

# On Campus, SD-WAN Solutions Stop Network Congestion



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Citizens of tomorrow. Bright young minds. Our nation's future.



With the increased bandwidth today's higher-ed students are using, it's critical for campuses to have SD-WAN solutions in place to handle the increased network traffic.

A diverse, millions-strong contingent of budding professionals, higher-ed students carry many labels — and to campus technology staff, 'bandwidth hogs' may be the most pressing one. As one of the first generations to grow up with digital-era tech, 18-to-24-year-olds are great at pushing campus Wi-Fi to its limits and have a low tolerance for congestion.

Because of this, improving bandwidth ranks high on the average institution's list of priorities. With their focus on bandwidth prioritization and service quality, SD-WAN solutions can help. The technology is a perfect counterbalance for networks supporting thousands of users. Even better, it's built to manage traffic from the bandwidth-hungry services students consume, improving content on one end and network performance on the other.

[Higher Ed: A World Built for SD-WAN Solutions](#)

Campus Wi-Fi is no longer a luxury for high-traffic spots like libraries and student unions. Instead, a higher-ed institution without consistent wireless access is like a library without books: lacking at best, useless at worst.

Unsurprisingly, this expectation has grown with the number of connected devices on campus. Policies requiring students to own certain devices and tuition plans that include the purchase of laptops, tablets, or other education tools only complicate matters.

Then there's the interminable popularity of digital content. In an average day, one student may stream their favorite TV show as they prepare for class in the morning, attend multimedia-heavy courses throughout the afternoon, listen to streaming music as they walk from building to building, and retire to their dorm for a night of online gaming. Multiply this routine by hundreds or thousands of students, each with a smartphone, a laptop and a tablet, and it's easy to see the strain even low-use students can place on their campus networks.

Combined with uses such as lecture streams and video calls with parents, these factors comprise a user base that is large, extremely technically demanding, and unafraid to express their expectations regarding network quality. While they could also add up to an extremely difficult job, SD-WAN solutions are great at improving bandwidth management — and are designed for the exact traffic higher-ed students tend to generate.

*If building a consumption-proof network from the start isn't always possible, adding solutions that optimize the very kinds of traffic students tend to generate is.*

## Why SD-WAN Works on Campus

An organism as large as a campus data network is rarely as simple or cohesive as it may first appear. Depending on factors such as architecture and location, the networks users rely on may be served under multiple individual pipes, with physical segmentation techniques in place to effect privacy, performance, and uptime.

In perfect conditions, this box-by-box approach may be enough to ensure data goes in the right direction at the right speed. However, conditions are rarely perfect. Taken in consideration with the demands higher-ed students often place on Wi-Fi networks, SD-WAN is so situation-appropriate it could have been purpose-built for campus bandwidth management.

Because SD-WAN can serve as a virtual overlay to segmented networks, it effectively treats the entirety as a smaller number of pipes — for example, turning six disconnected networks into one or two virtual ones. Furthermore, it can identify and optimize various types of data, then apply policy as defined by network administrators. For example, it could send traffic from a livestream lecture over the highest-bandwidth pipe available and relegate video calls on the public network to a lower-priority tier of service.

Of course, SD-WAN also works on the inverse, splitting single pipes into multiple virtual lanes for privacy and performance. But in terms of congestion fighting, grouping is the star — especially when used in conjunction with the technology's powerful baseline optimization features.

## Optimizing the Campus Network

To be clear, SD-WAN solutions don't necessarily need policy guidance to optimize bandwidth on the campus network. They automatically categorize services by factors like bandwidth needed and packet-sequence sensitivity, giving real-time traffic higher priority than static content; this is important, since the same lost packets that might cause a webpage to load slowly could make a video or VoIP call unintelligible.

While this may sound like a quality-of-service move, it can also have significant positive impacts on bandwidth usage. For example, financial-sector organizations often see drastic reductions in usage after adopting SD-WAN technology, allowing them to move to lower data packages.

These are just a few ways SD-WAN can tackle bandwidth issues. And when it comes to uptime and quality of service, the technology can automatically route around network outages, with traffic optimization ensuring stable quality and speed. On the administrative end, SD-WAN also gives administrators enhanced insight into what's using their bandwidth, which can inform policy and network architecture decisions — two factors that play a major role in overall bandwidth consumption.

## SD-WAN: A Win-Win Solution

Bandwidth and related problems like congestion can inflict serious problems upon a higher-ed institution, its employees, and its students. If building a consumption-proof network from the start isn't always possible, adding solutions that optimize the very kinds of traffic students tend to generate is.

Among several other advantages, this is where SD-WAN shines brightest in a higher-learning environment. Instead of forcing administrators to throw more bandwidth at the problem or rebuild parts of the congested network, this tool helps them make better use of the resources they currently have.

In other words, SD-WAN is a rare win-win-win solution for higher ed, with students, staff, and high-level decision-makers all benefiting in different ways. There are several bandwidth-optimization techniques campus IT can deploy, but few that offer relief on that level — making it a technology few institutions can afford to ignore.

*DOWNLOAD OUR FREE EBOOK: SD-WAN FOR UCAAS:  
OPTIMIZING BANDWIDTH ON ANY NETWORK »*