



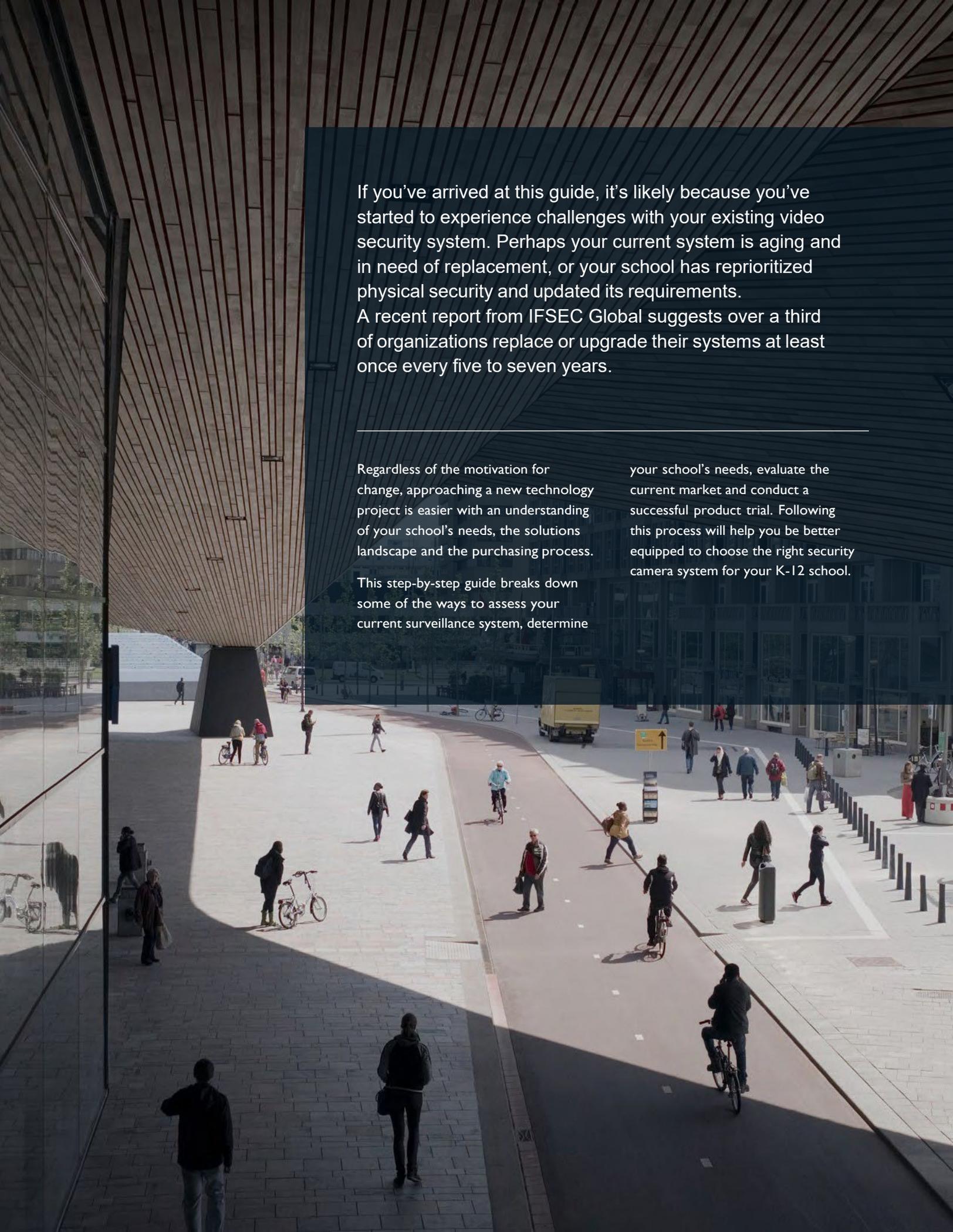
SECURITY EBOOK

HOW TO CHOOSE THE RIGHT VIDEO SECURITY SYSTEM FOR YOUR K-12 SCHOOL

Developed by Verkada in Partnership with IKON Business Group

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If you've arrived at this guide, it's likely because you've started to experience challenges with your existing video security system. Perhaps your current system is aging and in need of replacement, or your school has reprioritized physical security and updated its requirements. A recent report from IFSEC Global suggests over a third of organizations replace or upgrade their systems at least once every five to seven years.

Regardless of the motivation for change, approaching a new technology project is easier with an understanding of your school's needs, the solutions landscape and the purchasing process.

This step-by-step guide breaks down some of the ways to assess your current surveillance system, determine

your school's needs, evaluate the current market and conduct a successful product trial. Following this process will help you be better equipped to choose the right security camera system for your K-12 school.

STEP 1

Assess Your Current Situation

Here are Some Questions to Guide that Process:

- What is your surveillance system designed to accomplish?
- Has your school introduced new security requirements since you installed your system?
- Can your system adapt to meet those requirements?
- Is there a cost associated with bringing your existing system up to date?
- Does it perform consistently when you need it to?
- Are there established protocols that lead to reliable, intended outcomes each time?
- How will your existing system adapt to the evolving cyber threat landscape?
- What are the biggest pains associated with your existing system? (Hint: they may be different across campuses, so be sure to enlist feedback from all interested parties.)

This will help you understand whether your existing system can be updated to meet your needs or if you need something new. It will also help you view the solutions landscape openly and objectively.

Before jumping into infrastructure upgrades or modifications, it is prudent to evaluate the current state of security within your school. You'll want to identify who should be involved, what gaps exist in your current setup, and how updating your system might impact processes and procedures. Seeing your reality clearly will help you build a strategy that your team, budget and infrastructure has the capacity to support.

Who Owns Surveillance Systems?

Traditionally, facilities and operations directors have been tasked with the responsibility of video surveillance. However, the shift toward internet-connected devices and software-driven tools has led more IT departments to take on the management of physical security systems.

Though understanding ownership will help you establish who makes a final purchasing decision and how budgets are allocated, you'll want to open communication channels across the administration to understand pain points, limitations, bandwidth and compliance requirements. Ask each stakeholder what role video surveillance plays in the scope of their work and how it relates to overall school safety and student privacy.

By acknowledging resource limitations and understanding the overarching goals, you can avoid building out a system that's too complicated to manage or fails to meet cybersecurity or compliance requirements.

How Much are You Spending and How is Spend Allocated?

Video surveillance isn't a one-time, set-and-forget investment. In addition to upfront spend on equipment, installation and network configurations, there are the ongoing costs of headcount and maintenance.

You'll need to identify how much is actively being spent on video surveillance and whether there is budget available for an upgrade. Start by identifying the largest source of budgetary spend for your school (it may be additional servers for storage or headcount for monitoring). Now consider how lapses in coverage or limitations of your existing system may result in expenditures for travel, legal and consulting expenses.

Does the IT budget have flexibility to grow with the demands of your school? If not, it's time to determine what costs can be reduced—or eliminated altogether.

Is Your Existing Surveillance System Efficient and Effective?

There are a wide range of video surveillance systems available in the marketplace that aim to provide physical security and thwart safety threats. However, the options vary in usability, reliability and functionality. Before you can explore a new system, it's important for you to clearly understand the capabilities of your current system.

STEP 2

Determine Your School's Needs

Once you understand how your surveillance system functions, the next step is to figure out if it can meet your school's evolving needs. Ask yourself what's not happening that should be happening.

Schools frequently enter their selection process with a list of "needs"—such as a custom integration or other specialized features. During the process, they often realize that many of these things are "wants" (rather than actual requirements). Needs and wants are not always the same. So, it's important to understand the difference, and ensure that the list is qualified accordingly.

It can be daunting to imagine a future state without a comprehensive sense of what solutions on the market have to offer. To help you get started, review these key considerations and examples of how modern product offerings are meeting the need. This can help you determine what stands between where you are and where you want to be.

Consideration	What to Expect from Modern Product Offerings
The Essentials	
How many cameras do we need (Indoor/ outdoor, per location)?	A modular, scalable system with the option to buy any number of cameras.
What visibility do we need?	At least 3 MP resolution, 180° field of view and low-light illuminators.
What type of environmental hazards do we face?	A wide-ranging operating temperature from sub-zero to > 120° F. Built-in accelerometer to alert for physical tampering.
How long do we need to store footage?	Flexible storage options. Superior products will offer 120 days of on-camera storage with the option to save footage in the cloud (via MP4, onto a flash drive or in other formats).
Access Control and Security	
Who needs to access footage?	Unlimited users that can be granted a range of permissions. Active Directory or SSO integration and two-factor authentication.
How do first responders get access in case of an incident?	The ability to share real-time or recorded footage on-demand—using unique, auto-generated links with customizable expiration dates.
Where will users need to access footage?	Anywhere, anytime access to a web-based command center, available from any device. Native mobile apps are a plus.
What do I need to see at any given time?	A "single pane of glass" or global view of the network, along with the option to create custom views of any number of cameras or locations.
What security standards are we required to meet?	Encrypted data, in transit and at rest; automatic firmware updates to prevent security lapses.

Consideration	What to Expect from Modern Product Offerings
Configuration and Installation	
Who will install our system?	Consumer-level “plug and play” setup with the option to partner with experienced, certified third-party resellers or licensed alarm installers.
Do we need our security camera system to integrate with other systems?	Standard integrations with Active Directory and Single Sign-On. API support to develop custom integrations.
Support and Maintenance	
What level of support do we need?	Support hours that overlap with yours; a strong FAQ or community support.
How do first responders get access in case of an incident?	The ability to share real-time or recorded footage on-demand—using unique, auto-generated links with customizable expiration dates.
Where will users need to access footage?	Anywhere, anytime access to a web-based command center, available from any device. Native mobile apps are a plus.
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Summary



Use the considerations above to help classify how your current setup is serving your school’s needs and how to best proceed in the evaluation process. You may find that your situation is similar to the 70 percent of organizations who use products from multiple manufacturers.

Your Situation	How to Proceed
Our current solution meets our school’s needs.	Continue investing in your current system.
Our current solution works, but we need to scale up coverage.	Consider whether you’d like to purchase more of your existing equipment or price out more modern systems.
We’ve identified growing pain point and/or new requirements that our system can’t meet.	Consider a medium-scale effort that includes changes to system-related policies, technical upgrades for your current system and a gradual shift to a new type of system.
We’re out of compliance and need to urgently replace our current system.	Begin a large-scale effort that is driven by compliance requirements. Eliminate the exploration of any systems that cannot meet compliance.

STEP 3

Evaluate Surveillance System Options

Advice from the Experts

Of the offerings on the market, the classic NVR/DVR system is fairly inflexible. Consider how these restrictions could impact your goals:

- Remote access requires opening/forwarding ports resulting in potential security vulnerabilities
- Hardware costs include many different components that often need to be replaced
- Maintaining and updating NVRs in multiple locations is time consuming
- Is there a cost associated with bringing your existing system up to date?
- Not a scalable solution for adding and relocating cameras

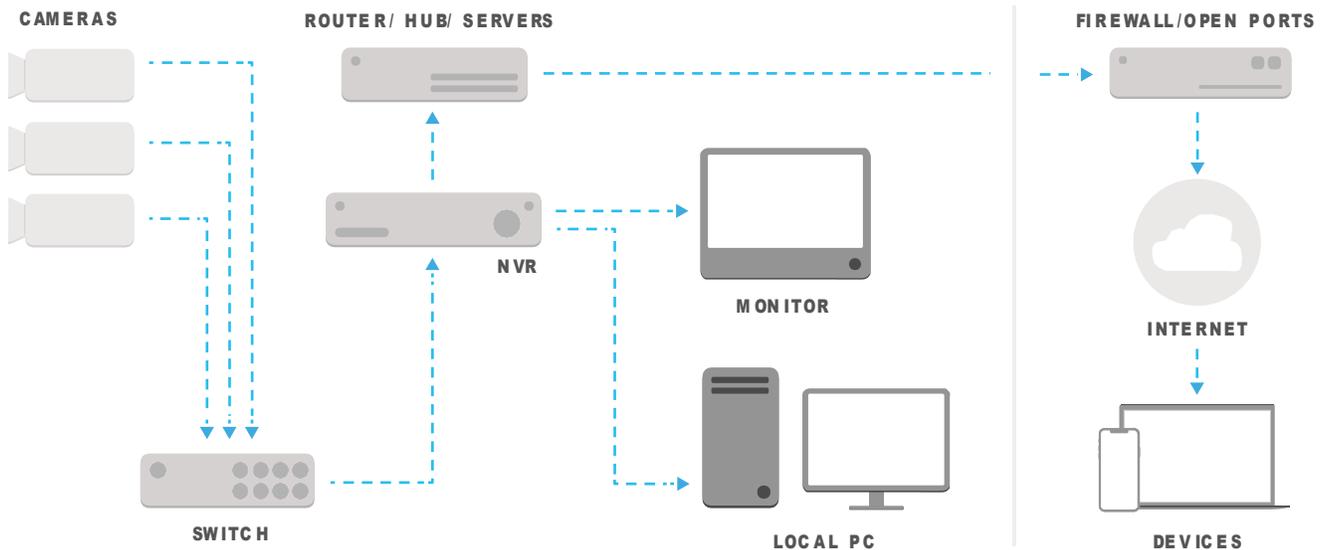
Now that you understand what you need and what's possible, it's time to evaluate your options. A survey of dealers and integrators that offer multiple types of products estimated a 64% spending increase on IP-based systems in 2018. Exploring a number of systems may seem to prolong or complicate the decision-making process, but researching the solutions landscape can reveal hidden needs or opportunities.

To help you weigh your options, the three most common categories of video surveillance systems—and the benefits and limitations of each—are listed below.

The Classic NVR or DVR System

Conventional video security systems that store footage on centralized, on-premises servers—known as digital video recorders (DVRs) or network video recorders (NVRs)—are the most pervasive solution installed across many schools. Chances are good that you have at least one NVR or DVR surveillance system set up today.

NVRs/DVRs hold some worthwhile advantages. They can be the most economical option for schools with a single location and a small number of cameras. Or also may be ideal for schools where policy prohibits internet-connected cameras or requires an air-gapped setup.



The Pure Cloud or Video Software as a Service (vSaaS) System

Advice from the Experts

Pure cloud solutions introduce new opportunities alongside new challenges. Consider how the overall cost of ownership and compliance limitations could impact your goals:

- Significant bandwidth usage and costs
- Always-on internet connection needed for 100 percent coverage
- Cannot meet PCI compliance and other governmental statutes, some of which require data to be stored for over 90 days

Pure cloud camera systems have emerged to provide operators with a solution to increasing demand for remote access and concerns over the growing expense of hardware storage. With these systems, video processing, recording and management all take place in the cloud. Footage is streamed rather than recorded, so it can be accessed on-demand from anywhere.

Ideal for schools that require a turn-key managed service and limited hardware management, the only hardware that vSaaS systems usually require are a camera and an internet-connected device (like a computer, tablet or smartphone).

In the case of pure cloud solutions, however, one problem may have simply been traded for another. While solving for remote access and scalability, these systems take a considerable toll on network bandwidth. They function by sending 100 percent of recorded footage to the cloud, which can use a significant amount of bandwidth and incur associated ongoing cloud storage costs. Pure cloud or vSaaS solutions may work well for individual sites that support high-capacity internet and only have one or two cameras, but they may be limiting for schools that plan to scale and open new locations.

The Hybrid Cloud System

Advice from the Experts

Hybrid cloud solutions are designed to address modern (and future) video surveillance challenges. Consider how that could impact your school's goals

- Some schools have restrictions or concerns about the use of any cloud services
- May not be ideal for extremely remote locations, where wired or wireless (LTE included) internet connection is unavailable
- For smaller or single-location schools, costs can outweigh benefits

The newest providers in the surveillance ecosystem are often referred to as hybrid cloud solutions. Having only recently entered the market, these disruptors are unburdened by dependence on hardware as a primary revenue stream. Instead, they've approached the opportunity with a software-first mindset.

Like pure cloud systems, hybrid cloud systems generally require just the camera(s) and an internet connected device. There's no additional hardware to manage and footage can be accessed remotely through web-based software. But, rather than streaming 100 percent of content to the cloud, they take a radically different approach that minimizes bandwidth usage. Hybrid cloud solutions store video on the camera itself and only upload thumbnails to the cloud. Thanks to smart activity detection and compression algorithms, hybrid cloud cameras often only use 20 kbps of bandwidth per camera at rest.

Some hybrid cloud providers that manufacture their own cameras have also taken advantage of their NVR/ DVR-free approach to improve security practices. Expect these systems to offer automatic firmware updates, Active Directory and single sign on (SSO) integration and data encryption in transit and at rest.

Hybrid cloud camera systems are quickly becoming the new standard. While they were first embraced by schools, retail stores, manufacturing and organizations with large or distributed campuses, they're now growing in popularity across all industries—even those that require compliance with PCI, HIPAA or other governmental regulations.

STEP 4

Consider the Costs

After reviewing the market offerings, you may already have a sense of which type of product is best suited to meet your school’s needs. Before embarking on vendor discussions, it’s useful to develop an understanding of total cost of ownership. Costs generally include physical products, installation, ongoing maintenance, and staffing. However, the actual and supplemental cost of each of those categories can vary significantly from solution to solution.

The most difficult part of estimating total cost of ownership for a new system is attempting to create an apples-to-apples comparison for different types of products. Consider, for example, how the cost of storing and accessing footage might be listed on different quotes. For an NVR/DVR system, this may be listed as the price of servers that store recordings. For a hybrid cloud solution, it may be already part of the cost of the camera itself. A pure cloud solution may offer an added subscription cost to the platform.

When comparing different types of systems, you can use the table below to help parse out how costs for each category can differ. If you’re uncertain how to respond to some of these questions, work with a few selected vendors to get the answers.

Cost Category	Considerations that Influence Total Cost of Ownership
Physical Products	How many cameras do you need? Will you need to purchase monitors? Will you need to purchase additional routers or firewalls? Will you need servers to add or scale capacity?
Installation	Who will install your system (DIY or third party)? Will it need to integrate with other systems (employee badge, alarms, etc.)? Does your setup require updates to support Power over Ethernet?
Maintenance	Support hours that overlap with yours; a strong FAQ or community support. Are software updates automatic? Does your product offer a warranty?
Staffing	Can footage be viewed remotely, or will you incur overtime or travel costs? Do you require 24/7 monitoring? How much time does it take to search or share footage in case of an incident?

Tips for Talking to Vendors



- Ask about discounts for education and 501c3 organizations.
- Look for cost savings through an extended warranty of 8-10 years.
- Watch out for hidden costs (over-provisioning, offline cameras, lost footage).
- Discuss options for installation, including the availability of certified third-party specialists.
- Does it perform consistently when you need it to?
- Request case studies or testimonials from customers in your industry or those with a similar use cases.

STEP 5

Commit to Change

At this point, you should have a very clear understanding of your current situation, your school's needs, the solutions landscape and the potential costs of video surveillance systems. If all signs point to a system upgrade, it's time to commit to change and begin evaluating a new system.

The process outlined below will help you prepare for and execute a successful trial.

Select a Vendor, or Two

Once you've received your RFP responses and identified the standout vendors, you have the tough job of making a final decision. If you can't narrow it down to a single vendor, reviewing the details of the trial process may help.

Ask about the vendor's ability to support you through the process, the timeline for shipping equipment and testing and whether they have a best practices guide or process to help you with the evaluation. If you plan to perform a side-by-side comparison between two (or more) vendors—sometimes known as a “bake off”—make sure you have enough resources dedicated to the project.

Confirm Your Budget

Prior to testing equipment, finalizing pricing details and ensuring there's sufficient budget to cover the investment is always recommended. Knowing what the system costs, and whether your budget can accommodate it, is essential to your success. This will ensure that you're able to quickly purchase and roll out your system at the trial's end. In some cases, this also enables you to take advantage of any pricing incentives offered by your vendor.

Schedule Time for Setup and Testing

Trials typically range from one to four weeks, depending on the size of your planned installation. If you're testing more than one solution, you may find it useful to test them concurrently rather than consecutively. This will help ensure you're comparing how the cameras and their software perform in the same scenarios.

You'll want to allow time for your cameras to gather data so you get an accurate portrait of day-to-day activity. You'll want to look for how the camera is performing during regular school hours, how your network is handling bandwidth usage while student activities are at their peak and whether video quality remains consistent throughout the day.

Get Buy in From Stakeholders

This is one of the most important parts of the process. Investing in a modern security camera system should faculty and staff across your organization—from IT and or operations, to your Principal or Director. The best way to ensure that they're as pleased with the investment as you are is to inform and involve them in the trial process.

Audit Your Physical Requirements

To make sure there are no surprises when your equipment arrives, speak to your vendor about requirements before you agree to a trial. Similar to older solutions, most modern systems will require a Power over Ethernet (PoE) connection and a reliable mounting surface. You'll also want to choose where you'll mount your camera(s) in order to maximize the field of view and confirm there are no blind spots. Consider testing more than one type of camera to ensure the vendor can provide a camera solution for each of the purposes you require.

Determine Your Success Criteria

It can be difficult to quantify whether a system is "fast" or "easy to use" when you've gone past simply looking at specs promised by the RFP responses. Spending a bit of time to outline your success criteria, particularly if you're working with a larger school or across campuses, can help ensure that everyone is on the same page. Another option is to notate the vendor's claims and test them (Does the system use the amount of bandwidth it claims? How long does it take to set up the camera? Is the process of adding new users well documented?).

Begin Your Trial

During this phase, you'll work closely with a single selected vendor. Open communication and thorough documentation will ensure you maximize your trial experience. Use this checklist to make sure you don't miss any important milestones during the evaluation period.

Task	Pro Tips
Set up your camera	Mount your camera in a place with a high volume of activity and different types of movement.
Create your account	Don't share a login or passwords just because it's a trial. Test the process of adding users and roles.
Schedule a kickoff	Invite your stakeholders to a call that covers your success requirements. Some vendors may also offer complimentary best practices webinars during the trial period.
Familiarize yourself with the features	Play with features that the vendor marketed as key differentiators to be sure they're more than just buzz.
Test real-world scenarios	Consider your original goals in updating your surveillance system and perform drills that ensure you can meet them.
Gather feedback from the team	Check in early and often. This will help make sure your stakeholders have adequate time to test the system and document their experiences.
Wrap up your trial	Compare your feedback to your stated success criteria. Communicate with the vendor about where they exceeded, met or failed to meet expectations.

STEP 6

Evaluate the Outcome

Once you've completed the trial, it's time to decide how to proceed. If you've followed the steps in this guide, you should be able to quickly ascertain whether the solution meets your school's needs by revisiting your success criteria.

The Evaluation is a Success

If the solution meets your expectations, the process of updating your system can now begin. With your budget determined and your cross-functional communication lines open, the next step is to sign your purchase or service agreement and plan for installation and rollout.

It's worth noting that, during your evaluation experience, you will have likely gained new information about the time it takes to install, manage and scale the solution. These insights can help inform installation plans, establish a timeline for updating and documenting internal processes, and create a rollout and training schedule.

After the trial, you may decide that you'll need to work with a third party to install new equipment or support longer-term management. Your vendor should be able to recommend certified partners that are experienced with their products or help certify your preferred partner.

The Solution Doesn't Meet Your Expectations

The process of evaluating any new technology is a significant investment of time, communication, research and often professional capital. It can be extremely frustrating when a trial doesn't go as planned or a product doesn't deliver on its promises, especially if this requires starting the process over with a new vendor. But all is not lost. You can apply your learnings from the first trial to new vendor discussions, helping you vet feature claims with the vendor during a product demonstration.

What's Next

This guide has outlined the process of assessing your existing system, determining your school's needs, exploring the solutions market, preparing cost considerations and conducting a trial. Hopefully, it will help lead you to a solution that is more secure, simpler to manage and reduces your total cost of ownership over the long term—even if the outcome can be achieved simply by adjusting the way you manage and scale your current product.

GET IN TOUCH



Empower Students and Staff with Secure and Scalable Technology Solutions

This guide was developed for you by Verkada in partnership with IKON Business Group. IKON & Verkada work hand-in-hand to provide technology & security systems built for today's learning environment.

If you'd like to learn more about simplifying video security management at scale, the team at IKON Business Group can help.

Drop us a line at info@ikonbusinessgroup.com, or give us a call at (212) 334-6481.