

Before you throw out analogue security cameras in favour of IP, consider this...

 By [Mark Chertkow](#)

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With the rise of convergence and the evolution of the data network to incorporate multiple technologies, security and video over IP has become increasingly popular. Thanks to increased bandwidth availability in South Africa, IP security cameras are becoming a more viable option, and do offer many benefits. However there are also downsides to this technology, particularly in light of the fact that local bandwidth remains inconsistent and is still relatively expensive, and video streaming requires large amounts of stable bandwidth to perform to its best ability.

The reality is that ripping out an existing solution to install IP-based surveillance is not always applicable or necessary, and the need for a full IP-based surveillance network can only be determined given an enterprise's unique requirements and circumstances. So before organisations rush to jump on the IP bandwagon and replace analogue security solutions with IP, it is vital to analyse needs, scenarios and costs, and understand whether IP is in fact the best solution, or a costly mistake in today's environment.

The benefits of IP

The evolution of IP technology offers organisations the ability to run a host of applications and services, from voice and video to security, over a single data network, which offers organisations of all sizes a very convenient converged network. CCTV networks are one area where IP can deliver very specific benefits, including powering the camera system using Power over Ethernet (PoE), meaning that the camera network can be powered by the same data cabling as the cable which transports the video. This then enables the IT department to take control of the entire security function effectively.

Megapixel IP cameras are also available, which produce high-resolution images with more detail, and, where analogue signal degrades over distance, digital signal does not, as it does not require conversion before it can be transported over a digital network.

The downside

However, when it comes to IP cameras, the quality that footage is streamed at is the quality it is recorded at. This means that in order to stream high definition Megapixel video footage in high detail, an enormous amount of bandwidth is necessary. Even with standard definition footage, any and all IP video traffic is added to existing networks, which also have to run other IP technologies such as email, Internet access, Voice over IP (VoIP) and so on. IP cameras also require video to be constantly streaming, which means that the network traffic they generate is constant and can hamper other applications that need to run.

IP-based video security feeds also requires consistent quality of bandwidth availability, and if this is interrupted security footage will fail to be recorded or transmitted, which defeats the purpose of a security camera solution. Added to this, unless networks are very well managed, huge volumes of traffic from multiple security cameras will have a devastating effect on network performance for other applications. Managing security on the security networks is also vital, since IP networks can be subject to denial of service attacks which can compromise the entire system. All of this adds up to the fact that in a lot of situations in the South African market, IP is not necessarily the ideal security solution.

So how do you decide?

Firstly, it is vital to understand the relative pros and cons of IP before ripping out and replacing existing systems. It is also critical to understand the needs of the business, the network and infrastructure availability, the archiving needs, network

loads and so on. To put it simply, you need to know what the benefits to your specific organisation would be, and whether or not these outweigh the cost of replacing systems.

As an example, in a sports stadium where storing footage is not critical, but having a detailed, highly accurate view of a large area is, an IP Megapixel camera will be the best solution. However, in a distributed branch office environment where footage needs to be transferred offsite for monitoring, then an analogue solution may be the answer.

The best of both worlds

There are pros and cons to both IP and analogue solutions. So why not leverage the best of both worlds? Solutions are available that enable footage recorded by analogue cameras on a DVR to be converted to digital feed for live streaming and remote monitoring. This enables footage to be recorded in full quality by existing analogue cameras in a format that can be stored and archived, while also enabling footage to be converted into highly compressed digital feeds to be transported and streamed using very little bandwidth over IP networks. This way, users do not sacrifice on quality, as the original footage is still in a higher definition format, and also do not need to take up valuable bandwidth to stream video.

Using existing analogue camera solutions with intelligent conversion and compression technology to stream surveillance video over IP, organisations can sweat security assets for longer, retaining existing analogue cameras while still leveraging many of the benefits that go hand in hand with IP. However, ultimately the choice of whether to go IP or not depends on an individual organisation, its infrastructure, its needs and its budget. If in doubt, it is best to get advice from the experts, since security is one area that businesses can ill afford to get wrong.

About Graphic Image Technologies

Graphic Image Technology ([GIT](#)) was formed in 1991 and specialises in remote CCTV and control room technologies as well as broadcast technologies including video playout, compression and transmission. The company targets organisations that require CCTV technology as well as broadcasting companies with its solutions, delivering technology that has been specifically chosen due to its quality and best of breed status. The company features a level 2 BBEEE status.

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