North Carolina Department of Agriculture: Streamlining Field Inspection Data Capture

Background

The Structural Pest Control & Pesticides Division of the North Carolina Department of Agriculture & Consumer Services protects public health, safety and welfare by regulating the structural pest control industry and pesticide products used. The division also improves the quality of structural pest control services.

Old Paper-Based Process

According to field inspector Travis Snodgrass, the division's field inspectors had been using a paper-based data collection process for years, filling out multiple paper forms onsite, then mailing them back to headquarters on a weekly basis. "For each inspection that we completed, we had anywhere between one to upwards of five or six forms," Snodgrass said.

This paper-based process involved an enormous amount of repetition, from filling out inspector name to inspection site address, etc. over and over again. "We had to manually write that down by pen and paper, the exact same information for every single inspection for every single form--and then we'd go down our inspection checklist for each form," he said.

The completed forms then had to be physically mailed back to the office. According to Snodgrass, "The forms were mailed to our supervisor, one on each side of the state [the Eastern district and the Western district], and he would look at the forms, approve them, then take them physically to Raleigh where someone had to sit behind a computer to enter in all the data that was collected."

What's more, not every inspector's handwriting was particularly legible. This would cause the employees in charge of recording the information to have to constantly scan over the forms and decipher what inspectors were writing on them. The division's inspection process deals with pesticide product registration numbers, which are comprised of anywhere between five to 15 different sets of numbers. Getting just one of these numbers wrong could change the entire inspection form.

Because of this long, inefficient, error-prone paper-based inspection process, the Structural Pest Control & Pesticides Division began exploring alternative solutions that would improve efficiency.

> "It's not just about the money [saved]. The speed, the time, the accuracy--that kind of thing is improving--and it's just a much cleaner system. "
>
> - Dwight E. Seal, Western District Manager

Process with a Mobile Data Collection Solution

The Structural Pest Control & Pesticides Division now has 19 Windows-based tablet PCs deployed, using the Mi-Forms application. Though they're not standardized on a single device, Dwight E. Seal, the division's Western District Manager, says they're currently using products from Dell, Gateway, and Lenovo.

According to Seal, making the switch from a paper-based process to a Mi-Forms tablet-based solution wasn't always easy. "We don't have IT specifically assigned to our division--it's department-wide--so I had to get them to buy in... and it evolved as we went," said Seal. "We hit some bumps along the road, and had some differences of opinion on how to move forward, but we worked through it."

A crucial factor in this particular implementation was to deploy the solution in three distinct phases. During Phase 1, they started with three commonly used forms and worked to get them perfected. They also spent time learning the Mi-Forms application and how it operated, as well as how the database system worked.

For Phase 2, the division planned out a two-year process of expanding the system's functionality. After some brief budgeting issues, they were able to successfully finalize this phase of the project. "We're still learning some things along the way, but all-in-all it's been very successful," said Seal.

Buy-in at all levels -- from IT to end users, mid-management, and the secretarial staff -- was crucial to the success of the deployment. While some of the field inspectors showed initial resistance to the Mi-Forms solution, Seal said it didn't take long for them to adjust to the new setup. "Some people were not that computer/tech-savvy, and were confused. But after we demonstrated how it worked, I think now people wouldn't dare go back to the paper-based system," he said.

The Results
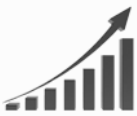
Massive increase in efficiency with pre-filled information in forms	Increase in accuracy, tracking, & accountability of field inspectors	Reduction of processing time from 4 weeks to 1-2 days	A net ROI of ~$220,000 and savings of $72,000 each year	A never-ending supply of forms, and happier inspectors

A key result according to Snodgrass has been the massive increase in efficiency. "With electronic data capture, we're able to input a license number and have everything pre-filled for us... and if we choose one selection on one type of question, it makes other selections as required," Snodgrass said. "So it makes the data more accurate, and makes it easier on the end user."

Another benefit realized by the division's field inspectors is the much lighter load of materials needed to perform an inspection. Instead of carrying around a stack of paper forms, they now just take their tablets.

Another result is a significant time savings throughout the process. "No matter how many times I click on a form, I never run out of them. Whereas with the paper forms, there was a limited supply and we were always shuttling paper forms back and forth to our office in Raleigh--as end users that are stationed throughout the entire state," said Snodgrass.

The Structural Pest Control & Pesticides Division recouped their investment in less than two years after implementing their Mi-Forms mobile forms solution.

Since the division is fee-supported, the new system has also helped ensure that license fees and pesticide registration fees are paid. "There's more tracking and accountability... making sure there's no lapses in fee payments. So it's helped out our bottom line with supporting our division and supporting what we do," said Snodgrass.