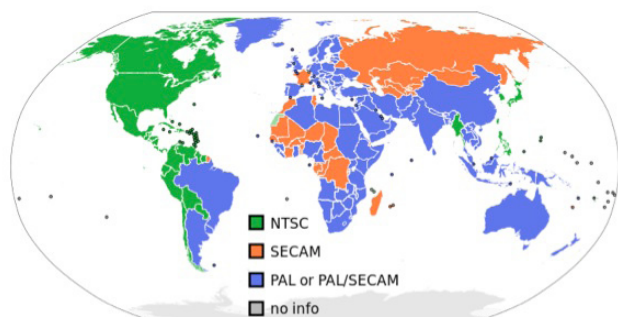


Selling IP Surveillance against Analog CCTV

It's not uncommon when approaching a new customer, or an existing one, to encounter resistance to IP surveillance when presented with a choice between IP and traditional analog CCTV. There are two primary reasons for this: complexity and price. To counter both of these objections, the customer must be educated about the advantages of IP surveillance vs. analog CCTV. Before we highlight these advantages, we first need to explore the truth about CCTV.

Advantages

Simplicity – Analog video is a universal standard and has been for several decades. Virtually any analog CCTV camera can be plugged into any DVR, regardless of brand. While there are regional varieties of analog video (NTSC, PAL and SECAM), cameras available in a region conform to that region's standard. And many analog cameras and DVRs work with any of the standards. So CCTV literally is as simple as plugging a cable into the camera and into a DVR. No IP address in the camera, no search utility, no PC for that matter. Point the camera; plug in the cable; power on the DVR. There are many limitations to CCTV, and we will address those, but the point is that when initially looked at from an installation, learning curve and maintenance standpoint, CCTV is simple. However, that simplicity is accompanied by significant limitations.



Regional analog video standards

Price – Now let's explore the other area of contention between IP and analog, and that is price. In virtually all cases, when comparing form factors of cameras (i.e. bullet, dome, etc.), the IP camera is more expensive than the analog CCTV camera.

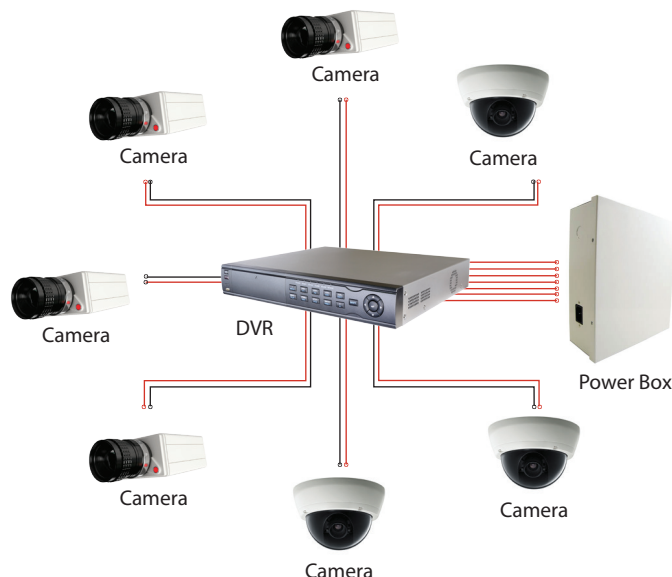
This becomes more apparent when you see DIY camera/DVR bundles at "big box" stores for well under \$1000 USD. These turnkey bundles include 4 to 8 outdoor cameras, cabling, DVR (with hard drive installed), and some even include a remote and an LCD, making them a complete standalone video surveillance system. So it's easy for a customer to compare quotes and be swayed by the apparent low price of analog CCTV. However, once the customer is made aware of the limitations that are inherent in CCTV, and the advantages that IP offers, the opposite argument can often be made, that IP actually costs less than analog. How? Once the limitations of CCTV are factored in, the advantages of IP surveillance shine. Let's explore.

Limitations

Scalability and Installation Flexibility – CCTV stands for closed circuit television, and that is its first weakness. It's closed, which means it's hard-wired and difficult to scale. It's an "octopus" installation. You can think of each camera's cable as an "octopus leg" extending out from the DVR, the "octopus head". While there are some ways to make this hard wired limitation workable on larger installations, there is nothing in the analog world that comes close the ease of scalability and installation flexibility available with IP cameras. IP surveillance allows you to easily scale any installation as your needs and budget grow. With IP surveillance, you can also tackle much larger deployments like campuses, multi-level buildings and multi-site retail stores. CCTV DVRs have a fixed number of camera inputs, and on most DVRs, there is no way to scale beyond this limit. If a DVR has eight inputs, you can record up to eight cameras. When it's time to add a ninth camera, your options are to replace the entire DVR with one with a higher port count or add a second independent DVR. These limitations do not exist in the IP surveillance world. IP cameras can be added to a network in much the same way that a

ANALOG CCTV

(Hard wired, difficult to scale, "Octopus" architecture)



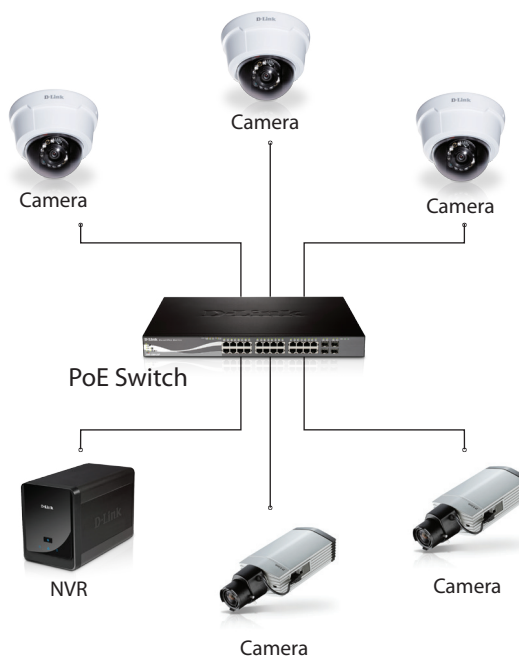
Fixed number of cameras and storage.



vs.

IP SURVEILLANCE

(Flexible, scalable, open architecture)



Easily scale any installation as your needs and budget grow.



VOIP phone can be added to a network. Hard-wired cabling constraints don't exist like they do in the analog world.

Resolution – The analog video standard NTSC was developed in the 1950's. Regardless of the image quality claims an analog camera's datasheet may have, the end result is the video signal is still being transmitted down the same resolution-limited pipe that was invented over 70 years ago. Because of this serious limitation, the primary reason the industry continues to shift from analog to IP is resolution. This is especially true on new installations. To highlight the differences in analog resolution vs. megapixel IP, consider this: A 1.3 megapixel IP camera is nearly 4 times the resolution of full D1 analog. A 3 megapixel camera is over 9 times the resolution of analog. Think of when you purchased your first HDTV set and were enjoying the clarity and quality of the HD channels. It became hard to tune into an SD channel after that. The same holds true for security. Once a customer realizes how much additional detail they can see with megapixel IP cameras, they soon abandon the notion of using analog CCTV again. The other significant advantage higher resolution offers is the ability to cover a wider scene. A single multi-megapixel camera can often take the place of 2 or 3 analog cameras. Then total cost of ownership becomes the issue vs. cost per camera. Now there are fewer cameras to purchase, fewer cameras to install and fewer cameras to maintain. And let's not forget the risk of inadequate analog video quality: the cost of not being able to

identify a suspect in a criminal activity or not being able to disprove a slip and fall claim. If a camera cannot capture video with enough usable detail, what purpose does the camera serve?

Cabling – CCTV cameras require coax cable, which only carries one signal: the video. To power the camera, you'll need a nearby power outlet or a separate power cable. Or you can use combined video/power cable, but this further increases the cabling cost. As an example, coax/power cable cost about twice as much as CAT5 network cable. If you want audio or PTZ functionality, each of these also requires an additional cable. The bottom line is the cabling infrastructure for CCTV is expensive and limiting. Contrast that with IP, which in most cases, only requires a single low cost network cable for each camera run. And because IP surveillance networks are decentralized, you need only run cable to the nearest switch, not to the recording device or server.

Intelligence – The cameras used in CCTV are considered dumb devices, meaning they output only a video signal. With the exception of PTZ cameras, there is no easy way to control the functionality of an analog camera remotely. In addition, there is no onboard intelligence, such as video motion detection, that is handled on the camera side and passed to the recording server. IP cameras, on the other hand, are essentially computers with high end integrated cameras. Not only can an IP camera be remotely configured (resolution, brightness, frame rate, etc.), they can also detect when

	Analog CCTV	IP Surveillance
Price	Cheap cameras, expensive cabling	Broad range of cameras and price ranges, lower TCO
Resolution	Tops out at 720 x 480, many systems run at ¼ of this resolution	HD/megapixel IP cameras are 3 to 9 times the resolution of analog CCTV
Scalability	Costly and difficult to expand, "rip and replace" is typical	PoE, wireless make adding cameras or moving them extremely flexible; ceilings, rooftops, light poles, concrete walls, etc, IP make campus wide and/or multi-site installation much simpler to deploy (and grow)
Intelligence	None in camera, fixed camera count DVR has motion detection	Motion detection and video analytics in the camera, ability to easily configure and control camera remotely
Cabling	Combo power/coax cable is generally twice as much as network cable; audio and PTZ require additional cables	Single low cost network cable carries power, video, audio, PTZ, video motion detection data, alarm triggers

This chart serves as summary and highlights the stark contrast between analog CCTV and IP surveillance.

motion or tampering has occurred and act on it. For example, an IP camera can act upon an event (motion detection, door sensor, etc.) and email, upload or record images or video of the event to an embedded SD card or external storage device. This transition to intelligence "at the edge" continues as video analytics and other advanced algorithms are being added to IP cameras, freeing up not only bandwidth, but also resources in the VMS or NVR, which ultimately means more cameras per NVR or VMS server and a better return on investment.

It's clear that once a customer is educated on the advantages of IP vs. analog CCTV, objections based on price go away. That leaves simplicity of installation and operation. If a customer application only requires a DVR and a fixed number of cameras, then CCTV wins on simplicity. However, if the customer wants remote access to his live

views and recordings, the DVR will need to have an Ethernet port. And with an Ethernet port comes a router, switches, computers, software and mobile apps. The good news is most businesses already have a network and most have an IT resource that is already familiar with computers, software and mobile apps. So why be limited to an analog solution when an IP-based solution gives you so much more. We live in the digital age and most people are comfortable with it. Most modern IP surveillance systems have setup wizards, auto discovery and a number of other tools that make installation and configuration simple. And while today it may not be as simple as "point camera, plug in, power on", that is the direction it's headed. The days of analog CCTV are going the way of CRT televisions. There is so much more to gain from an IP surveillance system.

Learn more about D-link IP Surveillance solutions.

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