner Bell for a solution that would help improve chassis cycle time, increase asset visibility and provide cost savings for the company.

Bell to the rescue with a comprehensive RFID solution

While radio frequency identification (RFID) is extensively used by manufacturers and retailers to track products as they move through the supply chain, growing interest is coming from organizations that have high value assets, such as CN.

Based on a strong existing relationship that extended into different areas of the business, CN enlisted the help of Bell to assess how RFID technology could



CN truck chassis with RFID tag

be used to improve asset tracking at the Brampton yard. Bell worked with CN to design, implement and integrate an RFID-based asset tracking system that is unique to CN’s business needs.

“What we needed from Bell was a way to transfer data automatically, so that when a tag passed a reader at the entry and exit gate, the information would get relayed to our internal system instantly. We couldn’t be waiting 10 minutes for data to come through,” explained Benmiloud.

“CN had specific business problems to solve and understood that Bell had capabilities in RFID technology that could be very useful in addressing their unique challenges,” said Andrew Mitchell, Regional Manager, Professional Services, Bell.

Knowing that CN had made a big investment in its enterprise asset management application, Bell worked diligently to leverage the legacy system with the new RFID implementation.

“Together, with one of our partners, we developed custom middleware that allows us to collect data from RFID tags from the assets - the chassis - and convert that information to a business transaction, which is sent to the customer’s asset management system located in Montréal,” explained Mitchell.

The deployment also included customized, rugged RFID tags that could withstand environmental stresses. According to Benmiloud, the tags are consistently readable and operate extremely well in varying travel and weather conditions. “Bell also overcame the challenge of making sure the information that is read at the gates would be passed through our fiber network to Montréal,” he said.



RFID keeps CN on track

Since the RFID implementation, the number of lost chassis has moved from 200 to 1. In addition, accuracy at the Brampton intermodal terminal has gone up from 85% to 100%. "I manage the chassis fleet in Canada and the U.S., so for me to be able to recover all of my chassis and take them out is huge. Thanks to Bell, I have reduced my costs," said Benmiloud. "The key to any process is accurate data and the RFID solution from Bell has provided CN with the accurate data needed to better utilize our processes," he added.

Now that the Brampton terminal has the correct location information for its fleet of 2,000 chassis, Benmiloud can call the appropriate companies to get the chassis back, which has improved the typical cycle time by 50%.

While working through the project, Bell identified other areas of opportunity for RFID and is now working with CN to track trucks and containers. "By any stretch of imagination, we're not complete in terms of what we can do together to drive business benefits," said Mitchell. "While the integration and implementation are complete, Bell is providing ongoing support to the customer in terms of maintaining and keeping the system operational and supporting its users."


CN is now in the midst of implementing an automatic gate solution at all of its terminals in Canada. "What started out as an accurate tracking mechanism for our chassis pool has developed into the key component of the auto gate system being implemented at all terminals," said Benmiloud.

By going a layer deeper through its use of RFID technology, CN has optimized the size of its chassis fleet and reduced operational expense. "Thanks to this solution, CN has increased its asset visibility and that has meant revenue growth and greater customer satisfaction," said Mitchell.

To better track your business assets while improving productivity, cost savings, and customer satisfaction, Bell has a range of innovative wireless solutions and expertise.



This structure designed by Bell has antenna pairs to read container level and chassis/truck cab level RFID tagged assets.

 Bell and CN, working together to achieve success.

For more information contact your Bell representative or visit bell.ca/enterprise

