

## CASE STUDY



*Service Quality Matters™*

# Northwestern University Turns to Brix Networks to Assure Performance and Quality of Its Next-Generation IP Network and Services

## INDUSTRY

Higher Education

## ORGANIZATION

Northwestern University

## BUSINESS PROBLEM

In the process of phasing out a legacy TDM phone network in favor of a next-generation IP network supporting campuswide VoIP services, Northwestern needed to continually monitor performance and quality to ensure it could meet user expectations

## BRIX SOLUTION

### SOFTWARE:

BrixWorx™—Service assurance and performance management software engine

### HARDWARE:

Brix Verifiers—Supports automated testing and live call monitoring

## KEY BENEFITS

With automated active (ondemand) testing, the Brix System is constantly monitoring and measuring the performance of Northwestern's next-generation network as well as ensuring the quality of newly rolled out VoIP services.

While gaining competitive advantages and controlling operational costs with technology upgrades is commonplace in the corporate world, it is becoming increasingly more important for higher education institutions as well, as they strive to attract prospective students. For Northwestern University, it was becoming prohibitively expensive for the school to support an aging telecommunications infrastructure in addition to a separate and expanding Internet Protocol (IP) network. As a result, the university decided that it was time to phase out its traditional telephone infrastructure and make the necessary upgrades to support IP telephony and advanced, converged communications services that would ultimately benefit students, faculty, and staff.

With 18,000 phone lines spread across two large campuses, transitioning Northwestern's legacy phone system to a Voice over Internet Protocol (VoIP) system would not be an easy task as major network upgrades were required to support the new service. "We saw this as an opportunity to not only add VoIP services, but to upgrade our IP network to support more advanced communications services and applications going forward," said David Carr, director of telecommunications and network services for Northwestern.

For Carr, performance and quality of the network was critical and needed to be addressed from the onset of the project to prove the network could handle the increased demands of VoIP and other future Session Initiation Protocol- (SIP-) based services. While the existing time-

division multiplexing (TDM) system was at the end of its life, it was very reliable. Those using the traditional Northwestern phone system rarely experienced any problems, which was creating high user expectations for the new IP telephony service.

*"With high user expectations, we implemented the Brix System to verify that our IP network and services were operating as they should."*

"By facilitating communications for the entire university, we truly function like a Fortune 500 business for the users we serve," said Carr. "As we prepare to roll out IP telephony services to a large number of users, we experience the same issues that large enterprise businesses do and managing service quality and network performance is a must for the project to be a success."

To provide quality voice, video, and data services, Carr sought out a carrier-proven service assurance solution that could support the project throughout its lifecycle—from pre-deployment network assessment, to service qualification, ongoing operational monitoring, and service level verification. The solution he found was Brix Networks' converged service assurance solution, the Brix System.

"We needed a solution that could continually monitor service quality across our network infrastructure, and Brix Networks offered the ideal solution," added Carr. "With high

user expectations, we implemented the Brix System to verify that our IP network and services were operating as they should.”

In the first phase of the project, Northwestern deployed Brix Verifiers, test and monitoring appliances, at each routing location across its campus mesh network. Using the BrixWorx central-site correlation and analysis software engine, Northwestern commissions active (on-demand) test calls from Brix Verifier to Brix Verifier to constantly measure call quality throughout the network infrastructure.

Additionally, as Northwestern readies buildings for IP telephony services, Carr installs a Brix Verifier at the location to test and monitor performance and quality to the building. This testing is an important qualification measure to prove performance and quality will meet expectations.

The information generated from this continual testing is collected by BrixWorx to provide reports that show a Mean Opinion Score (MOS), which represents a level of call quality. By establishing key performance indicator (KPI) and MOS thresholds, BrixWorx alerts Northwestern’s IT operations group when these thresholds are violated. With integration of BrixWorx into its network management system, the operations group receives alerts to quickly identify issues and take the necessary corrective course of action.

“We’ve just recently finished the first phase of the project and Brix Networks has been instrumental in the process as we qualified the network to support IP

telephony services,” stated Carr. “The network is now being used to provide traditional phone services to our users and we’ll soon begin rolling out IP phones in manageable phases.”

In the next phase of the project, Northwestern will be installing SIP-enabled phones throughout the network to offer advanced features. Northwestern has chosen to standardize on SIP for its communications services to offer more advanced IP-enabled services, such as video conferencing and presence capabilities.

*“Quality matters for us as we continue to upgrade our network and roll out new IP services.”*

“Quality matters for us as we continue to upgrade our network and roll out new IP services,” said Carr. “While Brix Networks has helped us measure, monitor, and assure performance and quality, we feel that we’ve barely scratched the surface of what the Brix System can do for us. In addition to the active testing we’re doing today, we’d like to use the Brix System in the near future to monitor live calls so that we can better measure the user experience.”

With its service assurance solution from Brix Networks, Northwestern is rolling out its new IP telephony service with confidence that it will exceed the quality expectations that its diverse user base demands.

## ABOUT NORTHWESTERN UNIVERSITY

Founded in 1851, Northwestern University is a private institution of higher education located in Illinois. It combines innovative teaching and pioneering research in a highly collaborative environment that transcends traditional academic boundaries. Northwestern provides students and faculty exceptional opportunities for intellectual, personal, and professional growth in a setting enhanced by the richness of Chicago. The University has two campuses on Lake Michigan, in Evanston, Ill., the first suburb north of Chicago, and in Chicago, near the Magnificent Mile.

## ABOUT BRIX NETWORKS

Brix Networks is a global provider of converged service assurance solutions that allow the world’s largest service providers and enterprises to offer reliable and high-quality experiences in voice, video, data, and mobile services to their customers, partners, and employees. The company brings a proven heritage of IP expertise unique to the service assurance marketplace, and collaborates closely with its customers and partners to assure the delivery of any IP-based service over any network to any endpoint. The company also offers selfservice testing portals ([www.TestYourIPVideo.com](http://www.TestYourIPVideo.com) and [www.TestYourVoIP.com](http://www.TestYourVoIP.com)) that enable users to independently measure the quality they are receiving from their interactive IP-based video and VoIP services.



Service Quality Matters™

Brix Networks  
285 Mill Road  
Chelmsford, MA 01824  
978.367.5600 tel  
978.367.5700 fax  
888-BRIXNET  
[www.brixnet.com](http://www.brixnet.com)  
[info@brixnet.com](mailto:info@brixnet.com)

© 2007 Brix Networks, Inc. All rights reserved. Brix, Brix Networks, Brixnet, BrixWorx, Service Quality Matters, and the Brix Networks logo are trademarks of Brix Networks, Inc. All other company or product names mentioned may be trademarks of their respective holders. Specifications and information contained herein are subject to change without notice.