



MODERNSYSTEMS

CASE STUDY

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

MODERNIZING STUDENT INFORMATION SYSTEM ONTO THE MICROSOFT
PLATFORM

Introduction

The University of California, Santa Barbara is one of the top public research universities with approximately 23,000 students. A member of the Association of American Universities, UCSB hosts 12 National Research Centers. UCSB wanted to upgrade and modernize its complex student information system while preserving existing functionality. With help from Modern Systems, UCSB converted its code and data from its suite of Software AG ADABAS-Natural applications on an IBM mainframe to a platform based on Windows Server 2008 R2 Enterprise and Microsoft SQL Server 2008 R2 Enterprise.

Business Needs

Located approximately 100 miles northwest of Los Angeles, the University of California, Santa Barbara (UCSB) is organized into five colleges, 12 national institutes and centers, and offers 87 undergraduate and 55 graduate degrees. UCSB is ranked in the top 10 among all public universities by the U.S. News and World Report guide and its faculty includes five winners of Nobel Prizes.

While the university operated a mostly distributed IT infrastructure, the Student Information Systems and Technology department had become a central hub that handled business and academic processes for approximately 23,000 students. As requirements changed, UCSB looked for a new solution that would provide better flexibility and new functionality.

The student information system, which was written using SAG Natural syntax, ran on an IBM mainframe with an ADABAS database. The system performed well, initially handling core processes such as admissions and student records. However, administration of the system became increasingly challenging as needs expanded. "The core system that was originally intended for internal use needed to provide more self-service capabilities to students, staff, and faculty including web-based and mobile access," says Lubomir Bojilov, Chief Technology Officer and Student Information Systems and Technology Executive Director at University of California, Santa Barbara. "So over the last 15 years, approximately 40 additional applications were built-around and closely integrated with the student information system."

Project Details

In January 2010, UCSB began looking for a vendor that could provide a new solution. The university had originally considered an off-the-shelf product, but decided that it wanted to preserve the features it had developed in its existing solution. To maintain existing business logic and functionality while gaining maximum flexibility and expandability, UCSB decided to transform its code and data to run on a Microsoft platform with Microsoft SQL Server 2008 R2 Enterprise software and the Windows Server 2008 R2 operating system.

After a comprehensive bidding process, UCSB ultimately chose Modern Systems to help with the project. Following a successful proof of concept, Modern Systems and UCSB refactored the mainframe database to SQL Server 2008 R2, and began transforming the suite of applications using the Rapid Program Modernization tool set (part of the Modern Systems Architectural Transformation solution), the Microsoft Visual C# development tool, and the Microsoft Visual Studio 2010 development system.

UCSB, which is moving toward a more service-oriented architecture (SOA), replaced the software that had connected the mainframe application to web servers with a Windows Communication Foundation interface. A component of the Microsoft .NET Framework 4, Windows Communication Foundation enables fast communication between the Internet Information Services 7 web servers and the SQL Server 2008 R2 database. The university also created a single sign-on solution with Active Directory Federation Services so that staff, faculty, and students could access multiple applications with one set of credentials.

Solution Benefits

By migrating its student information system to a modern platform, the University of California, Santa Barbara has gained a better foundation for implementing new capabilities, easier management, and uninterrupted service for thousands of staff and students.

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Lubomir Bojilov, Chief Technology Officer and Executive Director, Student Information Systems and Technology, University of California, Santa Barbara

A Platform For New Technologies

Based on the new platform, UCSB could maintain its existing functionality while gaining new capabilities. Although the university is currently working on enhancing its current services, it is already looking forward to new projects. “We needed a platform that would enable us to standardize. We have complex, distributed systems that require a more modern type of development,” explains Bojilov. “Going forward, we are looking to expand the student services platform and functionality. For example, we’re looking at mobile technologies and more dynamic ways to provide data.”

Streamlined Management

Management is also easier with a solution that can be centrally managed with other IT infrastructure. “In the past, coordinating efforts between the data center environment and the mainframe took up a lot of time,” says James Kinneavy, Associate Director for Enterprise Architecture and Technologies at University of California, Santa Barbara. The university has been able to reduce management overhead significantly by standardizing on a Microsoft platform.

However, centralized management isn’t the only benefit—UCSB anticipates that connecting with new applications will be easier too. “We support numerous applications that have a large number of interdependencies,” says Bojilov. Implementing changes and integrating new systems and data sources will be much easier on a standardized platform.

Conclusion

With help from Modern Systems, UCSB was one of the first universities to convert its entire student information system to a new environment. “Our student information system went live on the Microsoft platform over a holiday weekend, and no one noticed that we had made a conversion,” Kinneavy says. “There was no disruption in service, and we have tens of thousands of users.”