

RUTGERS BUSINESS SCHOOL TAPS THE CLOUD FOR I.T. TEAM SUPPORT

Kevin Dowlin and his IT team deployed state-of-the-art infrastructure and classroom technologies for Rutgers Business School users, with help from IaaS and Microsoft Azure.

At a Glance

ORGANIZATION:

Rutgers Business School

LOCATIONS:

Newark and New Brunswick, N.J.

EMPLOYEES:

Approximately 550 (faculty, staff and adjunct professors)

I.T. STAFF: 8

DESCRIPTION:

Founded in 1929, the Rutgers Business School offers undergraduate and graduate degrees with programs in accounting, business administration, finance, information technology, pharmaceuticals and supply chain management.

By leveraging cloud services, the burgeoning school can deliver rapid virtualization and easy single sign-on without cutting corners.

Photography by John Emerson

The Rutgers Business School has watched enrollment in its undergraduate program skyrocket by more than 40 percent over the past four years. Today, nearly 8,000 students attend classes on its two campuses in Newark and New Brunswick, N.J.

"Our dean likes to say that if the business school were a separate institution, it would be the second-largest university in New Jersey," says Kevin Dowlin, executive director for the Rutgers Business School's Office of Technology and Instructional Services.

Yet there's another, much smaller number that's just as meaningful to Dowlin: As the demand for additional IT services and support grows alongside enrollment,

the 70 technology-enabled rooms and more than 1,400 computers at both state-of-the-art IT facilities are supported by a lean IT team of eight people.

How do they do it? By capitalizing on the expertise of professional IT services firms and taking advantage of cloud-based Infrastructure as a Service (IaaS) solutions.

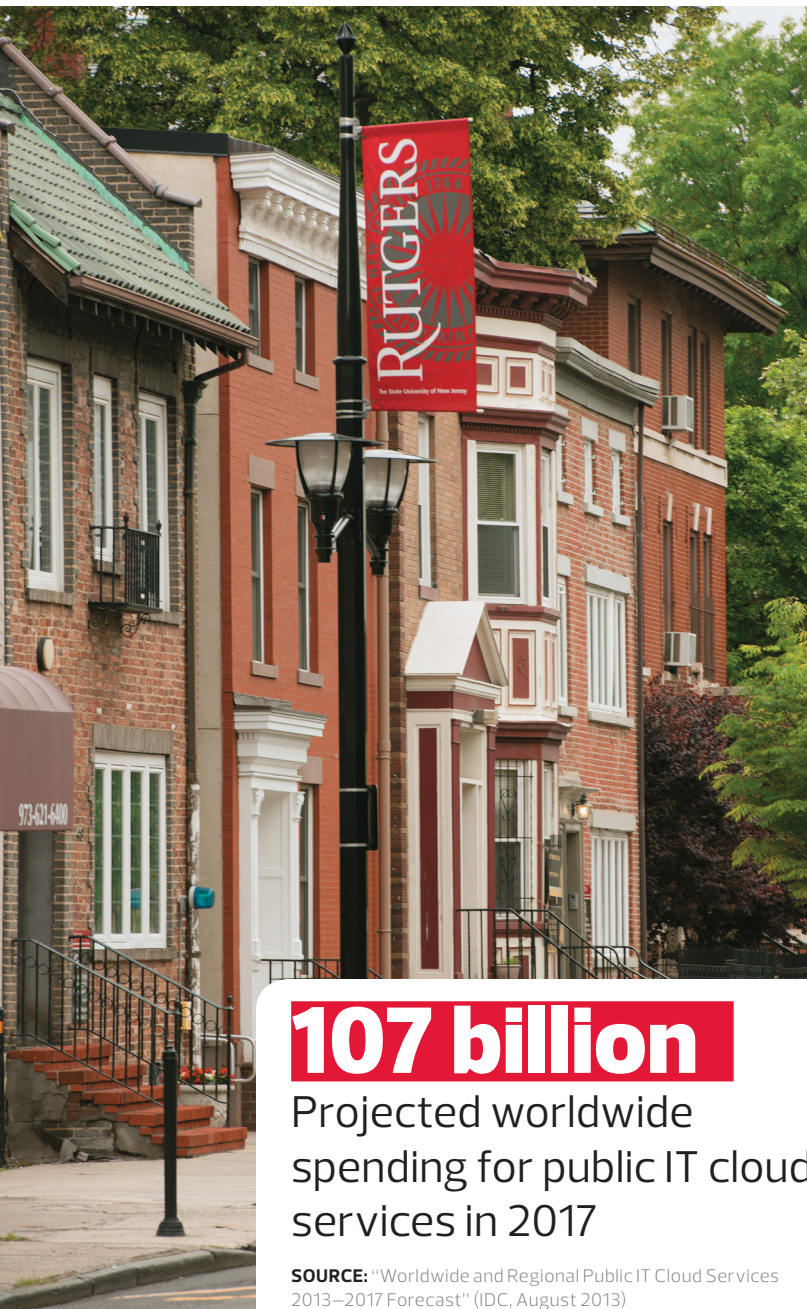
"Certainly, I would love to have a giant IT staff. But we can do a lot with a small group if we manage things right," Dowlin says. "People in higher education shouldn't be reluctant to outsource IT services when it makes sense. Hiring more people or building an application whenever new challenges arise is expensive — and inefficient. It's much better to find an application that already does what you need, then pay for professional services to implement it."

The strategy paid off late last year when RBS deployed Microsoft Azure, an IaaS platform that provides server, storage, networking and related capabilities. Dowlin's IT staff subscribed to Azure computing resources to run Microsoft Active Directory Federation Services (ADFS), which allows faculty, staff and students to use one user name and password to access the institution's new portfolio of cloud-based applications for business automation, collaboration and customer relationship management (CRM). Since the fall, the IT team has delivered a host of important new services while also making them easier and safer for end users to access.

"Moving to the cloud and federation services is similar to building a road," Dowlin says. "The benefit is not in building the road itself; it's using the road to get somewhere. For me, that means bringing more value and services to my organization."

Nonstop Innovation

Change has been constant at RBS since Dowlin arrived nearly five years ago. The institution transitioned from sharing university buildings and IT resources with other departments to opening its own facilities and launching a dedicated IT infrastructure. The business school's 55 classrooms and eight computing labs are models for the new era of digital learning and instruction: Each classroom provides a computer-powered podium, digital projectors, network inputs for mobile devices and touch screens with annotation capabilities. Some also include cameras for capturing lectures and other content on video, to enhance distance learning initiatives. The wireless network consists of more than 140 access points throughout the two buildings, delivering reliable access to applications and other information that's essential to the business curriculum.



107 billion

Projected worldwide spending for public IT cloud services in 2017

SOURCE: "Worldwide and Regional Public IT Cloud Services 2013–2017 Forecast" (IDC, August 2013)

To get the most out of the new infrastructure, IT staff identified a few applications that could be provided by vendors via Software as a Service, which makes the programs available to the school's staff members on a pay-as-you-go basis. The lineup includes Microsoft Office 365, a cloud-based version of the widely used Office suite; Microsoft Lync, for video meetings and desktop sharing; Salesforce.com, a CRM program that supports recruiting and marketing efforts; Microsoft SharePoint, for collaboration; and a faculty reporting system. But Dowlin was adamant that a raft of new services should not be launched without first addressing an essential consideration for end users: easy access through single sign-on.

"I came up through the support side of IT, where part of my job was to help people deal with password challenges," Dowlin says. "Multiple passwords and those that automatically expire after a period of time create complexities and confusion for end users and support nightmares for the IT staff. I became a fierce proponent of single sign-on."

A Pathway to the Cloud

The goals were clear: to leverage cloud services when possible, launch new applications and make all resources available through simple but secure sign-on capabilities. But, Dowlin says, "We didn't know how – or have the time – to make all this happen. As with any complicated IT project, there were things we didn't understand."

Dowlin and his team met with a professional services team from CDW for help. "CDW is our preferred vendor for anything IT, and with their help, we were able to work through this project at a rapid pace," he says.

To deliver single sign-on capabilities across the institution's entire IT services portfolio, CDW recommended Microsoft's ADFS, which would build on the access identities in RBS's existing Active Directory Domain Services (ADDS) in its own data center. To simplify management responsibilities for Dowlin's lean IT staff and reduce capital expenditures, CDW recommended running ADFS on virtual machines hosted in Microsoft Azure.

"Our staff has been implementing ADFS for years, and we also have a great deal of experience with cloud-based services, including Microsoft Azure," says Kent Compton, a Microsoft solution specialist with CDW. "We scoped out the design and determined how the ADFS servers and virtual machines should be configured within Azure."

In total, RBS subscribes to six servers in the Azure cloud: one for the ADDS domain controller, one for directory synchronization and four for ADFS. The ADFS quartet

Smart Help Pays Off

When Rutgers Business School's IT team needed single sign-on capabilities for new cloud-based applications, they turned to CDW.

According to CDW's Kent Compton, a Microsoft solution specialist, a CDW engineer worked with the Rutgers IT group to create the first virtual machines in the Microsoft Azure Infrastructure as a Service (IaaS) platform and to install and configure Active Directory Federation Services (ADFS).

By putting ADFS on virtual machines in Azure, Rutgers gave Microsoft responsibility for managing the underlying hardware, hypervisor, storage and networking resources required to support the technology. "You always own your data and only need to manage the applications, guest operating system and virtual machine," Compton explains.

RBS accesses Azure services by paying an incremental subscription fee out of an operating budget, eliminating the need for large capital investments to launch the project.

With ADFS in place within Azure, a CDW engineer built the sign-on federations to the institution's Microsoft Office 365, Microsoft SharePoint and Salesforce.com applications. The job was made easier through application programming interfaces (APIs) designed to facilitate the connections.

"Our IT staff and CDW's engineer worked with the individual solutions vendors to find and configure the proper APIs to work with federation services," says Kevin Dowlin, executive director for the Office of Technology and Instructional Services at RBS.

The team needed four days to complete the federation step, but the CDW engineer stayed for another week to train the IT staff on how to use ADFS and Azure and to configure a virtual private network between their data center and Microsoft's IaaS platform.

"We didn't have to hire someone full time to implement and manage the environment," Dowlin says. "CDW did the launch and provided a knowledge transfer, so now we understand how to maintain and fix the infrastructure if something breaks." Plus, the project came in under budget, he adds.

Proper upfront planning was one of the secrets to the endeavor's success. "Our methodology is based on strong planning and design components," CDW's Compton says. "When you think about all the variables up front, you eliminate surprises during the implementation."

Clear Return

Why move to an Infrastructure as a Service solution and federated directory services? Rutgers Business School IT personnel say the technologies:

- Provide resource elasticity by automatically scaling up resources as needed.
- Achieve significantly higher levels of system redundancy and security.
- Reduce management overhead for IT staff
- Lower capital expenses.
- Eliminate low server utilization rates that add to the expense of on-premises servers.
- Simplify security practices and reduce user frustration with single sign-on services.

consists of two proxy and two primary servers. Locating the domain controller within Azure ensures that if the business school loses Internet connectivity between its data center and Azure, users with alternate Internet links can continue to log in.

"It's all about maintaining high availability wherever possible," Compton says.

Using cloud-based resources to maintain uptime is another goal that resonates with Dowlin. When Hurricane Sandy struck the East Coast in 2012, Newark lost power for three days, forcing the school to shut down until the city recovered.

"Based on that experience, we wanted to move critical components out of the data center to promote greater availability," he says. "Azure is based on a high-availability architecture, with redundancies throughout the environment."

Finding ROI in the Cloud

Today, nearly half of Rutgers Business School's 300-person staff and full-time faculty take advantage of the new cloud-based services.

"We're seeing a lot of excitement around the value users are realizing as they leverage Salesforce, Lync and SharePoint," Dowlin says. By the fall 2014 semester, the entire

business school staff will have full access to those capabilities. "Now that the groundwork is set, the sky's the limit. We can roll out these capabilities to anybody who needs them."

The IT department also reaps other benefits from the new environment. Supporting directory services in the cloud eases the team's management burden. The Azure infrastructure also speeds up the time to provision new computing capabilities — a real plus for an IT staff that copes constantly with growth demands.

"In the past, we didn't have the level of expandability that's become possible with the Azure platform," Dowlin says. The IT department can now spin up new virtual machines in less than an hour.

Prior to the Azure project, spikes in traffic could bring down an internal data center web server — when an important news story broke about Rutgers, for instance. But now, Dowlin reports, "when the server is in a virtual machine in Azure, additional resources will automatically become available to handle the higher loads."

While most of the returns from the institution's cloud migration are clear, Dowlin says his team will take a hybrid approach for the foreseeable future. Some end users will rely on cloud-based Office 365 accounts, while others will continue to use traditional on-premises Office implementations. Such flexibility is particularly essential for higher education institutions due to the variety of internal policies and regulations governing student and other data.

"As guardians of data, we'll be able to store sensitive information locally and keep it directly under our control," Dowlin explains. "But we can move the vast majority of data that doesn't fall under such tight restrictions out to the cloud."

As more users take advantage of cloud services and single sign-on, they're also giving Dowlin the best feedback a former support professional could ask for — silence.

"Much of what we do in IT happens behind the scenes," Dowlin says. "As long as everything is working correctly, no one says anything to us. End users may not understand how complicated it was to give them single sign-on and access to Lync or Salesforce. They just know that everything works. We wouldn't have been able to roll these services out and achieve that level of success without Azure and ADFS."



Find out how colleges and universities are using the cloud to meet security threats head on: <http://www.edtechmag.com/higher/secure>.



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