

ATX Technologies uses voice recognition for hands-free traffic reporting



database functions and location-identification technologies to provide a complete line of telematics services. These services include emergency response, roadside assistance, automatic collision notification, stolen vehicle tracking, and convenience services such as routing assistance and more.

ATX serves subscribers through its customers' brands, including Mercedes-Benz, BMW, Jaguar and Lincoln Mercury.

Overview

■ **The Challenge**

ATX wanted to develop an application that would provide luxury car owners with hands-free, voice-activated traffic reports

■ **The Solution**

IBM WebSphere® Voice Response and Voice Server technology created a hands-free traffic reporting system

■ **The Benefits**

Provides traffic reports and other information without requiring drivers to take their hands off the wheel or their eyes off the road

Hands-free solutions for today's driver

In today's mobile society, it's all about convenience. Consumers want information when they are on the road, and they want access to that information safely and easily.

With voice interaction technology, Service Providers are able to offer these services to automotive manufacturers, who in turn can provide their customers with what they want—a hands free, safer alternative to a console keypad and screen.

A variety of end user services

Dallas-based ATX Technologies, Inc. is one of the leading independent telematics Service Providers to the automotive industry. Recognizing the growing demands of consumers for a variety of end-user services, ATX has integrated wireless communications,

(The ATX traffic reporting system is) "...truly a valuable service. It is perhaps the best location-based service for the vehicle environment."

*Dr. Thomas Schalk
Voice Principle
ATX Technologies*

Intelligent traffic reporting

When ATX wanted to develop a traffic reporting application for a major luxury automobile manufacturer's in-car communications system, they turned to IBM. WebSphere Voice Response was already being used to reach a customer assistance center, request roadside assistance and even to make dinner or hotel reservations, appointments or purchase gifts. A new application was sought to alert drivers to conditions and problems on the road ahead.

In partnership with Vocomo Software, Inc., ATX speech-enabled a text-only solution that was already in production.

"The original application would display traffic information on a vehicle's console screen", says Ingrid Kjelstrup, ATX's Senior Product Manager for Navigation, Traffic and Voice. "The personalization aspect of the service was already in place; a customer could pre-define commonly traveled routes. For example, one named 'Commuter to Work' might cover the 7-9 am, weekday time period, with a specific route defined down to the street level. But this text-based application was limited to cars with in-vehicle screens, and it was a distraction to the driver. We improved the service by building a voice-enabled personalized traffic product and it is now solid and robust, and it does exactly what we intended it to do."

New services using existing hardware

ATX President and CEO Steve Millstein says the voice interface and the modular nature of the new platform will enable new automated text-to-voice information services and other non-emergency, location-based telematics services to be compatible with today's generation of telematics hardware.

ATX expects the appeal and low cost of the new services to speed telematics penetration of the automotive market. "For automakers, this means a variety of information services such as navigation, e-mail and the Internet can be added without having to make a sizable investment in new hardware inside the vehicle for storing and displaying information for the driver," explains Millstein. "It also means forward and backward compatibility. The automaker can add a service tomorrow to a car made yesterday."

"The new interface is more convenient, faster and safer for the user," continues Millstein. "IBM has 30 years of experience in voice recognition technology and with the products, we will bring customers the accuracy, reliability and convenience they expect from us."

**IBM voice technology:
unlimited potential**

Kjelstrup and her team have tested the solution in other manufacturers' vehicles and are currently evaluating several potential applications. "Our system front end—an automated operator—is accessed by pressing a button on the car console", she explains. "A range of services is presented and selections are made using the voice response system. We are working on new offerings, such as a dealer-connect solution that will allow customers to access their nearest or preferred dealer.

Location-based services deliver

Dr. Thomas Schalk, one of the leaders in the speech recognition industry, recently joined ATX to head the company's interactive speech recognition program. He describes the voice-delivered traffic application as "...truly a valuable service. It is perhaps the best location-based service for the vehicle environment; the audio interface is clearly the best information-delivery mechanism and the service is well suited for adaptive dialogue design."

Here is an actual dialogue between a driver and the WebSphere Voice Server-powered system. To begin, the driver presses a button on the car's console.

WVR Voice: "How can I help you?"

Driver: <Silence> (driver is new and doesn't know what to say)

WVR: "Please say the name of a service. You can say 'traffic', 'vehicle information', or 'operator'. For a full list of options, say, 'help'."

Driver: "Traffic"

WVR: "There are three alerts for your commute. Here is the first one: New York State Thruway at Exit 13, there is an overturned vehicle, left bound lanes are affected."

"Next one"

"Route four between Route 208 and Paramus Road North, there is road construction, traffic is stop and go."

"Here is the final one"

"Holland River Drive, between Triboro Bridge and 116 Street, traffic is slow, traffic in both directions is affected."

Driver: "Repeat it"

WVR: "Sure, here it is again"

"Holland River Drive, between Triboro Bridge and 116 Street, traffic is slow, traffic in both directions is affected."

Driver: "Goodbye"

WVR: "Ok, bye now, thank you for using our service."

Putting WebSphere to the test

A performance test of the ATX traffic reporting system was conducted in New Jersey and California using over 110 drivers selected because they were demographically representative of luxury car owners. Each test subject drove two to four different car models along a 25-minute route, which was one-half highway and one-half city. Nearly 10,000 voice utterances were analyzed.

According to the study, "The performance of WebSphere Voice Server and Vocomo's traffic application proved to be of high quality for this leading manufacturer of luxury vehicles. ATX Technologies learned from later tests that other luxury auto manufacturer's cars are most likely to experience the same or similar results."

Experience you can count on

With more than 40 years of delivering voice solutions and more than 150 voice technology patents, IBM is a global leader in providing access to data through voice integrated solutions that enable organizational effectiveness for e-business development.

For more information

To learn more about how IBM can help your business take advantage of conversational e-business visit our Web site at ibm.com/pvc or contact your local IBM Sales Representative.



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