

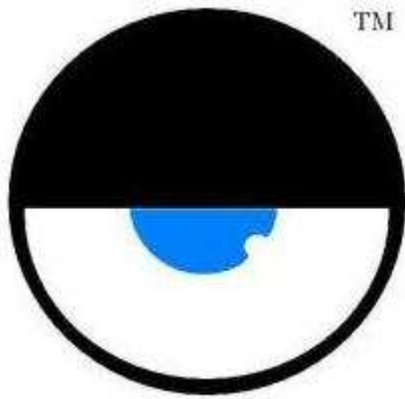
The General Benefits of Network Camera Technology

Network Camera Technology (also called IP Camera Technology) can be described as the technology that allows you to view a stream of images, live or recorded, over a computer network or the Internet. For example, Network Camera Technology enables us to view a camera installed in New York from an Internet connected computer located in the UK. The label 'Network Camera Technology' (also IP Camera Technology) derives from the underlying premise that the camera is viewed via an IP network, in which the letters IP stand for Internet Protocol.

IP networks are the most common networks used for data communication and we all use them every day at work and at home by sending and receiving e-mails, using our organisations' computer networks and browsing the Internet. The fact that IP networks already are more or less in every work place and also in many homes, makes it easy and cost-effective to install a network camera in virtually any location. The widespread availability of IP networks around the world and in our every day life gives every organisation or individual that has a camera system requirement the opportunity to implement such as a system at significantly reduced cost.

It is commonly accepted that network camera technology offers the following benefits:

- Remote access to live and recorded images of any location, at any time and from wherever you are
- The possibility to monitor a large number of remote sites from one central location offers huge cost saving potential
- Networked video systems have many automated and advanced features, significantly reducing the time and resources spent on monitoring, managing and maintaining a video system
- These automated and advanced features enable improved security operations to be implemented
- Reduced installation cost by utilising existing communication networks and reduced cabling requirements



1. Remote access

Remote access to live and recorded images of any location, at any time and from where-ever you are. Network Camera Technology allows us to install cameras in London, New York, Paris and Hong Kong and view them all from a PC based in Dubai (or anywhere else).

All that is required is that each of the cameras are connected to a computer network or the Internet. The cameras can also be viewed by more than one person, at the same time and from any location. One person could be in London, one in Birmingham and another person in Tokyo - and they would all be able to access the live cameras at the same time (subject to authorisation).

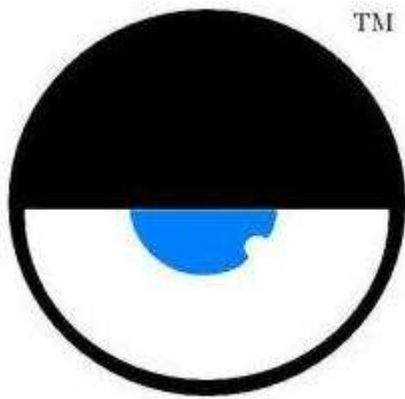
Of course it is possible to add numerous cameras to each location and also add new locations. Another advantage is scalability - often mentioned as a key benefit of Network Camera Technology, since it allows users to start off with the implementation of one or a small number of cameras on one location to start and then gradually build a more comprehensive camera network, encompassing larger number of cameras and multiple geographical locations (if required).

Access to live cameras on remote locations reduces the need to travel in many cases and often leads to less travel time and reduced cost as a result. Network Camera Technology provides users much more than just a live image from a remote camera. Users can view recorded video material stored on a central computer (uploaded automatically using FTP). Typically, camera output is recorded on a network connected PC or Digital Video Recorder, which both can be accessed from any authorised PC on the corporate network or the Internet.

Remote access to video recordings makes the distribution of recorded material to the required people much easier. Previously recorded material was held on a video tape or disk that required physical distribution or travel to the location - now material can be distributed via the network.

With the rise of wireless technologies it has become possible to connect a network camera to a computer network without using cables - creating even greater flexibility in camera installation.

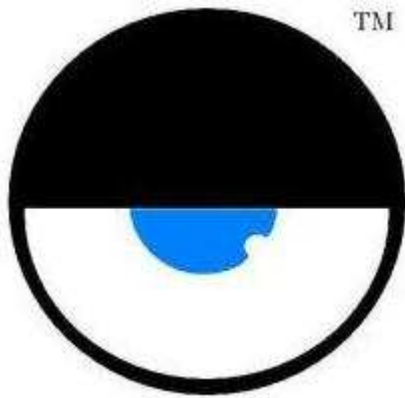
In addition any internet ready peripheral device (mobile phones, PDAs, PCs & laptops) can also access live and recorded video from their network cameras.



2. Cost savings through central monitoring

The possibility to monitor a large number of remote sites from one central location offers huge cost saving potential. Network Camera Technology allows you to monitor an unlimited number of remote sites from one central location. Whether a company has 3 or 300 sites scattered across Europe or the World - all sites can be visually monitored from one central station.

Older conventional CCTV systems are operated locally and require local monitoring staff on each individual site. Network Camera Systems allows monitoring and system management from one central point and as a result reduce the staff requirements on each of the locations. It also allows the implementation of one central control team, with central decision making powers, that manages and gives instructions to local operatives. The larger the number of sites within an organisation the larger the potential cost saving.



3. Automation reduces resources required

Networked video systems have many automated and advanced features, significantly reducing the time and resources spent on monitoring, managing and maintaining a video system. It would be difficult to list all advanced features available on network cameras, since the technology and features are constantly changing. However, the most important features are as follows:

Movement detection

A number of network cameras have built-in movement detection. Different manufacturers use slightly different detection techniques and have adopted different names; Digital Motion Detection (DMD), Activity Detection (Ad) and Video Motion Detection (VMD). In general a camera can be set to trigger an alert, when the camera detects movement and then automatically send alarm notification details by e-mail or SMS text message (or both) to relevant staff.

Image buffers

Most cameras with a motion detection function also feature image buffers. Image buffers contain pictures of the moments just before movement is detected and the alarm or alerts are triggered. The 10 or 20 seconds prior to an alarm or alert, often holds crucial information of an incident.

Automated recording

In addition to its prime function of alerting staff, one of the other main benefits of using motion detection is that it allows the recording of images on alert or alarm triggers only. This way recording takes place only when something is actually happening. It avoids recording and storing hours / days / weeks of video material of nothing significant. This means it is also much easier to find relevant video material of actual incidents. Only recording on motion detection also reduces the amount of video sent over the network and the amount of video material stored – minimising the use of bandwidth and the storage memory required.

Video tape is obsolete

Irrespective of whether a recording is being made 24/7 or on motion detection only, there is no need for video tapes. Video recordings are stored digitally on hard disks and can be automatically deleted after a set period of time (e.g. 30 days). Therefore, video recording has become largely automated and requires no human intervention (to change or scan through tapes etc). System management requires less staffing and as a result at a reduced cost.

Pan, Tilt and Zoom (PTZ)

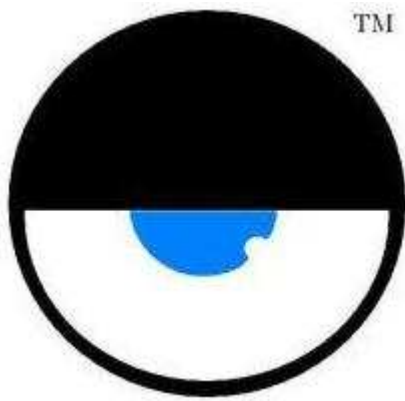
Some network cameras have Pan, Tilt and Zoom functionality. This allows remote users to control the camera to the left and right and up and down. Some cameras can rotate a full 360° and pan 180°. Zoom functionality allow remote users to obtain close up views. Network cameras with PTZ functionality are a powerful tool to monitor large or sensitive areas from a remote location.

Smart software

A number of network cameras have enhanced processing power and internal memory that allows them to be loaded with 'smart' or 'intelligent' software. For instance number plate recognition, facial recognition and event recognition. Some network cameras feature day/night functionality. They provide colour images during the day and automatically switch to black and white images at night.

Wireless network cameras

A number of network cameras are Wi-Fi enabled and can be installed without the need of CAT5e cabling – these types of cameras can be installed virtually anywhere.



4. Improved security

The automated and advanced features of Network Camera Technology enable improved security operations to be implemented. System functions such as those already mentioned lead to enhanced levels of security and the avoidance of operator error by using increased automation, leading to an improved security operation.

5. Lower installation cost

Reduced installation cost by utilising existing communication networks and reduced cabling requirements. Network camera systems - in the majority of cases - require much less cables and therefore installation time than conventional camera systems. Costs of installation are usually much lower - especially for larger camera installations.