

## **Emerging Trends in CCTV Technology Surveillance Systems 2022**

Smart, intelligent surveillance is advancing rapidly. With the advent of AI (Artificial Intelligence), ML (Machine Learning), and 4K video resolution, today's security equipment demands more data storage and integrated technology competencies. The detailed data and enhanced media quality are putting an influential impact on the speed, network, and storage capacity.

The surveillance equipment needs to operate 24/7; so, backup and storage are essential factors that must be considered upfront. These systems need to integrate hybrid hardware and software components to perform extensively for safe-shielding the premises.

Thermal imaging has become a norm as health and safety factors are the number one priority for organizations. Unquestionably, monitoring health standards are at the forefront of keeping the environment and the workforce safe.

Moreover, edge computing and Cloud computing will play a vital role as companies prefer processing data at the edge, as well as the Cloud. For real-time pattern recognition, latency is another crucial aspect that organizations must consider while deploying surveillance systems.

Technology innovation continues to shape various industries, and the emergence of advanced technologies brings along new trends. Let's look at the recent CCTV surveillance technology trends and how the latest security devices are meeting these advancing requirements.

### **1. Latest technology in CCTV**

Today's CCTV technology is a mix of 'Standalone Security' related to the post-incident mechanism and 'Proactive Surveillance' associated with live-response. The video clips in CCTV surveillance camera are encrypted using regularly changing security algorithms.

Post-incident security makes it impossible for unauthorized individuals to see video footage. Proactive surveillance cameras are capable to automatically detect several types of confirmed incidents such as intrusions, unauthorized vehicles, crimes, loitering, criminal damages, vehicle thefts, etc. as they happen.

Some cutting-edge CCTV surveillance technology includes a combination of HD resolution and HD analog technology that allows for recording video for facial recognition. Wide Dynamic Range (WDR) helps to balance light in the entire field for clarity. It includes PoE (Power over Ethernet) that gets power and network connection through Ethernet cable.

### **2. Modern surveillance system**

Machine and deep learning are taking over technology, and these technologies are here to stay forever.

Security in AI is relegated to auto-control in CCTV; however, the future devices will allow for end-to-end data processing and AI utilization.

Future security surveillance systems will be able to analyze data on-site. Such devices will allow for less server cost, better functionality, and greater efficiency. Due to the advent of IoT, digital devices are becoming powerful than ever for analytics.

The rise of 5G will be bringing faster speed and bandwidth while providing more security, flexibility, and responsiveness to remote surveillance. Unquestionably, facial recognition will become more common, and speech recognition will become a norm in modern surveillance systems.

### **3. Best CCTV camera brand**

Surveillance cameras are a crucial investment that one makes to secure shield the house, office, and surroundings. If the interior and exterior environments are equipped with the [best CCTV camera systems](#), nothing can be more peaceful.

When equipped with the right technology stack, CCTV surveillance systems protect the internal and external environment against thefts and burglary. Installing cameras in every corner of the home and office premises reduce criminal events to a significant extent.

**Here we enlist some popular CCTV camera brands to install as per specification, budget and other preferences.**

- Sony
- Bosch
- Zicom
- CP Plus
- Samsung
- Lorex by Lorex Technology Canada
- Avigilon by Motorola
- Arlo Pro3
- HikVision by PRC
- Honeywell
- SimpliCam
- Canary Pro
- Dahua Technology
- ADT Indoor Camera
- Pelco by Schneider Electronics

#### **4. Different types of CCTV camera**

CCTV surveillance industries are growing rapidly, and today there are dozens of options available for different use cases. Some of the most popular types of CCTV cameras include:

- **Dome CCTV**

360° angle makes it ideal for shops, casinos, hotels, restaurants, and commercial properties as it's relatively harder to interfere with the camera.

- **Bullet CCTV**

Appropriate for manufacturing plants, retail stores, farms, schools, institutes, etc. due to its iconic shape.

- **Wireless CCTV**

As the name specifies no wires means no mess, minimum installation time. The tidier setup makes it a good option for a church, museums, schools, and play schools.

- **C-Mount CCTV**

Detachable lenses allow monitoring varying fields beyond 40 feet. An excellent option for outdoor coverage due to the waterproof body.

- **Day/ Night CCTV**

Records clearly in the day time as well as night time. Suitable for high traffic environments and theft-prone areas.

- **Network/IP CCTV**

Capability to share live footage across the internet for enhanced accessibility makes it ideal for business owners.

- **High-Definition CCTV**

Due to high clarity images and unrivalled 4K video quality, HD CCTV devices are installed in high-risk areas.

- **PTZ Pan Tilt & Zoom CCTV**

Pans left and right, zoom in and out, tilt up and down. Good for large retail environments and areas with high traffic.

- **Night-Vision (Infrared) CCTV**

Infrared LEDs give clear footage even in dark areas; so, these cameras are appropriate for banks, farms, and areas with intense fog, smoke, dust, etc.

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## **5. Video Surveillance system**

Rapid technology advancements have led to the advent of real, clear, and consistent video surveillance systems that come with intelligent audio/ video/image processing capabilities. Modern CCTV devices are designed to provide real-time alerts in unexpected events.

These dynamic surveillance systems are programmed to assist security teams through efficient video analysis for interrogations and forensic investigations. Today's video Systems offers advance features such as automatic mobile notifications, motion sensors, automated alerts, and more.

Latest video surveillance devices are custom built to accommodate the client's business needs. Varying CCTV solutions are available based on specific requirements for covering multiple locations or securing a particular area only. These devices allow for on-demand video accessibility and vast storage.

## **6. Machine Learning and Artificial Intelligence**

Machine learning and artificial intelligence are no new terms that revolutionize all the industries and surveillance is no exception. With the integration of AI and ML technologies, think of CCTV devices as digital eyes that are either watching over us or, in the majority of cases, watching out for us.

AI is giving surveillance systems a digital brain so that they can work in collaboration with the digital eyes. It assists the authorities in spotting crimes or ill-fated events even before they occur. AI helps to analyze live footage from multiple videos feeds with no human interventions.

Machine Learning, on the other side, enhances the functionality of surveillance systems. In fact, it becomes an essential element of security devices to help monitor and protect the environments from unauthorized access.

## **7. Increased Cloud Integration**

Surveillance systems are revolutionizing with rapidly advancing technology, and Cloud integration has become a new trend. Hardware-free specifications eliminate the need for complex on-site, redundant installations. Cloud integration means your camera is connected directly to the Cloud and allows for fail-safe, secure, faster surveillance. These CCTV devices generally come with plug-and-play setups and are usually easy to install. It eradicates the need for complex network configurations, making it easier to deploy surveillance systems anywhere in the premises.

Cloud-based CCTV surveillance systems usually come with a dedicated app that enables users to access the area right from anywhere remotely. Quick configuration, auto-detection, latest firmware installation, and Cloud integration are some of the most powerful features of today's surveillance devices.

## **8. Enhancement of Cyber security**

An integrated and innovative security approach is vital for identifying security threats, monitoring vulnerabilities, ensuring process compliance, and combating fraud. Increasing severity and complexity of cyber threats have encouraged businesses to leverage emerging technologies in their surveillance systems.

Cyber security is undeniably a trending term that's becoming popular due to the growing consumer awareness. Enhanced cyber security not only covers your business against digital thefts but also protects your employees against potential risks and threats.

While thinking of CCTV devices, cyber security may not immediately strike the mind, but these two terms are becoming interrelated. Cyber security is an essential element as intruders adopt various ways to gain access to

data, networks, and digital assets. Device lifecycle management is the best way to enhance the health of cyber security and ensure more secure surveillance system. Securing the entire infrastructure, including all service, devices, and networks will help to maintain better cyber hygiene.

## 9. Remote Security Solutions

[Remote security solutions](#) are defining the future of surveillance devices as these systems are accessed and controlled remotely by security specialists. These systems provide cost-effective security against unauthorized elements. Common elements of remote CCTV surveillance include:

- Alarm sensors
- Analytics software
- Surveillance cameras
- DVR/NVR for data storage
- Towers for equipment mount
- Power backup/ Battery backup

By deploying remote security equipment on the premises, the authorities can have the right visibility needed to monitor and control the network. The top remote security solutions come with five robust features, including:

- Backup data transport
- Multiple alert methods
- Live analog monitoring
- Easy setup and configuration
- Reliable, high-performing hardware

Skykart Solutions products are field-proven, with thousands of deployments. Excellence in performance and reliability are not sacrificed in providing highly competitive priced solutions together with a comprehensive range of support services.

# For Further Information

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