

Field Service Finds Its Voice

Have you considered voice recognition technology as an alternative to traditional field service automation solutions?

For years, voice recognition technology has been used in conjunction with mobile technology in applications such as warehouse management where speech-based picking solutions guide workers through tasks and provide hands-free data collection capabilities. But, voice technology is less common in field service applications.

In part, this is because field service applications typically involve more complex operations and therefore, a more varied vocabulary for the solution to interpret. “Fundamentally, existing enterprise voice capabilities that originated in warehouse management and call center management are still dependent or codependent on server integration,” says Dan Villanueva, VP of marketing at Vanguard Voice Systems. “This architectural approach is the primary obstacle preventing the full voice-enabling of field service applications. After 20 years, only 8% of the warehouse market has adopted voice productivity in the warehouse. It’s a proven technology, but market adoption has been slow because of the complexity of the existing voice architecture.”

However, voice recognition engines are far more reliable now than they were in the past. Field service applications could benefit from voice-based navigation, data collection, data access, reporting, and task prompting. It’s now possible to use voice technology on smartphones, tablets, and other mobile devices to augment other types of data collection, including bar codes, RFID, and manual data entry, while allowing technicians to access and input information in the field. “Any field service technician with a phone can easily track their daily activities,” says Brad Wyland, VP of strategic marketing at Datria Systems. “You can track ticket management, dispatch, report time and materials for projects, and record travel time and expenses.”

These solutions can take a number of forms,

including phone-based systems that use interactive voice response (IVR) to perform worker order updates and dispatching and on-device solutions that marry voice with traditional workforce management applications. “Voice technology targeting field service applications has evolved to become a genuine mobile technology,” Villanueva says. “By that I mean voice functionality and voice-application integration can now be deployed to existing mobile field service applications completely from mobile devices and computers used in the field. In this scenario, the mobile application is voice-upgraded without changing the core application.”

Voice Unties Technicians’ Hands

Where is voice best utilized in field service scenarios? Typically in tasks where technicians are interrupted in their work by having to pick up a mobile device (or clipboard) to input data or access information, such as repair procedures or customer history. For example, workers could use voice technology to update repair orders while still using both hands to work on a piece of equipment, access directions from a mobile device while driving, or even update work-order status.

Applications where workers are wearing heavy gloves or have to operate mobile computers in bright sunlight are also a good fit for voice data entry. There is also potential for voice in emergency services applications, where first responders could update mobile devices while performing medical procedures or rescue operations.

Primarily, voice should help field technicians save time and improve accuracy while leaving their hands free to perform other tasks. “The only way to reduce errors and the length of this cycle — short of adding another human resource to handle data transactions — is to upgrade the mobile application so that voice commands can be used to collect



Dan Villanueva
VP of marketing,
Vanguard Voice Systems



Brad Wyland
VP of
strategic marketing,
Datria Systems

“Voice enables you to do 80% to 90% of mundane data entry consistently and accurately — and do it hands-free.”

Brad Wyland, Datria Systems

information and automated voice prompts to deliver the repair process information,” Villanueva says. “Examples include repair technicians in fleet management [trucking or aircraft] using MRO [maintenance repair and overhaul] applications or commercial or government workers performing vehicle inspections.”

However, Wyland cautions that no application can be addressed using voice data entry/access alone, particularly in field service. “Don’t look at voice as the only answer,” Wyland says. “There’s no real application that should be 100% voice. You need flexibility. Some things you speak, others you have to scan or enter with a keyboard. Find out where voice fits and where it should be added to the workflow.”

Both Datria and Vanguard have a number of field service customers using their voice technologies to automate workflows for thousands of technicians. The U.S. Forest Service, for instance, uses Vanguard’s solution for a mobile timber management application. In that case, voice helps improve worker safety, since employees are often working in harsh conditions that make traditional data entry difficult. The public works department in Clark County, NV, is also using Vanguard for a mobile inspection application that has reduced asset inspection time from 18 minutes to less than 4 minutes.

The WTC roofing services operation of Tremco Roofing and Building Maintenance uses Datria’s solution (integrated with SAP) to update job status, report hours and materials, and record travel expenses using mobile phones. Mobile, AL-based natural gas company EnergySouth deployed Datria for a trouble ticket management application that cut clerical costs by 50% by eliminating paper forms and manual data entry. Those types of benefits are typical. In warehouse applications that use voice, the technology typically cuts down transaction times for repetitive tasks, boosting productivity and reducing errors. In field service, the benefits primarily are found through consistency and accuracy of data collection (in addition to freeing the technicians’ hands).

“With voice, you can limit the types of data that can be entered in each field,” Wyland says. “They can be prompted with special instructions. You don’t want to have workers using screen entry for mundane items. Voice enables you to do 80% to 90% of mundane data entry consistently and accurately — and do it hands-free. “

Field service applications are more complex than traditional warehouse management solutions. “In comparison, the amount of data collected, the number of navigation functions, and the dependence on the mobile

worker solely to complete the task is much higher,” Villanueva says. “The key benefit of a fully voice-enabled field service application is the ability to transform the mobile device and application into a ‘collaborative partner’ for the mobile worker.”

Voice also has another advantage: It is inherently more intuitive for technicians to talk than to learn complicated drop-down menus or other data-entry methods. “One of the benefits of voice technology is the ability to reduce the training cycle and costs for deploying any new mobile application or training new employees,” Villanueva says. “On the other hand, for companies evolving their workforce from paper-based systems to mobile applications, a voice interface could serve as an easier transition for workforces that may to some degree be technology-averse. In these cases, voice may be a faster deployment approach compared to teaching complex keyboard commands and navigation steps.”

Voice Recognition Delivers

Many end users still have reservations about voice technology, often because they are primarily familiar with older voice installations or the type of recognition systems used in call center or warehouse applications. Others simply aren’t aware it’s even a viable option for field service. “The exposure is not where it needs to be,” Wyland says. “Some people’s only experience with voice is credit card billing and reservations, which have gotten better in past years. Those types of systems are accepting anything in the world somebody might say and still getting 50% to 70% accuracy. In business applications, you’re limiting the vocabulary to maybe 1,000 words, and you can get into 98% or 99% recognition.”

One key challenge for end users is typically determining where voice will enhance their field service processes, Wyland says. “How do we take what we do today on paper and voice-enable that the right way to get the right data?” he asks.

Finally, companies exploring voice technology for field service applications should take a measured approach, carefully determining where the technology can provide benefits, and deploying it with minimal disruption. “Many believe that voice technology is a simple plug and play technology,” Villanueva says. “Like any technology in the field, it requires a clear milestone process for deployment and training of the mobile workers to achieve best performance. Each workforce is different and will need their application’s voice upgrade refined to meet their specific requirements and operational environment.” •