5 strategies to simplify campus network management

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College and university IT staff need tools and strategies to help them easily support an ever-growing array of technologies, including campus networks that are becoming increasingly complex.

New technologies in higher education are enabling breakthroughs in scientific research. They're connecting learners with subject matter experts from around the world. They're improving the student experience, while also supporting the work of faculty and administrators.

However, these advancements create additional challenges for campus IT staff, who must install, support and manage new systems and the networks — often without a corresponding increase in personnel.

In many cases, it's possible for colleges and universities to bring entire networks onto a single platform.

A survey from the Chronicle of Higher Education found that colleges and universities are struggling to hire and retain employees and IT is the area most affected. Nearly three out of four respondents (74%) said hiring IT staff has been a "moderate" or "serious" problem for their institution — and this situation isn't likely to improve any time soon.[1]

As a result, campus IT staff often find themselves stretched thin. Fortunately, there are solutions available that can help IT staff do more with less. In this guide, discover five key strategies for making campus networks easier to manage.
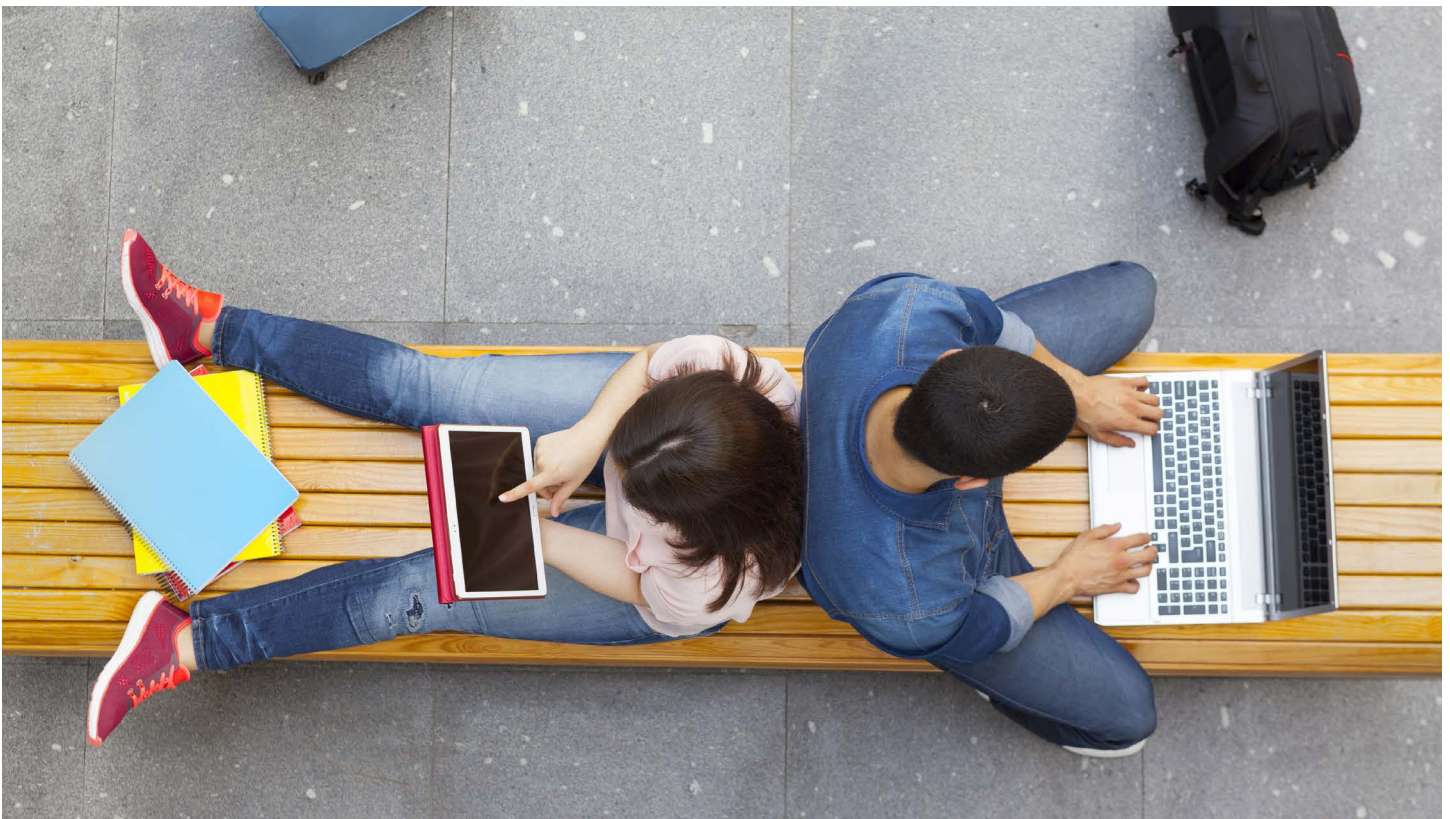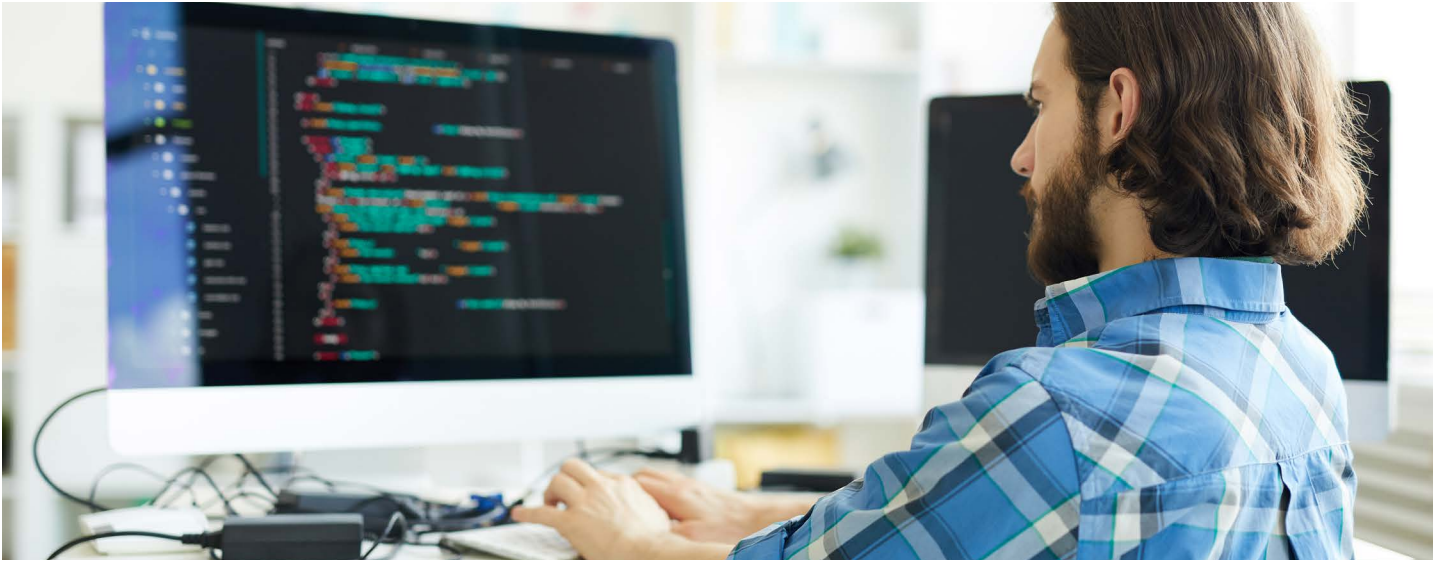
Benefits of a single provider for internet, networking, voice and connectivity, and entertainment solutions

- Reduce administrative complexity.
- Rely on only one number to call for support.
- Gain cost efficiencies.
- Easily integrate new services with solutions that are designed to work together.

1. Modernize your IT infrastructure

Modern network technology can simplify network operations and management dramatically through built-in automation and other innovative features that might not have existed the last time you upgraded your IT infrastructure.

For instance, software-defined networking allows you to centralize management of your network, making changes quickly across multiple sites with a few simple commands. Intelligent automation driven by AI and machine learning technology enables network components to adapt dynamically to changing traffic patterns or conditions, removing the need for manual intervention or administration. Modern plug-and-play components with dynamic configuration can easily be swapped out for new ones without requiring hours of installation and setup.

In many cases, it's possible for colleges and universities to bring entire networks onto a single platform. These all-in-one solutions are ideal for IT-lean teams currently tasked with maintaining multiple network solutions at one or more locations. Many integrated networking platforms can include routers, switches, WiFi, SD-WAN and security that, as a modular solution, simplifies management.

A modern network infrastructure is also typically more secure. Security breaches can not only be quite costly — one estimate says the average data breach costs educational institutions $3.7 million[2] — but they can also occupy several hours of staff time in restoring systems to their original state and tracing the source of the attack. With a modern network infrastructure, including security features like anti-malware, URL content filtering and DDoS protection, attacks are less prone to succeed.

2. Consolidate service providers

The network architecture at many colleges and universities consists of a patchwork of solutions created over the years to meet expanding needs. The resulting network often relies on multiple vendors providing services or hardware with little to no knowledge of how their particular components contribute to the organization's IT operations as a whole.

If there's a network outage or performance issue, IT personnel must hunt down the part of the network at fault before they can contact the right vendor for a resolution. And even then, they can be met with resistance to solve the problem as multiple vendors may point blame at each other. Likewise, when hardware replacements or firmware upgrades are required, it's up to the IT team to make sure these changes won't interfere with existing integrations that keep the network running.

Transitioning to a single provider for networking and connectivity services cuts down on this administrative complexity. With a single, trusted partner delivering networking, connectivity and security services, there is just one number to call for support. What's more, network solutions are designed from the outset to work together, with simplified processes for maintaining components and adding new locations. Just as important, a single provider of multiple services can help you discover cost efficiencies in network design and ensure that your solutions can adapt to support future innovation.

3. Make the network visible

Your IT team should have full visibility into information such as how much traffic is on your network, how much bandwidth is being consumed, what applications are being used, which devices and users are connected, traffic throughput speeds and signal coverage for wireless access points.

Having real-time insight into these aspects of your network is critical for managing its health, performance and security. It allows IT employees to manage your network more efficiently as well as proactively, making troubleshooting much simpler and even addressing potential problems before they occur.

It's much easier to make effective decisions when you can view all of this information in one place, using a single dashboard that captures data from both your wired and wireless network infrastructure. This allows you to monitor the health of your network, establish effective policies and adjust configurations and settings as necessary to optimize performance. For instance, you can leverage capabilities such as traffic shaping to prioritize critical applications for faster and more reliable performance.

A single, centralized view also makes it easier to manage network security. It simplifies the administration of firewalls, unified threat management and intrusion detection, offering comprehensive reporting for a holistic view of network threats. Managing your network from a central portal that collects information across multiple components gives you greater control of your network in less time — and unifying your network services under a single provider makes this easier to accomplish.

The average cost of a data breach in higher education is

$3.7M.[3]

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4. Ensure your networks can scale

The demands on campus networks are growing exponentially. Teens ages 15-17 — the lion's share of college students for the next several years — say they're online "almost constantly," according to the Pew Research Center,[4] and "meeting students where they are" is one of the top IT issues in higher ed today, as reported by EDUCAUSE.[5] This means designing and building the smart campus of the future, and the only way to do this is with a robust network infrastructure.

If your network isn't designed to scale easily, then you'll have a hard time keeping up as your needs expand — and your IT team will spend countless hours adding, installing and configuring new network components to increase capacity. This piecemeal approach to network expansion often results in a network that is haphazardly designed rather than carefully planned, creating additional complexity that becomes even costlier and more time-consuming to manage.

With a scalable network, expansion is much simpler and takes less time. Plug-and-play components can be added to the network and provisioned automatically without the need for manual configuration. And in many cases, capacity can be increased using a simple programming interface.

5. Opt for managed services

Managed network services can tremendously reduce the burden on overextended IT departments. With a managed solution, knowledgeable and highly qualified experts are available 24 hours a day, seven days a week to maintain, support, troubleshoot and replace network infrastructure. This allows colleges and universities to keep their networks running smoothly without having to commit their own IT personnel to the task.

A managed services provider can ensure that firmware and security updates are scheduled and automated across the network, keeping all systems secure and up to date. A managed services partner also installs and maintains the hardware for WiFi, firewalls and routing without any capital investment required. Co-managed services give institutions centralized control over network policies and configuration options, while expert support remains available 24/7/365.

50%

of teens ages 15-17 say they're online "almost constantly."[6]

This results in improved network performance, faster problem resolution and a smarter allocation of limited resources that can enhance the user experience. With managed services, campus IT staff are freed up to support students and faculty more effectively in using technology to transform teaching, learning and research.

This is a key reason why the number of organizations opting for managed network services is exploding. In fact, the global market for managed network services is expected to exceed $207 billion by 2035, a compound annual growth rate of 10.5%.[7] This growth in managed network services is being driven by the need to reduce costs, improve network performance and keep up with rising bandwidth demands among small to medium-sized enterprises in particular. More and more colleges and universities that struggle to support an expanding range of IT services, are discovering that managed network services provide an ideal solution.

Find the right approach to streamline network management

As colleges and universities continue to adopt new technologies, the IT teams supporting these systems take on additional responsibilities. By rethinking the design and management of their networks and adopting these five strategies, institutions can streamline IT operations and meet the needs of stakeholders more effectively.

Learn how Spectrum Enterprise® solutions, backed by 100%, 24/7/365 U.S.-based support, can help you simplify network management and advance your IT modernization efforts.

Learn more

1. Megan Zahneis, "Higher Ed's Hiring Challenges Are Getting Worse," The Chronicle of Higher Education, March 31, 2023.
2. Natalie Schwartz, "Data breaches cost higher education and training organizations $3.7M on average in 2023," Higher Ed Dive, Aug. 1, 2023.
3. Ibid.
4. "Teens and Internet, Device Access Fact Sheet," Pew Research Center, Jan. 5, 2024.
5. "2024 EDUCAUSE Top 10, #6: Meeting Students Where They Are," EDUCAUSE, Oct. 16, 2023.
6. "Teens and Internet, Device Access Fact Sheet."
7. "Managed Network Services Market Size & Share, by Component," Research Nester, June 13, 2023.

About Spectrum Enterprise

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