5 THINGS

Schools Should Consider Before
Adopting Cloud-Managed Networks

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Table of Contents

Timing Is Everything

Introduction

Technology isn't just about having a brilliant idea. It's about adopting the right idea at the right time. Get it right, and you're a superhero. Time it wrong, and you're the team mascot for disappointing results.

In fact, the graveyard of technology is riddled with failed ideas — or more accurately, good ideas that were simply ahead of their time.

Who can forget the General Motors EV-1? As the first mass-produced electric car, the EV-1 was a smart idea with a world of promise. But ultimately, GM decided that electric vehicles were too niche, scrapping the program and sending most vehicles to the crushers. The modern resurgence of electric vehicles, however, has proven that there's a tremendous market for these cars. The technology just needed the right time.

The same is true for cloud-managed networks (CMNs) for education. Plenty of schools, colleges and universities are jumping into the cloud and realizing the benefits of networking solutions, such as cloud switching and cloud Wi-Fi - but is now the right time for your school to follow suit?

Like the GM EV-1, cloud-managed networking may be ahead of its time for your school. But you won't know until you carefully weigh the pros and cons. Only then can you determine if this technology is right for you.
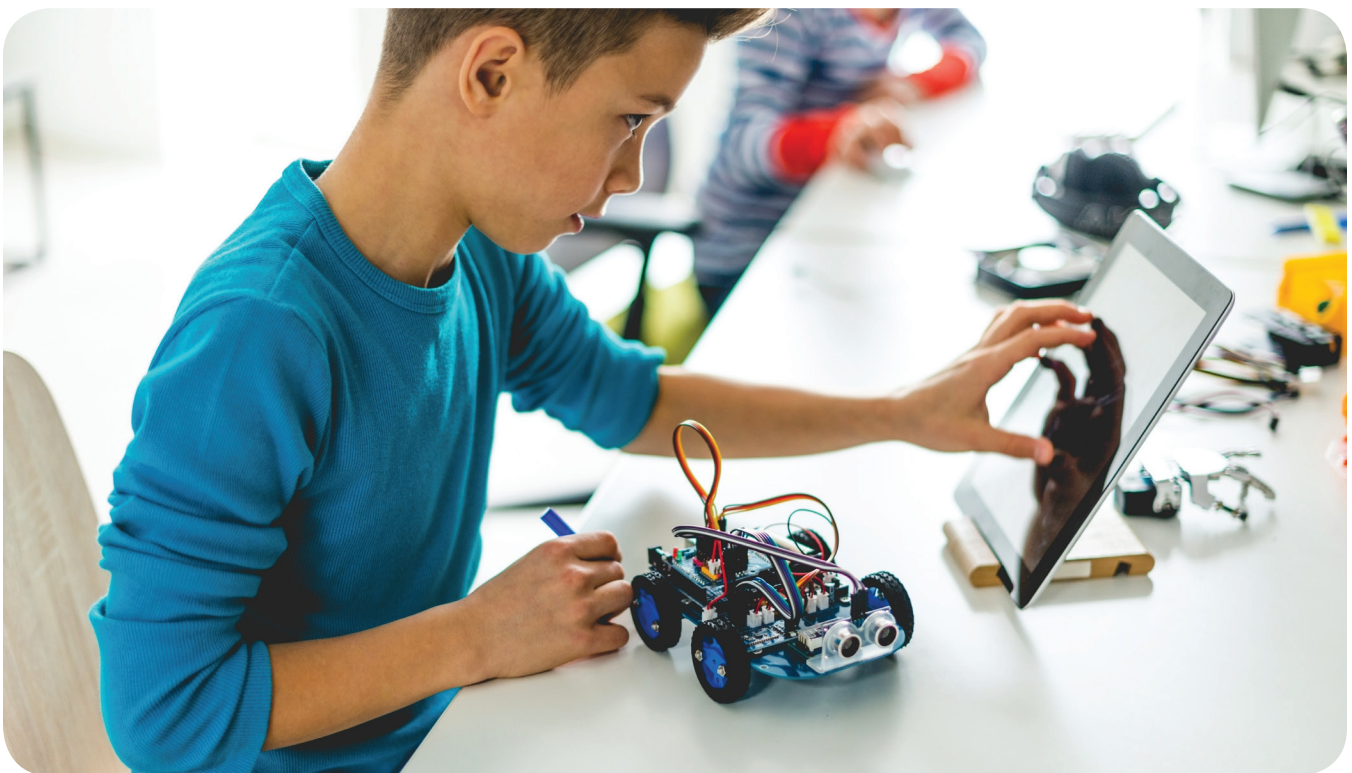
5 Things to Consider Before Adopting Cloud-Managed Networks

We know this: cloud-computing is a popular technology that continues to attract educational institutions keen on saving money and maximizing limited IT resources. According to one survey on technology trends, 81% of colleges are using cloud-computing services to realize substantial cost savings.

What's the appeal? CMNs can help under-resourced IT teams tackle the growing demand for around-the-clock networking—while also providing value, ease of use, security and scalability. They also allow you to quickly and easily set up, configure, monitor, manage and troubleshoot your wireless and wired network—all through the convenience of remote access via a web browser.

Knowing this, it's easy to see why cloud-managed networking is the technology of the future. But is the timing right for your school or university today? Before investing and making the leap, consider the following factors:

Budget

As CMNs become more common, they're also becoming less expensive. But that doesn't necessarily put money in your school's pocket. Education budgets are always tight. IT resources are often in short supply. And your school must still strike a careful balance between cost, performance and compliance—it's certainly no cakewalk.

Fortunately, CMNs offer several compelling benefits. For starters, this technology can offer predictable costs, making it an easier "sell" to district decision-makers. Once you've installed your wired and wireless networking hardware, you can choose to manage your network from a cloud-based solution that's available as-a-service.

This strategy lets your school move away from the traditional CapEx model (where everything is paid for up-front and IT performs ongoing updates) to an OpEx model (where the cost is spread out over time and updates can be made virtually by anyone). This approach has several benefits:

- It frees up budget and IT resources for other business needs.
- Support costs are all baked into a monthly subscription.
- A predictable monthly expense can be easier to justify, and can offset the initial cost by spreading payments out over a number of years.
- Network management tasks can be done by Managed Service Providers (MSPs), further alleviating the burden on IT teams.

Tips for Success

Read the fine print.

Different CMN suppliers offer different contracts. Some require you to pay the entire cost of switches, access points and a year's worth of cloud networking service upfront. Others let you pay for everything over time in one monthly fee. Depending on the purchase agreement, moving to cloud-based networking may actually be more expensive initially than simply buying and implementing new switches. It's important to read the fine print, shop around and find an acquisition model that works best for your school.

Know your default position.

What if you miss a subscription payment? What if your budget gets cut? What if you can no longer afford cloud services down the road? These are all important questions to ask. Some suppliers will shut off your switch immediately, causing a network disruption. Others allow you to keep and use the switches as standalone devices—simply without the cloud functionality. But if you're on a payment plan, you may be required to pay the remaining cost of the switch immediately.

Performance

If you're considering an upgrade to cloud-managed networks, another top concern is network performance. But with cloud-managed networks, you can rest easy. Cloud-managed networks perform exactly like traditional networks in terms of feature sets, bandwidth and security—delivering the high level of network performance your school or university demands. The primary difference is not how they perform—it's how they're deployed and managed. Consider these benefits:

Zero-touch deployment
The first benefit is zero-touch deployment—meaning that cloud-enabled access points, switches and other devices can be deployed by non-technical personnel. No need to send out an engineer for installation. When you need to add a new onsite device, simply connect it.

Easy configuration and management
Configuration and ongoing management are equally simple, since all tasks can be done remotely via computer or tablet—from anywhere, at any time.

Virtual firmware upgrades
Firmware upgrades are also done through the cloud. Simply set the update schedule on the web portal, and firmware upgrades are performed for assigned sites and devices as scheduled.

Stable, robust performance
Once set, the network performs exactly as it should—with guaranteed availability to meet your demands- fast connections, excellent coverage, 24x7 automated failure detection, self-healing, airtime fairness and automated load balancing to minimize complaints and outages.

For all these reasons, cloud-managed networks are an ideal solution for schools and universities that have limited IT resources, are growing quickly, or need to manage multiple sites.

Tips for Success

Investigate interoperability.

Since different switches each have their own scripting language, getting assorted components to work together in a mixed environment can be a potential challenge. It's smart to discuss and evaluate potential interoperability issues before you make a decision.

Know your team's preferences.

When acquiring new switches, network performance won't likely be an issue—but learning a new GUI could be. Some IT administrators prefer to make network changes via Command Line Interface (CLI)—claiming better speed and control. Others prefer the simplicity and short learning curve of a GUI. But beware: Some switches only offer one or the other—not both. If having CLI is important to your team, be sure to shop for a solution with this capability built in.

Let your goals dictate your timeframe.

When transitioning to a new network infrastructure, should your school go little by little, or do it all at once? It all depends on your school's budget and long-term objective. If you have a limited budget and just want to test out cloud-managed networking, start out slowly by adding just a few switches. Once your team has learned the GUI and has seen the network performance in a real world situation, you can confidently merge new switches into your network over time. If you have the budget for a completely new infrastructure, you can do it all at once.

Security & Compliance

Schools across the country are being held to a rigorous legal standard for data security—one that leaves little room for error, but substantial room for legal liability. It's an age where one errant email with student data can represent enormous liabilities, and a lost laptop can cause major concern, mistrust and disparaging newspaper headlines that tarnish a school's reputation.

Of course, accidental breaches are only part of the story. Students and cybercriminals also attempt to hack into school networks, and the number and scope of data breaches can be alarming. Think about it: If major corporations like Home Depot and Target struggle to fend off hackers, school districts with limited IT resources are even more vulnerable.

Whatever the cause of a data breach, schools and universities must remain vigilant and compliant to a number of regulations, including:

- Family Educational Rights and Privacy Act (FERPA)
- Health Insurance Portability and Accountability Act of 1996 (HIPAA)
- Children's Internet Protection Act (CIPA)
- Children's Online Privacy Protection Act (COPPA)

As you weigh the pros and cons of moving to a cloud-managed network, it's essential to consider security. Can this technology actually help you meet security compliance laws? If so, how?

Tips for Success

Look for role-based access control.

Good CMNs can simplify security setup protocols through role-based access control, or role-based administration (RBA/C), that can be accessed anywhere. With these capabilities, CMNs can help you avoid certain legal headaches andsecurity compliance issues by limiting who has access to what information on the network. Essentially, you create roles, groups, scopes and assignments within the network, then place people into specific roles with clearly defined titles and permission classifications, such as primary, technical, administrative, billing and more. CMNs worth their salt make it easy to create and manage these roles and settings—and also to change permissions and privileges as needed. This automated feature helps protect sensitive information, which helps you maintain data security and compliance.

Ask about user authentication.

CMNs can also scrutinize who's allowed into the network. Using the right hardware and processes – like customizable captive portals and 802.11x – people must pass two data encryption tests before they can join the network.

Mobile Learning/BYOD (Bring Your Own Device) Programs

Did you know that an average 18-34-year-old college student owns nearly seven Internet-connected devices? It's true, according to one recent report. And for most college students, being able to connect those devices to an on-campus Wi-Fi network is a top priority. Consider these stats:

- According to Online Colleges, an extraordinary 90% of all college students look at Wi-Fi as an essential tool critical to their educational success – to the point that they wouldn't even think of going to a school that doesn't offer fast, reliable and ubiquitous wireless connectivity.
- In an Online Colleges infographic: 79% of students said that without Wi-Fi, college would be much more difficult. 75% said the Wi-Fi service on campus helps them earn better grades. 44% of students used Wi-Fi to get a head start on an assignment while class was still in session.

How higher education students use their mobile devices on campus is also changing. According to EDUCAUSE, students are using their mobile devices to look up lecture topics during classes, access relevant information, and browse through their course textbooks both in and out of the classroom.

More and more students are also using mobile devices off campus for learning-related activities. Some are using smartphones to collaborate on group projects while waiting to pick up pizza, write reports while commuting between campuses, access educational resources from home and chat with remote classmates for homework help.

The bottom line: On-campus learners are also becoming remote learners, completing some of their work outside of class. Mobile apps and network access to coursework outside the classroom need to serve both on-campus and remote learners.

One thing is clear. Based on the explosion of mobile devices and students' growing dependence on campus Wi-Fi networks, it's safe to say that BYOD programs aren't going anywhere anytime soon.

The idea of letting your students, faculty and guests access your wireless network using their own devices should be something you're ready for—not something you're fighting against. But what if a student's smartphone is infected with mobile malware that's programmed to automatically attack your network? The network security risks of a BYOD program—and how CMN technology could help—are definitely worth discussion.

Tips for Success

Understand the impact on BYOD.

As you consider moving to cloud-managed networking, ask yourself and your CMN provider these questions:

- How can your CMN serve both the network demand of mobile learners and provide additional security measures?
- Can the network support the additional bandwidth of remote learners?
- Is the data being transferred secure?
- Will your new CMN affect your ability to implement or grow your BYOD program?

Ask about additional features.

Many CMN providers have an array of BYOD management and security features already baked in. Some offer EMM (Enterprise Mobility Management) or MDM (Mobile Device Management), which can help your school support a BYOD program, and create a Wi-Fi network exclusively for employee devices. These capabilities enable you to effectively and remotely wipe sensitive data from employee devices that are lost or stolen.

Scalability and Flexibility

According to a 2016 Nielsen study, 98% of people aged 18-24 own smartphones. This trend has left many higher education IT leaders reeling—and struggling to play catch-up with their networks.

Many college and university campuses don't have the ability to adapt and scale their Wi-Fi networks to accommodate such a rapid influx of mobile devices. This has caused more than a few headaches for both students and college CIOs.

That's why it's important to implement a CMN with the capability to handle the enormous amounts of data flowing through networks—especially one that scales easily to meet network growth.

With answers to these questions, you can implement a smarter network upgrade plan to help you keep up with demand.

When considering changes to your network, ask yourself:

- How quickly is your school growing?
- How many more students will you be serving in the next 2-5 years?
- How many more devices are being used by those students than in previous years?
- Do you have plans to add campuses, buildings, mobile labs and/or devices?
- Do you expect your IT staff to increase?
- Will your network need more bandwidth to support more traffic?
- Will you be implementing a BYOD program or do you expect a current one to grow?

Tips for Success

Zero-touch deployment is a must-have.

Many CMNs offer zero-touch deployment (ZTD) or zero-touch provisioning (ZTP), which means you can set up a new switch or add bandwidth in just minutes. Simply power up your devices and connect Ethernet. Everything else is done automatically. CMNs will download all the settings, role-based access control, data encryption and authentication settings—applying them to all your switches and access points automatically.

Master your network settings—on the fly.

With cloud-managed networks, it's easier to adjust network settings during testing or for specific events. You can easily allocate bandwidth per network, create separate SSIDs and passwords, and provide guest Wi-Fi access for events to prevent future tampering.

Gain flexibility and scalability to grow over time.

Whether you're adding a new building on campus, adding a computer lab or adding new mobile devices, you're going to need more bandwidth. By choosing a cloud-based network that's designed for flexibility and scalability, you can purchase what you need today, and add more devices in the future, as needed.

Conclusion: Is Now the Right Time for Your School to Adopt Cloud-Managed Networking?

The cloud is here to stay—and so are cloud-managed networks. With all of the visibility, flexibility and performance they offer, CMNs are the network technology of the future.

However, there are pros and cons to every new idea, and CMNs are no different. If the pros outweigh the cons for your school, it might be the right time to make the jump.

To learn more about whether cloud-managed networks are right for your school, please contact us today:

📞 **(888) 331-8686**   ✉ **solutions@dlink.com**   🌐 **us.dlink.com**

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