BLUEPHOENIX
ASNA

CASE STUDY

Roto-Rooter—System i .NET Extension

Roto-Rooter Services unclogs its dispatch system with ASNA's AVR and DataGate.

Quick Take

PROBLEM

Roto-Rooter Services needed to improve the efficiency of its radio-based dispatch system for service technicians.

SOLUTION

Using ASNA Visual RPG and DataGate, Roto-Rooter built a new Web services-based "service-dispatch" application and equipped its technicians with GPS-enabled mobile phones to better automate its dispatch processes.

RESULTS

- Roto-Rooter is able to provide better and faster customer service.
- Technicians are able to complete more service calls in a day, so the techs and the company make more money.
- The new system is more efficient in handling calls and data and helping dispatchers make the best service assignments.

PRODUCTS

- ASNA AVR for .NET 8.0
- ASNA DataGate
- Microsoft Visual Studio 2005

Customer

Roto-Rooter Services is a company specializing in plumbing and drain clearing, with company-owned branches and contractors throughout the United States. The company employs about 2,000 technicians and handles approximately 2,100 service calls per day.

Roto-Rooter Needed to Unclog Its Dispatch System

Millions of households and businesses using water and drainage infrastructure daily means plenty of work for companies that provide plumbing services. As one of the companies in that market with plenty of name recognition, Roto-Rooter needs to handle sometimes thousands of daily service calls nationwide. Because water and drainage aren't a luxury, everyone needing Roto-Rooter's services wants them ASAP. To meet that demand adequately, Roto-Rooter relied for years on a system of radio-dispatched service trucks to meet customer demand. But in a high-volume market where few of the service requests are less than high-priority, a system that relied so much on verbal information exchanges over a radio was too slow.

"When a job becomes available, it's up to the dispatcher to send a technician who is either closest to the job location, closest to being finished with their current job, or who is trained to handle the specific task," explains Tom Duebber, a Roto-Rooter software developer who was tasked with improving the system. Not only that, "The tech had to contact a dispatcher to verbally convey the details of the job before receiving another," Duebber recalls. All that radio traffic takes time and can sometimes cause miscommunication. Multiplied by thousands of calls a day, it's clear that this kind of administrative overhead was detracting from Roto-Rooter's ability to provide the best possible customer service.

Study of the problem showed that the solution would be a new application that would further automate the dispatch process by giving technicians some kind of GPS device to help the dispatchers easily determine technician locations and facilitate communications by a method faster than speaking into a radio. In addition, Roto-Rooter wanted the new dispatch system to be client/server because the application would be more user-friendly in Windows and help dispatchers manage technicians more efficiently. But it was also important that the new dispatch system tie into the IBM System i, because that's where all the company's other applications and central database already were running.

Fitting Together a New Pipeline—ASNA AVR and DataGate Solution

Roto-Rooter decided to use GPS-enabled mobile telephones for communications with the techs because the phones were more inexpensive than GPS-enabled handheld computers and had the advantage of supplying the dispatchers with ready-made maps on which to locate technicians and job sites.

The requirements to build Windows applications that were compatible with System i led Roto-Rooter to Blue Phoenix ASNA's Visual RPG for Microsoft Visual Studio .NET (AVR.NET) as a tool for creating a new dispatch application. AVR is an implementation of the RPG language that lets developers build Web and Windows applications and provides direct and secure access to files and program objects on System i.

"When we started investigating AVR, I noticed it was very similar to Visual Basic, but allowed us to leverage our knowledge of the System i file system," Duebber remembers. At about the same time, "ASNA offered the columnar editor, which was very similar to the (System i) editor. That also helped the learning curve. After writing a couple of trial applications, I was convinced AVR was going to make [the job of writing the new application] easier."

Duebber took the lead on the new project. As the project developed, Duebber noted additional advantages to AVR. It was easy to set up, it used operations codes similar to those on System i for accessing files, it let him run applications on System i from AVR, and it let him pass parameters to other System i applications that were written in RPG. Throughout the project, Duebber relied on ASNA support to resolve snags.

> ***"I was the only AVR programmer, so I had no in-house help for learning it. Most of my help came from ASNA support, and it was easy to pick up. ASNA's service and technical support is second to none."***
>
> Tom Duebber
> Roto-Rooter Software Developer

ASNA products showed their worth as the project unfolded. Using AVR, Roto-Rooter was able to build an intuitive GUI for its Dispatch application. The interface provides the dispatcher with such information as a list of jobs that need to be done and a list of technicians available to do the work. ASNA's DataGate provided a means of retrieving and updating the customer's database. DataGate supports the new Dispatch application with cross-platform, record-level access to database files on System i. Those files include information important to the dispatch process, such as technician skill sets. When a technician is assigned to a job, Dispatch logs these transactions into a non-keyed transaction file on System i. Each job operation, such as entering the job ticket into the system, assigning the ticket to a particular tech, or changing job scheduling, creates a transaction that goes into this file.

The dispatch application updates in real time (utilizing Web services) a third-party application that plots job locations on a map and sends job information to the appropriate technician's phone. When the job is done, the technician enters data such as the dollar amounts for parts and labor, which is forwarded to the back office System i via a Web service as well.

> ***"Now we can complete more jobs per day by dispatching the technicians more efficiently. Instead of contacting a dispatcher by radio after completing a job, the tech sends the information via the mobile phone, which triggers an alert at the Call Center to issue the tech another job."***
>
> Tom Duebber
> Roto-Rooter Software Developer

Drinking in the Benefits

The Dispatch system was first implemented at one Roto-Rooter branch and gradually rolled out to all the other branches. After its launch, the Dispatch system proved scalable and versatile enough to let Roto-Rooter restructure from offering services at 50 branch offices into two national call centers.

The application system completely streamlined how Roto-Rooter handles its service dispatches:

- The Windows-based program lets fewer dispatchers manage more technicians.
- Roto-Rooter can handle more service calls in a single day than under the old system, resolving customer problems more rapidly.
- Roto-Rooter is able to use a single help desk run by just four people.

Today, the Dispatch system runs on two i5 model 520 machines. AVR.NET and DataGate were instrumental in helping Roto-Rooter transform its fragmented customer service system into a nationwide application and improve the company's bottom line by saving time and money.