

North Carolina State Delivers Non-Credit Registration System in a Fraction of the Time and Cost

To improve registration and tracking of non-credit courses and employee training sessions, North Carolina State University created a single business application that streamlined both processes. NC State leveraged the Mendix platform to build the app quickly and collaboratively, delivering a solution in a fraction of the time and cost compared to alternatives. With that project under its belt, the university is expanding its use of Mendix to allow its 10 colleges access to a central platform to quickly build whatever they need.

Challenge

As a public institution, North Carolina State University's mission extends beyond the education of its 34,000 undergraduate and graduate students. It provides a community component as well, offering non-credit courses and training sessions each year to more than 600,000 local citizens. These sessions include continuing education courses, Six Sigma and OSHA certifications, professional development seminars and 4H camps.

Until recently, tracking registrants for these sessions was left up to the individual colleges and departments within the university. Some entities managed information on paper, and others in disparate databases such as Cvent, Access and Excel, leaving the university with little visibility into the true impact it was making on the community.

"We had no idea how much outreach we were doing," said Jack Foster, enterprise application services director at NC State. "We didn't know what areas we were reaching, what types of people we were reaching or how well the overall program was doing. Without a central system, there was no synergy, and reporting results each year at the university level required a herculean effort."

Elsewhere at the university, about a dozen departments were facing the challenge tracking information about ongoing required training for employees. To comply with state and federal regulations, employees and students in certain departments needed to take courses in health and safety, PCI training and other mandated disciplines.

"We had the same issue with reporting on mandatory training," Foster said. "Considerable manual effort was required to prevent people from being missed or falling through the cracks."

Solution

NC State needed solutions to these two problems – and it needed to move quickly. Each season that passed by using the old systems created new sets of mismatched data and put the university at risk of losing government grants if compliance issues were raised in the training process.

"We tried looking at separate solutions, but we came to realize the commonality between the two," Foster said.

Once the university decided on a unified approach, it looked at specific solutions. The team ruled out off-the-shelf packages due to the high cost and lack of flexibility. "We were looking at several million dollars over five years, and that was without the required customizations," Foster said. "We also considered building in-house using PHP or Java but it would have been too much for the resources we had."

Deciding to take a fresh look at its options, NC State evaluated cloud-based rapid application development platforms and ended up selecting Mendix. "The biggest advantages of Mendix were speed, flexibility and cost," Foster said. "Mendix would allow us to build exactly what we needed without being boxed in. We could jump-start the application, quickly get something into the hands of our users and refine it as we went."

Results

A small team of three, including two developers and a business analyst, commenced development in late October 2015 and delivered a Minimally Viable Product (MVP) in just eight weeks, launching the app just after the new year.

“Creating new apps usually takes several weeks just to set up the basics – structure, menus, etc.” Foster said. “Because Mendix provides default layouts, user management and more out of the box, we could jump right into building business functionality. On top of that, we used several modules from the Mendix App Store to kick-start development.”

The team took an agile approach, working with two university departments as pilot customers for the non-credit registration system. Representatives from the Industry Expansion Solutions and Environmental Health & Safety departments met daily with the development team to create user stories. Developers would then build out the required functionality and share their progress, incorporating feedback along the way.

“Using an agile approach to deliver an MVP was new to us,” Foster said. “While it took a while to ask the right questions, the process was worth it. It forced us to constantly re-prioritize our list of requirements, focusing on the core functionality and user experience. In the end, we delivered an app that everybody was happy with.”

In addition to Mendix’s visual development environment, Foster and his team value the platform’s instant cloud deployment and full DTAP cycle support. “During the development process, we were able to rapidly refresh environments, a process that could take up to a day in the traditional ERP world,” Foster said. “Now that we’re in production, we can seamlessly switch between deployment packages. If something breaks, we can easily roll back to a previous version.”

Overall, Mendix has allowed NC State to keep its team small and its costs down. With a team of four focused on continuing to enhance the non-credit registration system, the university has set its sights on delivering a flock of new apps. Work has begun on a new lab management system and the roadmap includes migrating a series of Java, PHP and Perl apps for managing processes like hazardous waste tracking and teacher licensure.

“With so many unique processes that cannot be served with off-the-shelf software, there is no shortage of needs for Mendix within NC State,” said Gwen Hazlehurst, Assistant Vice Chancellor, Enterprise Application Services at NC State University. “Our vision is to provide each of the 10 colleges that make up the university with a central platform that enables them to quickly build whatever they need, whenever they need it.”

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NC State University**



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