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IT Toolkit | by Vicki Speed

Cloud-Based Route Planning? That Would Be Ideal!

For a wholesale distributor of electrical supplies, auto parts, and industrial products, the best delivery routes run through the cloud.

Third-generation, family-run Ideal Supply, a wholesale distributor of electrical supplies, auto parts, and industrial products, is no stranger to innovation. Based in Listowel, Ontario, Canada, the company was one of the first in its market segment to transition to a technology-enabled route planning system with mobile capabilities more than one decade ago when mobile adoption was more of a dream than a reality.

Today, Ideal Supply is pioneering another technology shift in its industry by adopting cloud-based logistics management. This shift enables real-time visibility, drives economies of scale, and delivers unprecedented customer service.

Economies of Scale

In business since 1926, Ideal Supply has grown to become one of the largest privately owned wholesale distributors of automotive, electrical, and industrial products and services in Canada. In fact, the company is Canada's largest NAPA Auto Parts distributor. Currently, Ideal Supply operates 30 branch locations in southwestern Ontario, has

450 employees, and maintains a 75,000-square-foot distribution center.

The company relies on seven dispatch areas located within its geographic service zone. Dispatchers at these locations plan and optimize routes in a predominantly rural region for a delivery fleet of more than 100 vehicles, ranging from a smart car to a 53-foot tractor-trailer.

In 2004, Ideal Supply initiated its first technology-enabled route planning system when it adopted *Roadshow* from logistics technology provider The Descartes Systems Group Inc., based in Ontario. The program added mobile capabilities to business processes.

"At the time, our manual systems weren't cutting it," recalls Chris Moon, director of information technology for Ideal Supply. "We didn't have systems in place to monitor driver performance, and we used manual processes to facilitate routing.

"We wanted to offer multiple waves of delivery and add same-day delivery services, which our existing system could not handle," he adds. "In short, we were looking for a way to bring our paper-and-pen-driven logistics into the current era."

In July 2005, the company implemented Descartes' legacy route planning and execution system. "*Roadshow* was also our introduction to the benefits of mobile applications, which, at the time, were fairly new to transportation and logistics," Moon says.

"The benefits were immediately visible," he adds. "We were able to facilitate paperless dispatch with handheld cellphones, which were not nearly as sophisticated as today's smartphones. *Roadshow* taught us about the best practices and processes to manage road schedules and customer service."

Moon recalls one particular practice that changed after implementing *Roadshow*: "We used to delay a truck's departure if a customer called in 15 minutes past the order deadline," he says. "We thought we were providing good service, when, in fact, we were providing good service only to one customer and bad service to the other 15 customers waiting for their orders. *Roadshow* provided a more disciplined approach to logistics."

At the time, Ideal Supply was able to deliver between 1,900 and 2,000 orders every day with the new software and improved process efficiencies. Today, one decade later, the wholesale market has evolved—and so have customer demands.

In Search of Real-Time Response

"Meeting customer expectations requires greater visibility," Moon says. "Wholesale is a funny business. Customer service is not necessarily exclusively about service, it is also about economies of scale and efficiency; so logistics is a competitive differentiator."

Today, Ideal Supply makes between 2,100 and 2,200 deliveries daily in a service area that covers a large geographic footprint spanning from Stratford in the south to Huntsville in the north—an area of approximately 8,700 square miles, most of which is rural.

Dispatchers must consider the distance between stops, infrastructure, and inter-connectivity with other nodes—and real-time data visibility is vital to operational efficiency and customer service.

"The cost of missing a connection is significantly higher in our rural environment than in an urban area," Moon says. "If drivers take an inefficient route in downtown Toronto, it might cost them a few minutes or a couple of blocks of travel time. But if they do that on a dirt road in midwestern Ontario, they could lose 30 minutes or more, and drive an additional 30 miles."

In search of real-time visibility into products in the delivery cycle from the warehouse to the customer, as well as customizable tools to connect its unique processes and practices, Ideal Supply looked at cloud-based route planning systems. It sought a solution that would be easy to implement and use.

"When we evaluate technology and process solutions, we explore the end user experience," Moon explains. "It does no good to implement the fanciest Enterprise Resource Planning (ERP) package with all the bells and whistles if users can't achieve tangible, value-add experiences. We looked at the user interface to data structure and use, reporting functionality, feedback evaluations, and continuous improvement."

The team considered a number of technology solutions, ranging from small and purpose-built packages to large players. "The big differentiator for us was integration through standardized techniques such

as Application Programming Interfaces (APIs)," Moon says.

Moon and his team wanted a cloud-based route planning system that would seamlessly share data with its ERP and other platforms, such as *IdealLINK*, its internal e-commerce solution.

"We knew the cloud would allow us to leverage a single repository, and thereby improve visibility within our organization and to our customers," Moon adds. "Along with visibility, we wanted electronic proof of delivery. We have that capability inter-

Family-run distributor Ideal Supply is optimizing delivery routes through a cloud-based route planning system.

nally, but not to our delivery customers.

"For instance, we want our customers to be able to sign a smart device and see the proof of delivery within minutes. Those are big drivers in today's environment."

With those improvements in mind, Ideal Supply opted to adopt Descartes *Route Planner On-demand*, a comprehensive, cloud-based delivery route planning, execution, and mobile solution.

Optimized for the Cloud

Descartes *Route Planner On-demand* provides rapid time-to-value and an easy-to-use solution for automatically planning driver routes, according to the developers.

"In terms of technology advances, this

solution emphasizes consolidation and the cloud," says Andrew Roszko, senior vice president at Descartes. "Traditionally, distributors had one tool for road planning, another for GPS mobile tracking, then a third to track idle time, routing, and telematics. Now, it's an all-in-one solution."

In addition, cloud capabilities are fairly new to route optimization and mobile tracking.

"A natural adoption of the cloud is taking place," Roszko continues. "In the past, the cloud wasn't fast enough for route optimization. That has changed. During the past few years, with advances in internet speed, the cloud now supports this level of optimization. But, distributors such as Ideal Supply need reliability."

"Not that long ago, the cloud's reliability and stability were concerns," Moon adds. "We wanted to see those areas better developed into a mature model and solution before we migrated from our reliable client-server solution.

"That has all happened and we are poised to take advantage of the technology," he notes. "The cloud will help us extract data in real time, a capability that was problematic with the client-server model."

Roszko also believes that the barriers to entry for cloud-based tools have come down substantially, as has the speed of implementation. "Cloud-based solutions such as *On-demand* don't require large capital expenditures," he notes. "There's no barrier to adoption other than priority in the organization."

Purpose-Built and Customized

With Descartes *Route Planner On-demand*, Ideal Supply planners and dispatchers benefit from better visibility and control over daily routes with a drag-and-drop visual planning user interface to make edits and monitor delivery status throughout the day.

The solution offers advanced capabilities—including optimizing static and dynamic routes by taking into account geographic zones, time windows, and other physical constraints—at an affordable cost. The solution's mobile component

provides real-time GPS-based tracking and driver performance monitoring, and can electronically capture proof-of-delivery (POD) information.

Moon and his team are approximately 90 percent through implementation of the Descartes *Route Planner On-demand* solution—and already see value.

"We've set our technology expectations very high for this implementation," he says. "We want to take advantage of advanced algorithms, such as automated alerts about delivery windows, and customize the system to meet our unique business processes."

One algorithm that the team is particularly excited about is the "at-risk delivery window."

The route planning system predicts estimated arrival times and accounts for customer requirements such as delivery windows. Therefore, if something happens along the route to delay a delivery, such as bad weather or an accident, the system proactively alerts Ideal Supply's dispatcher or customer directly without manual intervention. A traditional system would also note the issue, but the dispatcher would have to identify the problem and initiate action.

Ideal Supply is also customizing some parts of the route planning application to fit its needs.

"Specifically, we have tweaked the smartphone app sequence to match our processes from scanning packages to a delivery vehicle to reconciliation," says Moon. "The flexibility to

customize the application turns prepackaged software into a purpose-built solution."

For instance, the team configured a customized delivery reconciliation process that manages packages from the time they are scanned to the driver's package list. With the automated package list, Ideal Supply drivers can see their entire scheduled run at the order level, and scan it onto their delivery vehicles like a checklist.

"This was important to us, because multiple orders could be required for a single stop, particularly for our automotive customers," Moon says. "The reconciliation capability greatly reduces the chance of missing something."

Other benefits expected along the way include improved administrative efficiency for processes ranging from accounts receivable collection (faster posting and reconciliation of PODs) to the dispatch process itself.

"Longer term, we expect to use the data and discipline this new software brings to the table to create new internal processes and tools that keep us changing and adapting to the business environment faster than our competitors," Moon concludes.

Ideal Supply expects to have the Descartes *Route Planner On-demand* solution fully implemented during summer 2016. ■