



Optimizing Enterprise Mobile Field Service with Digital Maps and Routing

User Case Study

CSG Systems International, Inc.

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The Company

Englewood, Colorado-based CSG Systems® International, Inc. (NASDAQ: CSGS) is the leading provider of outsourced billing, customer care and print and mail solutions and services supporting the North American convergent broadband and Direct Broadcast Satellite markets.

CSG's solutions support some of the world's largest and most innovative providers of bundled multi-channel video, Internet, voice and IP-based services. CSG's unique combination of solutions, services and expertise ensure that cable and satellite operators can continue to rapidly launch new service offerings, improve operational efficiencies and deliver a high-quality customer experience in a competitive and ever-changing marketplace.

One of CSG's key services is Workforce Express™: a computer-based field force management system for scheduling, routing and dispatching of fieldwork such as installation, repair and disconnects. Some 3,000 dispatchers and 30,000 field technicians rely on CSG's Workforce Express to support 25 million subscribers. 25,000 of the technicians access Workforce Express via an extensive variety of mobile devices.

CSG is one of the leading providers in the customer care and billing market, with 2005 revenues over \$330 million.

The Challenge

Before Workforce Express, when observing users' field technicians at work, CSG noticed that out of a typical eight-hour work day, field technicians were spending as much as 3 hours on hold or talking to the dispatchers on the phone. The technicians were calling to get their next jobs, to locate facilities and homes, and to report their status. As a result of this study, CSG was determined to make its customers' field technicians more independent and to spend less time on the phone.

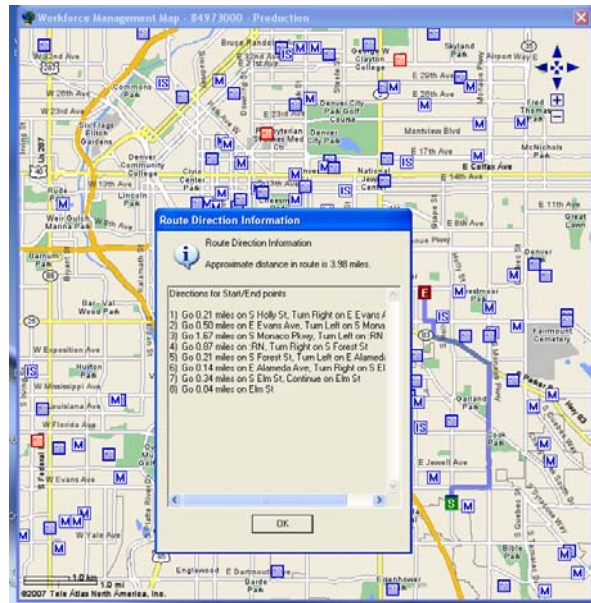
Another challenge was to reduce the number of times that technicians called in for driving directions. But with the technicians not calling as frequently, how would the dispatchers know their location and provide directions to the next service call?

The Solution

As one of the key components of the overall Workforce solution, CSG decided to enable dispatchers to view the technicians' location on digital maps. The maps are updated in real-time whenever a technician changes their job status and location.

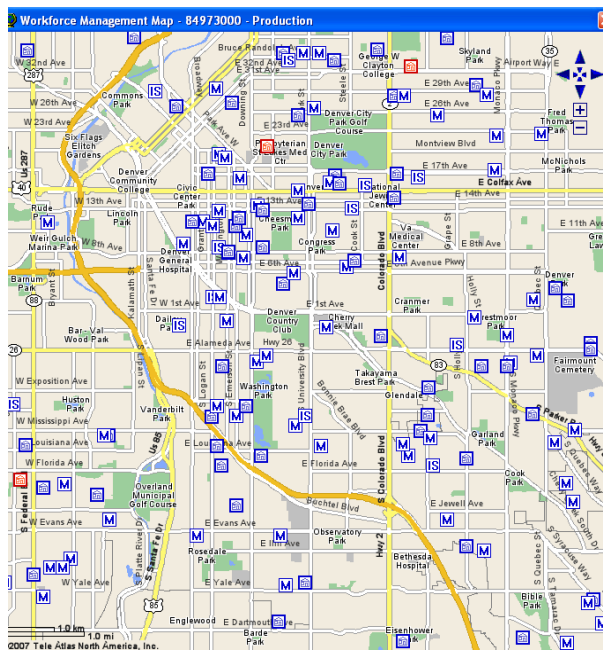
CSG evaluated several mapping vendors, with accuracy, performance, reliability, scalability and price as determining factors. CSG selected deCarta's Drill Down Server® (DDS) mapping/ routing geo-spatial software platform, and Tele Atlas as the underlying digital map data provider.

The solution also allows the technicians to get driving directions and graphical maps from their mobile computer. Whenever a task is dispatched, Workforce Express asks Drill Down Server to render driving directions and a map image, attached to the service call and provided to the technician. (See superimposed screen shots on the following page.)

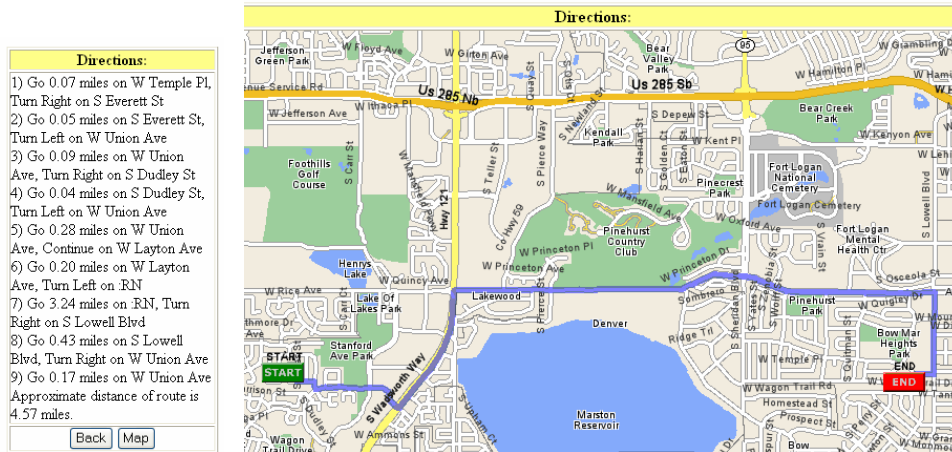


Results – Increasing ROI

Today, dispatchers use the digital maps to track their technicians. "Our users tell us that the maps are much easier to use than the usual spreadsheet or tabular view," says Danny Little, CSG Systems International's Director of Product Management for Workforce Express, "This allows them to make better dispatching and routing decisions and ultimately enable more service calls. We found that on average, each field technician was able to make one more service call per day. Over our customer base, that translates to approximately an additional 30,000 completed calls per day."



But the dispatchers aren't the only ones that benefit from the new solution. The technicians have maps and turn-by-turn driving directions for immediate use, which means they don't need to carry heavy map books anymore, and don't need to wait on the phone for directions. Finally, Workforce Express utilizes the street-level routing to make more efficient scheduling decisions.



"The deCarta DDS platform along with geographic data from Tele Atlas has provided us exceptional performance for maps and routes, and that benefit has been directly passed on as significant logistic and resource efficiency gains for our customers," says Little. He continues, "The mapping and routing capability gives us a powerful competitive edge, for it gives our users the ability to service more customers with better efficiency. And that translates to mutual increased profits. Naturally we're very pleased."

Implementation

According to Little, integration of the deCarta platform was straightforward, and the system is exceptionally reliable and scalable to manage any workload volume. It is important to understand that CSG provides the software as a service (SaaS), and all the users access the same system hosted at CSG facilities. This means that deCarta's Drill Down Server is under heavy pressure processing millions of tasks every day. "All of this is accomplished on one production server with two CPU's, and another server only deployed for backup if necessary. In over four years of use, we've never had a system failure," says Little.

CSG's Future Plans

CSG is not resting with this gain. The company is already planning to leverage deCarta's DDS and Tele Atlas to increase its competitive edge.

"GPS is the next service efficiency enabler," says Little. "Today, the technicians' location is updated whenever they report that they completed a job. The location is assumed to be the address of the task. GPS will allow much greater precision- it will show exactly where the technicians are, regardless of when they report. The GPS location of the technician will be displayed on the existing maps and we will use deCarta's DDS to plot "breadcrumb trails" on demand for the dispatchers. This use of DDS makes the deCarta platform an even more integral part of CSG's overall solution."

Little adds, “CSG continually looks to improve its offerings and the value of those offerings to its customers. These improvements in the future may very well include deCarta’s navigation software development kit to provide in-vehicle navigation as well as real-time traffic to ensure the field force is always taking the most expeditious and efficient route to the next job.”

Other future plans include maps-based analytics (e.g., Is there a geographic correlation between a series of recent events involving 200 disconnects, and an outage in that area?), display of the plant data (e.g., hubs, nodes, pedestals and head ends) on the maps. Little comments, “We would extend our use of deCarta’s DDS to help with plotting on the maps those plant elements that require maintenance or is experiencing and outage.”

Little concludes, “Our strategic implementation of location in CSG’s Workforce Express product not only provides us with differentiable value to our customers, but also builds on the company’s other enterprise applications with integration points to most of CSG’s other systems including BI, CRM and Billing. As a result, it can provide further market extension and penetration opportunity for CSG’s portfolio of workforce management and workforce automation solutions.”

Summary

CSG’s Workforce Express is the most widely deployed solution of its kind in the North American broadband and Direct Broadcast Satellite market. Workforce Express addresses one of the most costly and complex aspects of the cable business – getting the appropriate technician to the job on time. This has been accomplished with the help of deCarta’s Drill Down Server and data from Tele Atlas. CSG became the leader in the space by delivering an innovative, cost-effective product to businesses. To maintain this position, with the help of its technology partners such as deCarta and Tele Atlas, CSG will continue to grow its products with leading-edge solutions that take advantage of deCarta’s navigation software development kit and real-time and predictive traffic capabilities. Such offerings will provide differentiated value and efficiency to CSG’s customers, and further assist the company’s continued success.

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