



UNLOCKING A VIDEO-EMPOWERED NEW NEXT

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Unlocking a Video-Empowered New Next

In this White Paper IDC has partnered with Milestone Systems to explore how C-suite leaders can leverage video technologies in a number of defined business and social outcomes-oriented digital use cases. The study also highlights how executive leaders need to collaborate to identify video-enabled digital use cases that drive strategic value and what they need to do to unlock a video-empowered safe and successful "New Next."

The study focuses on four vertical markets that have been selected based on their video technology adoption maturity and wide range of video-enabled use cases. These are: Government, Critical Infrastructure (including Telcos, Utilities, and Oil & Gas [O&G]), Healthcare Services, and Transportation & Logistics. In addition to leveraging ongoing IDC market research, the paper is based on a dedicated survey involving more than 300 European and UAE organizations across the above industries.

Introduction

Video technologies have primarily been used for surveillance, and there are approximately one billion surveillance cameras in place worldwide. However, technology developments in artificial intelligence, image processing, cloud computing, and sensors are rapidly expanding their areas of application and the business outcomes they deliver.

Smart city projects around the world use data captured by traditional surveillance cameras to optimize road traffic flow, enable dynamic road signage and dynamic traffic signals, optimize staffing and schedules for public transportation, and strengthen citizen safety by responding to acts of violence or vandalism as they occur, while decreasing pollution, resulting in an improved quality of life. Video technologies are rapidly moving from the security operations offices and IT departments to the board room of organizations. This is already happening, as IDC research showed that the most important decision influencer for video-based projects in the government sector was not the security leader, not the IT leader, but the head of citizen services.

Hence, business executives need a blueprint to harness video technologies to drive real value and navigate their organization's digital roadmap towards a video-empowered New Next, to unlock the significant business value contained in the use cases.

AT A GLANCE

Technology advances in video analytics solutions will enable an avalanche of new video use cases outside the traditional areas of surveillance and security. Many of these use cases will be industry specific. Where should European and UAE organizations get started?

KEY STATS

- Over the next 24 months, 84% of European and UAE organizations will deploy advanced video technologies such as video analytics and sensor information.
- During this timeframe, 26% of the organizations surveyed would even establish a video technology platform centrally, which would be connected to other systems.

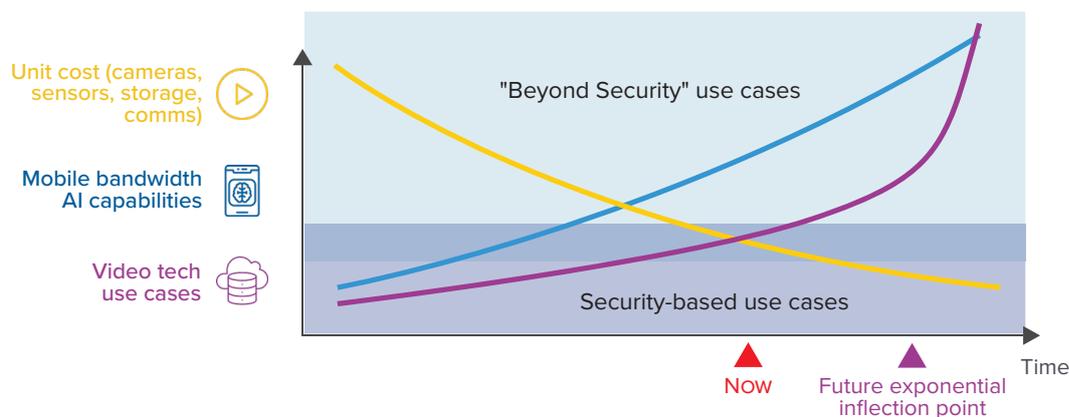
KEY TAKEAWAYS

- European and UAE organizations must prepare for the plethora of video use cases that will emerge beyond a purely security focus. These new use cases will strongly impact business outcomes and can impact why one city is less congested or easier to find parking in than the next, for example.
- Video technologies will become part of "core IT" and IT departments must find ways to make video solutions and content scalable and shareable, while at the same time deal with security and privacy concerns.
- As these video use cases impact core business processes, project champions are required to carefully orchestrate and ensure buy-in among organizations' budget holders and decision-makers in the C-suite and gradually assemble a Digital Dream Team.

Evolution of Video Technologies — From the Security Comfort Zone to a Video-Empowered New Next

IDC foresees an exponential change over the next three years in the application of video technologies, with organizations around the globe expected to spend \$2 billion on video tech in 2021 (source: Worldwide Video Surveillance Analytics Forecast, 2021–2025, IDC #US47835921, June 2021). This increased spend will be driven by new video technology use cases, for example to monitor patients in hospitals, combat traffic congestion, in and around cities, ensure effective repairs or preventive maintenance for critical infrastructure, carry out quality inspections in manufacturing, and prevent driver fatigue and improve safety in transportation. On the technology side, we are witnessing gradual and continuous unit cost declines in key video components, such as cameras, storage, communication, and sensors (e.g., related to temperature, humidity, pressure, proximity, location/speed/acceleration, and orientation). In parallel, the capabilities of enabling technologies such as artificial intelligence, facial recognition, communication bandwidth, and processing speed, are on a gradual, continuous rise. This is illustrated in Figure 1.

FIGURE 1
Video Technology Trajectory



Source: IDC, 2021

Surveillance and Security — The Traditional Applications of Video Technologies The initial fertile ground for video technologies has been in security and crime prevention. The ability to record and analyze events not only allowed us to forensically identify and collect evidence on past events but has also had a major influence on the prevention of crime. Most technology buyers are looking at video technologies for this purpose, in a mix of early adopters focused on standalone single-site usage and more advanced users deploying multiple clusters of connected cameras.

Emerging Video Use Cases Beyond Security

With the aforementioned advances in enabling technologies including digital video quality, image processing, mobile and fixed-line bandwidth, IoT sensors, a plethora of new non-security video cases are emerging. These use cases span many industries and include production quality control, driver monitoring, employee safety monitoring, and vehicle parking administration.

The COVID-19 pandemic added new use cases with rapidly growing popularity, including employee and customer compliance with social distancing and personal protective equipment guidelines as well as infrared camera-based temperature screening. Building a robust and open video platform enables new use cases to be spun up in an agile fashion, enabling enterprises to quickly respond, maintain resilience, and capitalize on the continuous swings of today's dynamic market. The next section provides an overview of emerging video-empowered use cases by industry.

Video Technologies and the Link to Digital Transformation

The IDC-Milestone Video Technologies Survey showed that European and UAE organizations in the four industries surveyed have come a long way in their digital transformation journey, with 82% having a formal digital transformation strategy in place already. Furthermore, 88% have aligned digital initiatives to the overall strategy for the organization, which means that these initiatives have higher level sponsors and can access stronger multi-year funding.

When we asked the 320 respondents about their top business priorities for 2021, better customer/citizen/patient experience came first, followed by improved physical security and better business performance. While video deployments related to security and surveillance are not direct drivers of better customer experience and business performance, they can act as a crime deterrent and improve security. However, many non-security video use cases can indeed play into customer experience improvements and especially business performance improvements, as manual control functions can be automated.

SmartPOMPEI Case Study

- The Italian authorities were faced with the formidable challenge of securing, managing and protecting the 400.000 m² archeological park of Pompei, which is among the world's most significant archaeological landmarks. Cameras and sensors connected in a fiber network throughout the park manage anti-vandalism, disabled visitor assistance, seismic protection, hydro-geological monitoring, and air quality control in real-time and 24x7

Global Cargo Panama Case Study

- Global Cargo Panama is using video technologies to offer its clients real-time information on the status of their merchandise and its journey. They can also add services to the process chain in the same warehouse — for example, packaging, labeling, and clothing manufacturing. From a computer or mobile device, customers can check the status of their goods and when it entered the warehouse, by which door, and if it has been moved, among other details.

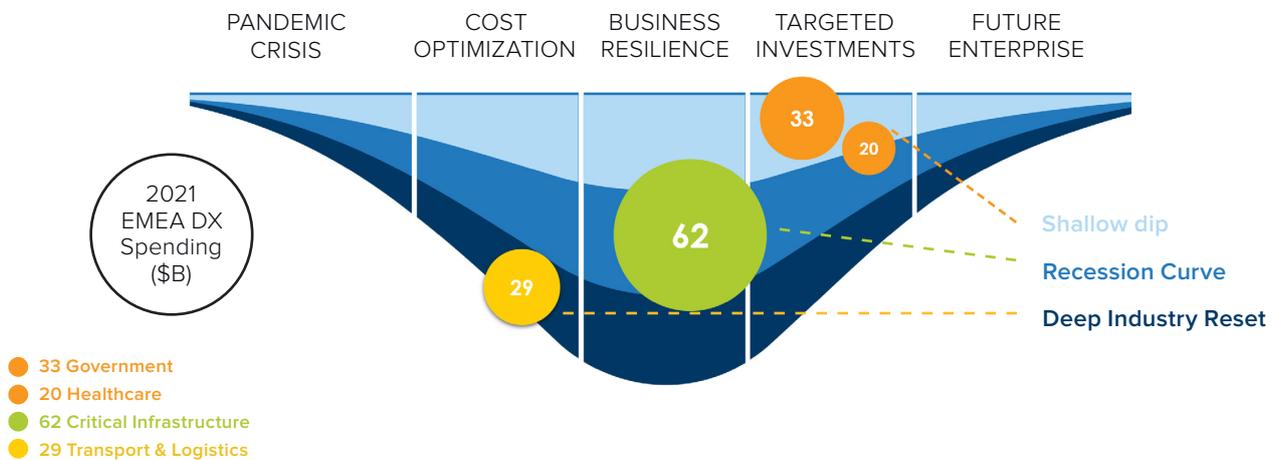
A Video-Empowered New Next Across Industries

The pandemic drastically reshaped industries, highlighting some latent digital gaps that had to be filled to survive, but also forcing them to rapidly accelerate their digital trajectories, to react and enable a quick return to growth.

Among European industries, four have been cherry-picked for this study based on their propensity to use video technologies and the plethora of video-infused use cases. These are Government, Critical Infrastructure, Healthcare Services, and Transportation & Logistics.

The impact of the pandemic on the selected industries changes drastically across all stages of the curve to recovery. Transport & logistics suffered major financial losses, especially in the passenger transport subindustry. In critical infrastructure the effect of the business shutdown has been partially balanced by a parallel surge in demand (i.e., home consumption). Government and healthcare, meanwhile, have been under extreme pressure from an operational perspective, but also had to rapidly unlock new resources and investments to react and hyper-accelerate.

FIGURE 2
The Road to Post-Pandemic Recovery



Critical Infrastructure includes telcos, utilities, and O&G — Government includes central and local organizations — Healthcare includes hospitals and other care facilities — Transport & Logistics includes passenger and freight transportation. Source: IDC Worldwide Digital Transformation Spending Guide, May 2021 — IDC EMEA, Video Technologies Survey, Milestone, April 2021

Although all four select industries show a strong propensity toward the use of video technologies, with almost half of respondents already using video technologies combined with additional technologies, such as video analytics and sensor data collection to deliver more advanced use cases beyond security. Transport & Logistics and Critical Infrastructure show the most advanced level of maturity in terms of video technology usage. While the public sector (government and healthcare) is partially lagging, the sector is expected to catch up quickly in the next couple of years, with one out of five respondents planning to use video technologies as an advanced technology platform connected to other systems, both inside and outside the organization, by the end of 2022. In this fast-moving scenario video technologies play a key enabling role for multiple digital use cases.

Use cases, defined by IDC as discretely funded digital projects that support specific business or societal goals, are being used to redefine internal and external conversations toward strategic business priorities and benefits.

While leading use cases such as building access control, asset management and security, or smart buildings, are horizontal scenarios applicable across multiple industries, in many situations the use-case language is strictly industry specific with very niche and sector-specific applications and usages. Among leading video-enabled use cases across industries, some deserve special attention (please, find full definitions in the Appendix).

Examples of Video-Enabled Industry-Specific Use Cases:

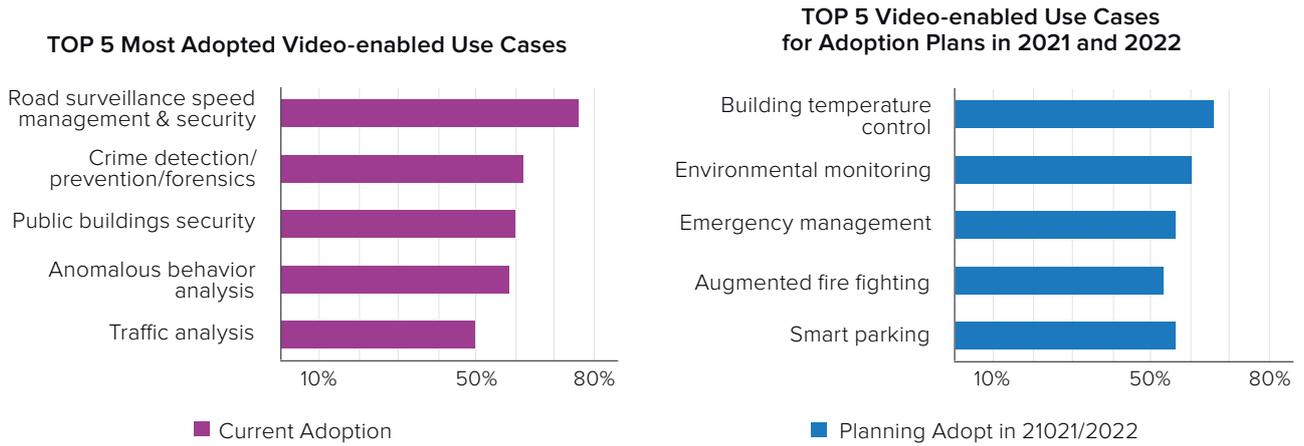
Voices from the Field Some use cases only apply to one industry, meeting sector-specific business scenarios and needs:

- A large European hospital is currently using video technologies to enable patient remote monitoring, virtual patient-doctor interaction, and hospital infrastructure monitoring solutions.
- Transport operators are using video solutions to monitor driver fatigue and constantly monitor the status of vehicles for maintenance operations.
- Municipalities around Europe are video-monitoring environmental conditions to anticipate emergencies and roads for safety surveillance and speed checks.
- A leading European energy distributor is using camera-equipped drones to monitor its distribution grid status and security.

Government: While augmenting citizens and infrastructure safety & security is a leading priority in terms of the most adopted video-enabled digital use cases for government organizations, it is interesting to see how emerging scenarios, such as environmental monitoring and building temperature control, will steer digital roadmaps in the coming years.

FIGURE 3
Leading Video-Enabled Digital Use Cases in Government

Q. For which digital use cases does your organization use or plan to use video and sensor solutions, currently and in the next 24 months?

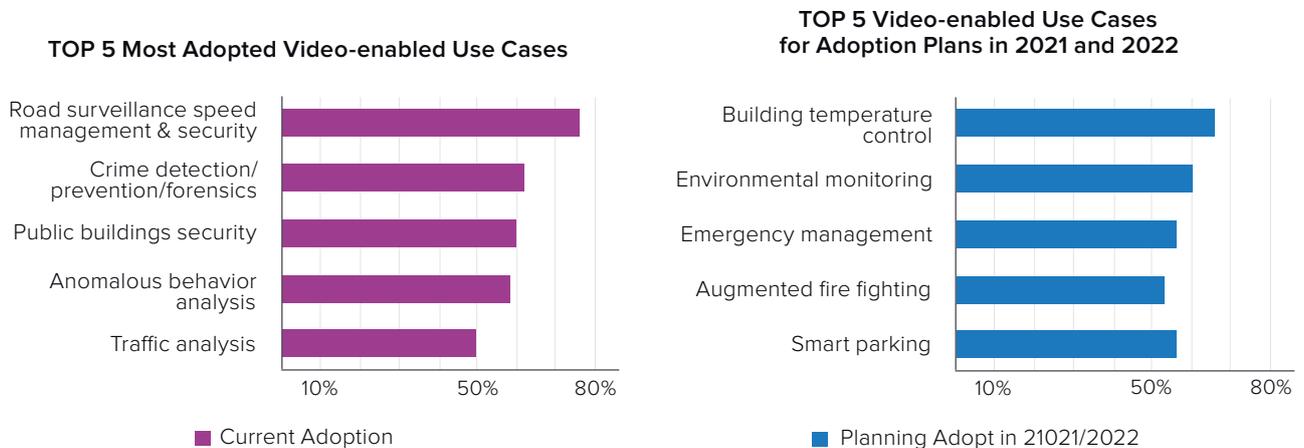


Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (Government Respondents Only – N=110)

Critical Infrastructure: "Beyond-security use cases" in the industry (both telco and utilities) focus on intelligent grid monitoring to detect failures or leakages. This scenario will soon extend to all on-field assets for maintenance purposes, while increasing efforts in continuous monitoring of employee equipment improves worker security and safety standards.

FIGURE 4
Leading Video-Enabled Digital Use Cases in Critical Infrastructure

Q. For which digital use cases does your organization use or plan to use video and sensor solutions, currently and in the next 24 months?



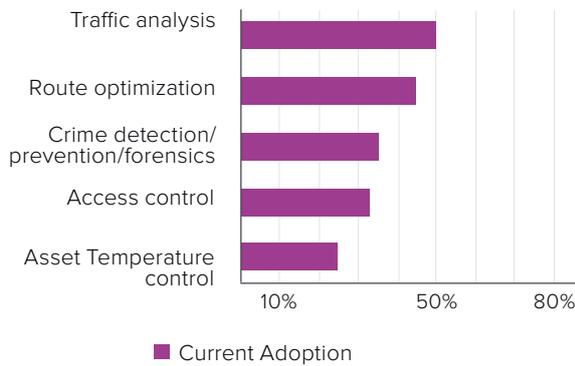
Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (Critical Infrastructure Respondents Only – N=80)

Transport & Logistics: Predictive maintenance and worker status monitoring are video-enabled use cases that will steer the agenda for transport & logistics companies for the next few years. This, together with the increased use of video technologies to analyze movements and optimize route planning, leads to improve delivery times, lower costs, and the reduction of transport-related environmental impact. This applies to both freight and passenger transportation.

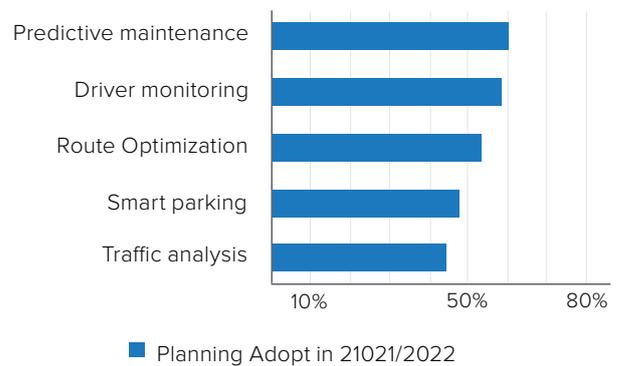
FIGURE 5
Leading Video-Enabled Digital Use Cases in Transport & Logistics

Q. For which digital use cases does your organization use or plan to use video and sensor solutions, currently and in the next 24 months?

TOP 5 Most Adopted Video-enabled Use Cases



TOP 5 Video-enabled Use Cases for Adoption Plans in 21021/2022



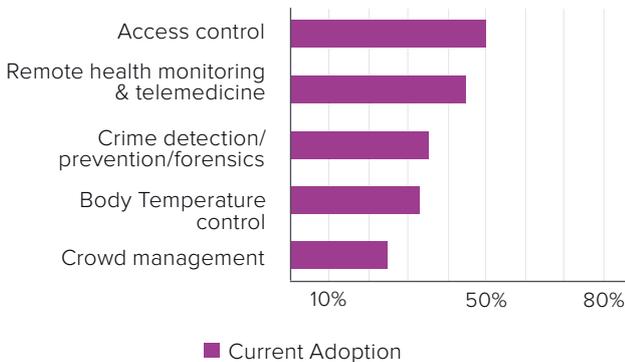
Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (Transport & Logistics Respondents Only – N=65)

Healthcare: The sector presents the most diversified list of use cases, ranging from in-hospital access control and crime detection to enabling remote health monitoring services. Expectations for video technologies are extremely high, with video expected to play a key role in advanced surgery and diagnostics scenarios, while enhancing in-hospital operations, improved patient assistance, and driving efficiency through technologies including automated inventory tracking.

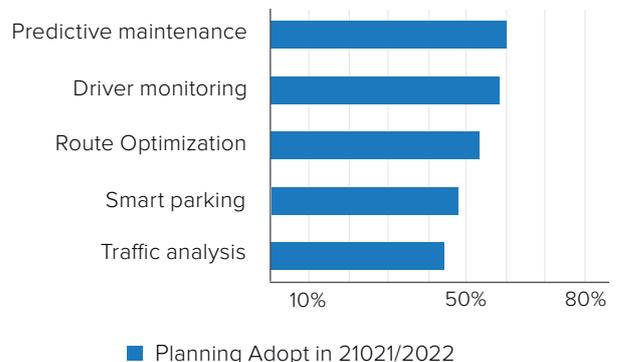
FIGURE 6
Leading Video-Enabled Digital Use Cases in Healthcare

Q. For which digital use cases does your organization use or plan to use video and sensor solutions, currently and in the next 24 months?

TOP 5 Most Adopted Video-enabled Use Cases



TOP 5 Video-enabled Use Cases for Adoption Plans in 2021 and 2022



Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (Healthcare Respondents Only – N=65)

It is clear how the list of beyond-security video-enabled use cases is growing, and it is equally evident how some of these digital use cases would be limited or even not possible without video technologies. This is testament to the key role that video technologies will play in organizations' digital road maps and New Next reignition. A New Next reignition and video technologies maturity evolution requires full orchestration and synergy among organizations' budget holders and business units.

Not an IT-Department Only Affair — New Power Maps Across the C-Suite Digital Dream Team

All business units and C-suite leads are now looking at technologies as pockets of value and accelerators of their organizations' digital transformation. This is clear when looking at digital plans and initiatives across European and UAE organizations. Business functions including operations, customer and employee experience, finance, and risk are not only pushing for higher investments in technology but are also increasingly managing these investments. IDC estimates that in 2021, 46% of overall European digital spending will be funded outside IT (IDC Worldwide IT Spending Guide, Line of Business).

Shadow IT is now happening in the light, every business function is becoming a "technology-savvy" function, with technology leaders having a seat at the decision-making table, alongside executive level line-of-business stakeholders. This is generating new digital power maps across business units, with new demands on technology providers for a quicker time to value, an obsession about business outcomes (prioritized over technology features and functions), and a use case conversation tied to measurable KPIs. Technology is indeed rising to the top everywhere, but these efforts are often still disjointed — risking the sort of inconsistency down the road which could derail businesses' future transformation projects and choke future digital lifelines. A need for a full orchestration of digital initiatives across business and IT units is required to have a significant and rapid business and societal impact from them. It's when this collaboration and sync among business executives happen that the C-suite transforms into a Digital Dream Team.

FIGURE 7
The Digital Dream Team



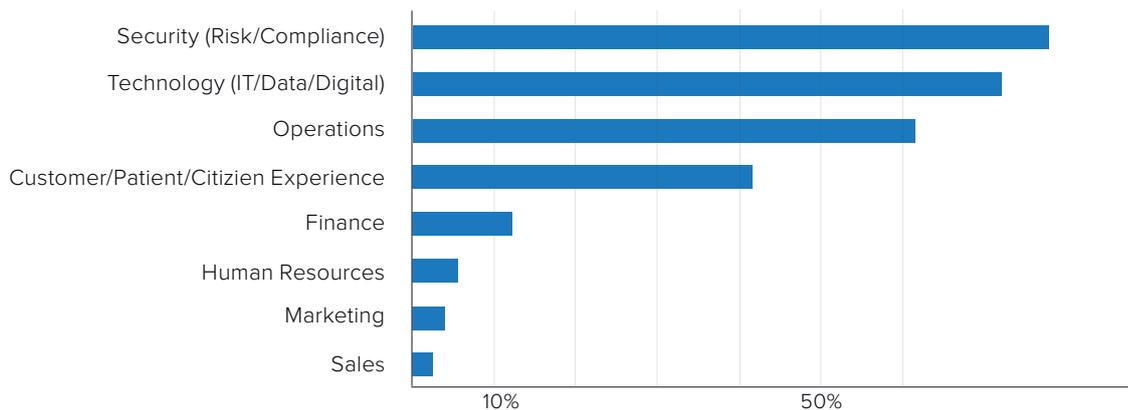
Source: IDC C-Suite Research, 2021

When it comes to video technology investments and plans, three key stakeholders hold the helm: security, technology, and operations leads. Security leads, unsurprisingly, are on the front row for physical asset security-related use cases, but they also have a key role in compliance and workforce safety related use cases. Tech leaders are at the core of digital decisions and enablement across multiple video-enabled use cases, both for granting IT operations resilience (mainly in the CIO domain) and generating new digital revenue streams and enhancing customer experience (more under CDO and CTO wings). Finally, operations leaders — at the intersection of the IT and OT worlds — steer the agenda for asset performance, operational resilience, (including maintenance) and life-cycle management video technology related applications.

Other key units and personas playing a key role are customer/patient/citizen experience and services leads, especially in the public sector and for those patient- and citizen-oriented use cases, and for finance leads, who, although they have a limited role in the final use cases and video tech selection process, are the budget guardians providing final sign-off.

FIGURE 8 Who Influences and Decides on Video Technology Investments and Use Cases?

Q. When thinking about your organization's video use cases, which functions influence or make investment decisions? (% of respondents selecting each organization unit — multiple selection)



Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (N = 320)

A video-empowered New Next is not and cannot be on the IT department's shoulders alone. It requires a company-wide mindset change and full orchestration across the different business units and CxOs, all of them being part of the digital journey.

Organizational leads are called to create a collaborative digital dream team across the company, with C-suite leaders moving from a "Tug-of-War" (leaders with unsynched initiatives fighting over the control of and budget for use cases) to a "Tug-of-Value" (proactive scoping across units, helping each other forward). This is the way forward to accelerate and scale video technology initiatives towards a hyper connected video core.

Enabling a Hyper-Connected Video Core

As cameras and sensors proliferate in most organizations, the traditional setup with a limited number of cameras tightly coupled to (and typically purchased alongside) one on-premises video analytics solution is no longer meaningful. Today, organizations' stance on video technologies is changing in several ways, as they:

- Have multiple clusters of cameras, some related to security/surveillance, some related to other use cases
- Want to analyze not just video feeds, but also various types of sensor data (temperature, humidity, air quality, etc.)
- Are increasingly purchasing video analytics software separately from cameras and sensors and seek to apply multiple analytics solutions on top of the same data
- Are increasingly moving IT workloads from datacenters to cloud providers

IDC has fielded multiple surveys to understand how organizations are changing the way they purchase and deploy video technologies. The next sections of this White Paper will take a closer look at two trends that stand out in these surveys. Firstly, we will explore how businesses and public organizations are increasingly seeing video management and analytics as part of the core IT department assets. Secondly, we will look at what new technologies are demanded by organizations when purchasing video surveillance solutions.

Video Technologies and Video Content Will Become Part of Core IT

So far, most deployments of video surveillance systems have happened at the edge of the enterprise, largely disconnected from core IT assets, such as ERP and CRM systems, content management, and collaborative applications. The video analytics system is implemented as part of the camera solution by almost half of organizations. However, with the proliferation of video use cases and camera and sensor volumes, 58% of European and UAE organizations expect to implement video analytics solutions with additional analytical capabilities and connect to more digital assets including cameras and sensors within two years. In the same period, the proportion of organizations "using video technologies as an advanced technology platform connected to other systems, inside and/or outside the organization" will rise from 8% to 26%. In other words, video analytics solutions are rapidly changing status from a standalone edge technology to a core intelligent IT asset.

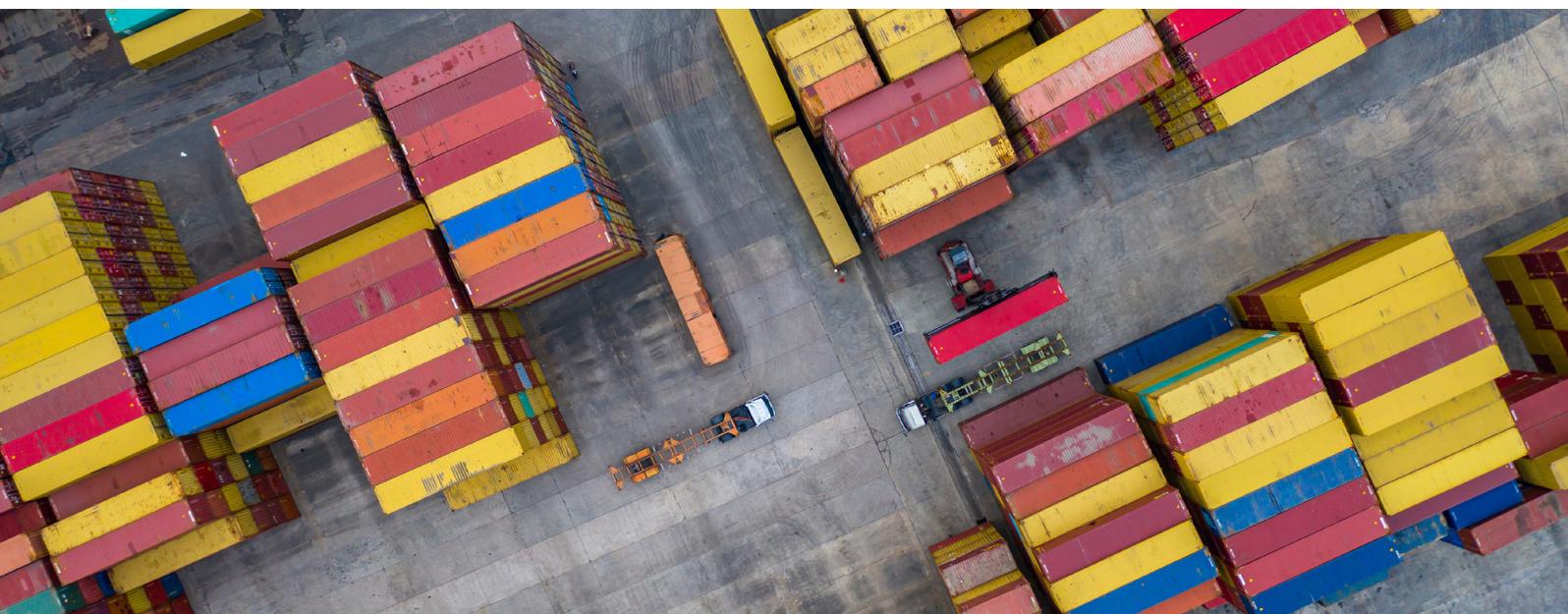
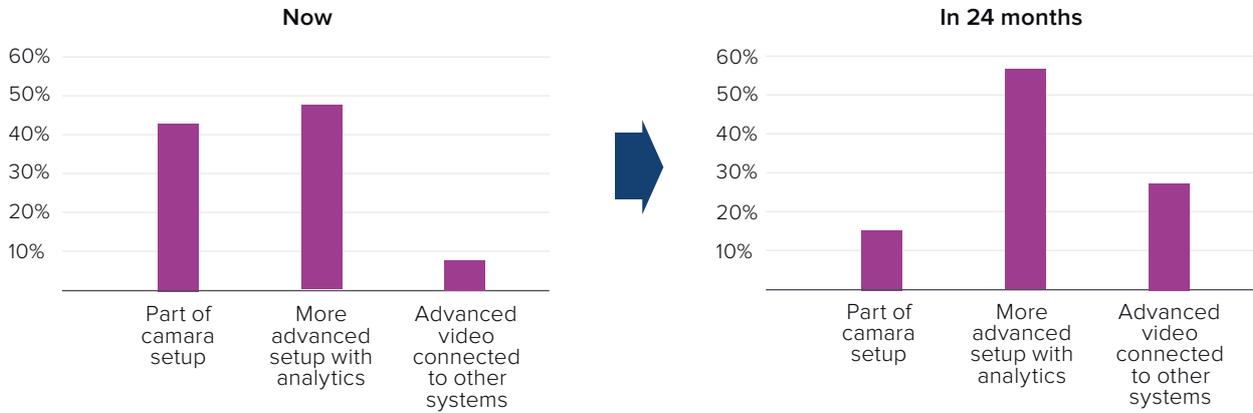


FIGURE 9
Video Technology Will Increasingly be Part of the IT Core

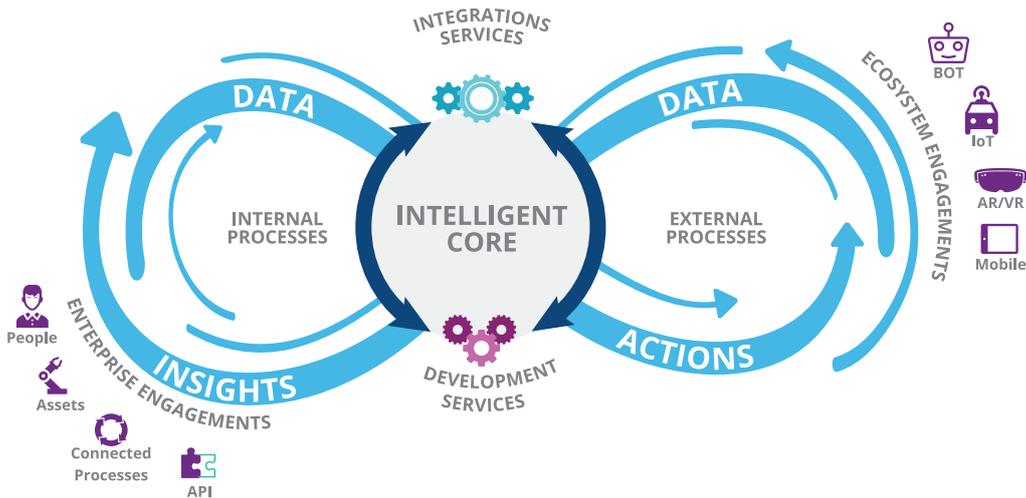
Q: What best describes your organization's current and planned use of video technologies now and in 24 months?



Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (N = 320)

This relationship between camera and sensor data and core IT assets reflects a general move among organizations towards to a future IT architecture in which the data management and analysis happens in an "intelligent core" fed by data and information from users, systems, sensors, and outside sources.

FIGURE 10
Infinite Loop Between an Intelligence Core and Camera & Sensor Data



Source: IDC, 2021

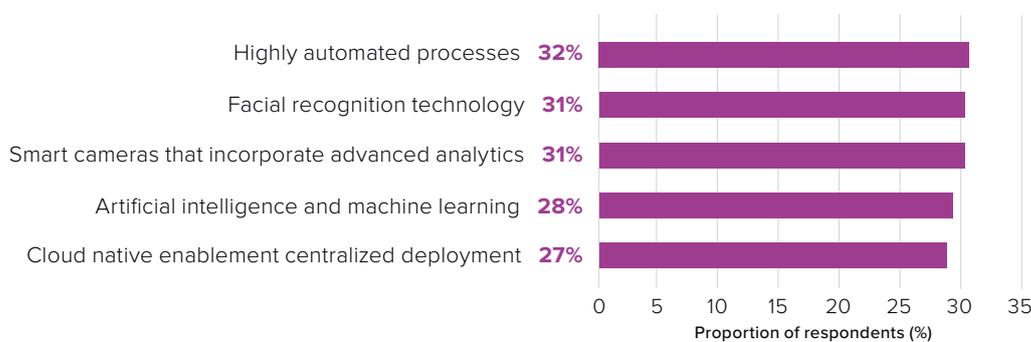
IDC predicts and the survey data shown in Figure 9 confirms that video technologies will move into this intelligent core.

New Technologies Will Take Center Stage in the Medium Term

In April 2021, IDC surveyed 260 US-based buyers of video analytics solutions to better understand the key capabilities required over the next three to five years. The buyers clearly prioritized process automation, facial recognition, smart analytics, artificial intelligence, and centralized cloud-driven deployment. The bottom line is that businesses and public institutions are actively planning for and expecting new technologies to be deployed with video analytics solutions to enable a wider set of advanced use cases to be delivered. These new use cases can help enterprises deliver new digital experiences, generate digital revenues, or drive greater operational efficiencies and ultimately remain competitive in the new digital economy.

FIGURE 11 Video Surveillance Will Evolve Towards These Top-Capabilities

Q: Which capabilities will be required by video surveillance solutions in the next three to five years?



Source: IDC US Video Surveillance Survey, April 2021. N=260

Dilemmas in the Age of Facial Recognition and Artificial Intelligence

Technology developments in and around video technologies will open many new opportunities for organizations to reduce traffic congestion, improve patient safety, optimize public transportation, improve quality assurance, and so on. However, as organizations apply new intelligent technologies to video and sensor data and begin to share this data more broadly to enable new use cases and business outcomes, several new dilemmas and issues appear:

- What about the individual's right to privacy?
- What if facial recognition technologies are used to suppress citizens in totalitarian regimes?
- What if facial recognition technologies are used for illegal purposes inside private or public sector organizations?
- What is the risk of data breaches of video and sensor data?

These dilemmas are continuously illustrated by real-life events. In March 2021, a group of hackers gained access to the live feeds of 150,000 surveillance cameras inside hospitals, companies, police departments, prisons, and schools via the Silicon Valley startup Verkada Inc. Furthermore, new technology developments will continue to challenge lawmakers and pose new dilemmas. For example, Amazon received a US patent to provide "surveillance as a service." This implies using the planned delivery drone fleet to monitor properties from above, as a "secondary task" after package delivery. The plan is for customers to be able to subscribe to a continuous surveillance service from Amazon.

IDC expects significant legislative activity around video analytics as new video technologies become more widely deployed. In October 2019, California became the third state to ban facial recognition software in police body cameras. In April 2021, the EU Commission proposed new legislation to partially ban law enforcement's use of remote biometric surveillance technologies (such as facial recognition) in public places.

These issues have not been lost on the buyers of video technologies. As we show in the next section, the survey showed that privacy and security concerns were major barriers for new projects involving video technologies.

Challenges When Implementing Video Technologies

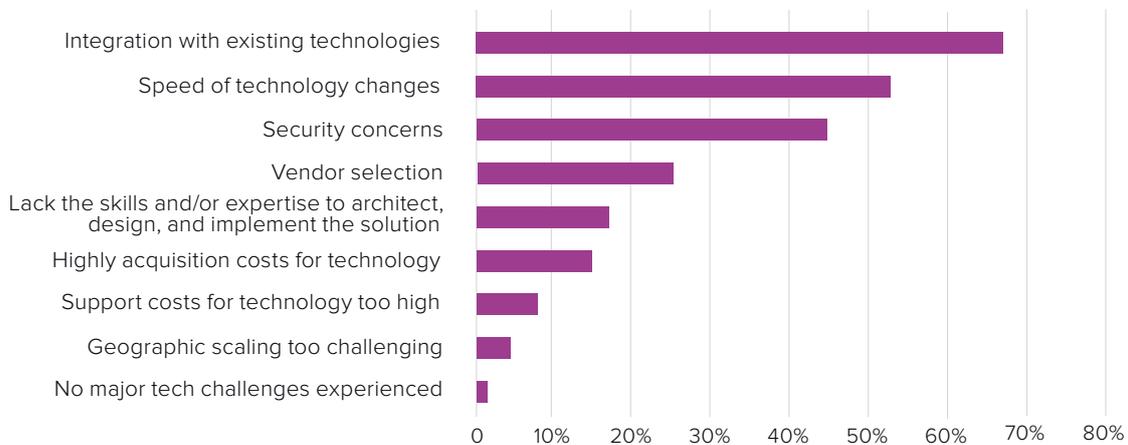
IDC asked the 320 respondents to identify IT as well as business barriers when implementing video technologies across security and non-security use cases.

IT Challenges

Three IT challenges stood out in the European responses. The first was integration with existing technologies and reflects how video setups increasingly span many camera and sensor types and should be accessible to multiple applications and systems in the enterprise. Secondly, the speed of technology change is a key IT concern. Again, as setups become increasingly heterogeneous, video technology buyers perceive an increasing risk of obsolescence and technical disconnects. Thirdly, security was a key concern as organizations are looking into better leveraging video and sensor content while minimizing the risk of security breaches.

FIGURE 12
Video Tech IT Challenges

Q: What major IT challenges has your organization faced (does your organization expect to face) when implementing its video use cases?



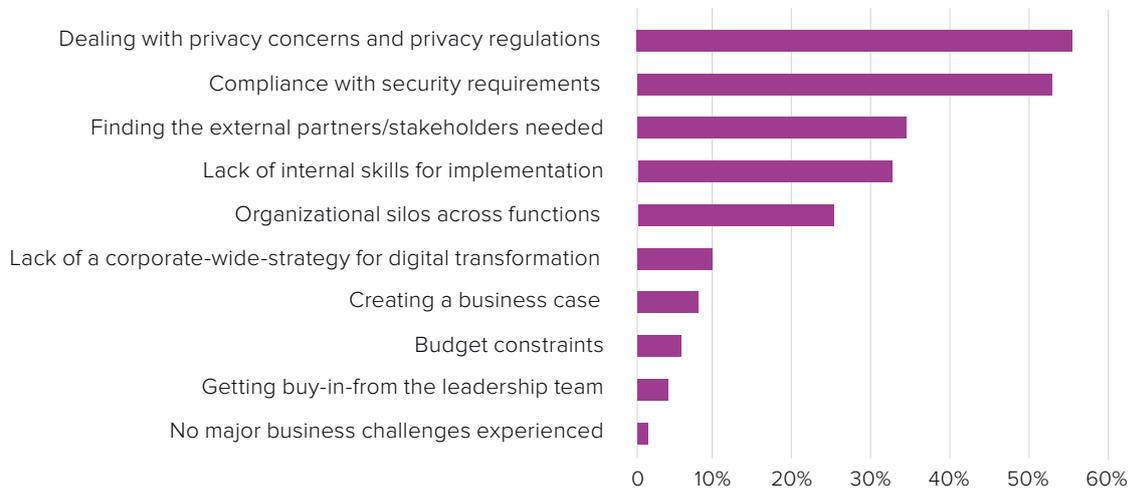
Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (N = 320)

Business Barriers

When asked about business challenges related to video technologies, two challenges rose above all others: privacy concerns and security compliance concerns. So, while the European and UAE organizations appear to have plenty of planned video technology projects with business cases in place, these projects are inhibited by concerns of possible missteps in terms of privacy and security. A key takeaway here is that as new video use cases appear, privacy and security risk mitigation is a key activity as part of building a business case and in selecting the right technology and services provider.

FIGURE 13 Video Tech Business Challenges

Q: What major business challenges has your organization faced (does your organization expect to face) when implementing its video use cases?



Source: IDC EMEA-Milestone Video Technologies Survey, April 2021 (N = 320)

Unlocking a Video-Empowered New Next – Where to Start?

Video technologies are playing a key role in enabling and accelerating European and UAE organizations' digital capabilities and road maps, all along their road to post-pandemic recovery and a return to growth. Digital orchestrators eager to unlock a video-empowered New Next need to execute change in multiple layers, from technologies to skills, fostering new cross-business unit exchanges and innovative use cases.

To accelerate innovation using video technologies, IDC suggests a "3P" approach, covering People, Platform, and Power of Sight:

- **People:** A lack of video technology skills was mentioned by many respondents as both a technical and business barrier. Businesses and public institutions must (as they have traditionally) leverage outside technical skills from implementation partners but must also increasingly bring skills inhouse. This transition is driven by the fact that video technologies are increasingly part of core IT and that video and sensor data is increasingly shared across multiple applications. Skills related to technical implementation and integration are likely to be provided by services partners, while skills related to video analytics and security will increasingly move inhouse.
- **Platform:** Video management software installed at the fringes of the enterprise will increasingly be replaced by a more centralized video analytics solution — on premises or on the preferred cloud platform. The platform enables one platform to access and analyze multiple camera clusters and other sensor data, increasing economies of scale. Furthermore, a software-based platform enables the wider use of video analytics data as a source of real-time operational business information.

- **Power of Sight:** It is paramount to be aware of what is next in terms of video technology features linked with other emerging technologies, but even more importantly in terms of leading digital use cases that can have a concrete impact on specific business challenges and scenarios. The pandemic brought some new use cases under the spotlight (e.g., body temperature control) and accelerated others (e.g., supply-chain tracking, remote workforce assistance). A reiterated assessment of those use cases expected to stay, morph, or align with beyond-the-horizon thinking will be key to enabling a fast return to growth and a resistant post-pandemic era.

IDC advises the executives of video technology-focused businesses and public institutions to:

- Think about desired final business outcomes first, and only then work backwards to select the right video technologies
- Develop a multi-year video-enabled use cases roadmap by horizon, starting from easier to implement use cases to more complex and advanced ones
- Avoid trapping video initiatives in organizational silos and be sure to involve both business and IT stakeholders in each video technology project. As video technologies are increasingly moving to core IT, IT department involvement is vital and mandatory for all initiatives, even if third-party cloud platforms are used
- Launch at least two experiments in the next six months, leveraging video technologies and a mix of emerging technologies aimed at delivering business value
- Select technology vendors based on their ROI focus, plug & play impact, and act-fast approach

Conclusion

This White Paper concludes that European and UAE organizations must prepare for the plethora of video-enabled use cases that will emerge beyond a purely security focus. Video technologies are moving from an "insurance" (the surveillance angle) to a real business differentiator, such as in citizen service, product quality, patient care, and customer experience. For example, if a city uses video technologies to manage traffic, collect waste, and control parking, it is likely to be perceived as less congested, cleaner, and more convenient compared to a city that does not use such technologies.

As use cases proliferate and become more strategic to organizations, video technologies will increasingly become part of core IT and IT departments must find ways to make video solutions and content scalable and shareable, while at the same time dealing with security and privacy concerns.

Organizations pursuing business projects using video technologies must identify the right mix organizational sponsors and budget holders across traditional video stakeholders in IT and security and new stakeholders in operations, customer experience, and finance. It is also essential to establish a use case road map starting from the most apparent cases toward more strategic but less mature ones

Methodology

This IDC White Paper is based on existing IDC research, including IDC Digital Transformation and Software research, data from IDC's Worldwide Spending Guides, and buyer and vendor conversations. IDC also carried out a dedicated Video Technologies survey interviewing 320 European and UAE organizations across four industries: Government, Healthcare, Critical Infrastructure, and Transportation.

Definitions

IDC defines the video analytics market as composed by those vendors that enable the software solutions that provide the command-and-control functions to manage video camera constellations as well as providing the analytical functionality required to interpret the video data that is collected by them. While this is somewhat different from other analyst approaches, it is faithful to the evolution of video surveillance software where video management systems (VMS) increasingly include analytics functionality or interface with analytic applications. We also refer to video technologies, which is a broader term that includes both the video analytics software and related hardware components.

Video-Enabled Use Cases Definitions

Government

- Anomalous behavior analysis: assisting event managers, volunteers, and first responders to take proactive and preventative action for crowd control, traffic management, public safety, and emergency response while providing event attendees with information for a safer and pleasant experience.
- Augmented firefighting: providing fire fighters with critical information about the harmful chemical components involved in fires as well as heat levels and prediction of fire patterns. This for better situational awareness and the minimization of personal injury and damage to property and infrastructure.
- Building temperature control: real-time monitoring of building temperature in connection with information management systems to use energy in the most cost-effective way while providing occupants the best possible comfort.
- Crime detection/prevention/forensics: utilizing video and other types of data to enable advanced analytics, cognitive solutions, and visualization tools to connect the crime prevention dots more expeditiously, unearth invisible patterns, identify suspects more quickly, and save officer and citizen lives.
- Emergency management: allowing first responders to collect better information, enhance situational awareness, manage digital evidence from new sources, and deploy resources more effectively and quickly.
- Environmental monitoring: cities around the world use weather and environmental sensors to gather information for use in population health and emergency services by monitoring air quality, water levels, weather patterns, unsafe air particulates, pollution, and so forth. Analyzing long series of data can provide valuable information for long-term planning.
- Public building security: monitoring public buildings' access and occupants' behavior to analyze movement dynamics while avoiding unauthorized access and providing a high security level.
- Road surveillance, speed management, and security: real-time monitoring of roads and vehicle movement to identify any traffic violations (e.g., speed limits) and/or drivers' risk exposure.
- Smart parking: smart parking systems based on sensors, video, or radar to determine the occupancy of a parking space and transmit this information to a nearby driver. Payment capabilities and real-time parking rate changes can also be integrated into the systems; analytics are provided to the parking operator.
- Traffic analysis: keeping traffic flowing by ensuring traffic signals respond to real-time situations. As technology develops, more devices and services will be connected and transmit data, such as traffic signals and cars themselves, without the use of street-based sensors. This to minimize congestion on the roadway system, allowing traffic to flow smoothly, ensuring time reliability of the roadway, and minimizing unwanted vehicle emissions. Safety concerns (ice, fog, etc.) can also be identified and transmitted in real time to approaching drivers/vehicles.

Critical Infrastructure

- Access control: monitoring infrastructure and restricted areas to analyze movement dynamics, while avoiding unauthorized access.
- Asset temperature control: real-time monitoring of asset temperature to prevent asset failure and assess working status and performance.
- Environmental monitoring: using weather and environmental sensors to gather information on air quality, water levels, weather patterns, unsafe air particulates, pollution, and so on. Analyzing long series of data can provide valuable information for long-term planning and risk detection.
- Leakage/smoke detection: detecting any grid or asset leakage and/or smoke emission to reduce energy and cost waste while providing a high standard of security.
- Line inspection: monitoring the performance and physical state (e.g., presence of vegetation) of lines, significantly reducing cost and frequency of manual inspections.
- On-site security: monitoring security levels across facilities and buildings, detecting and preventing any type of risk exposure and dangerous situations for occupants.
- Personal protective equipment detection: automatically ensuring that all necessary safety equipment is worn and worn properly by workers.
- Predictive maintenance: developing accurate predictive models of assets' potential failures. Higher levels of asset availability results in less factory downtime and lower capital appropriation spending. There will also be a lower cost of maintenance delivery.
- Remote asset maintenance: enabling remote maintenance operations, providing on-site technicians with relevant information and guided work instructions from elsewhere, while in some cases directly performing maintenance operations with no need for the physical presence of any technician.
- Remote asset monitoring: remote monitoring of assets and processes against dynamic benchmarks to improve safety monitoring and reduce inspections.

Transport & Logistics

- Access control: monitoring infrastructure and access of people to restricted areas to analyze movement dynamics, while avoiding unauthorized access.
- Asset temperature control: real-time monitoring of asset temperature to prevent asset failure and assess working status and performance.
- Crime detection/prevention/forensics: utilizing video and other types of data to enable advanced analytics, cognitive solutions, and visualization tools to connect the crime prevention dots more expeditiously, unearth invisible patterns, identify suspects more quickly, and save officer and citizen lives.
- Driver monitoring: driver performance is assessed including average speed, length of idling times, patterns of starting/stopping, and type of acceleration. Driver profiles are created from aggregated data, allowing carriers and fleet operators to determine which drivers are more prone to accidents through more real-time information and consistent risk assessments.
- Predictive maintenance: developing accurate predictive models of assets' potential failures. Higher levels of asset availability results in less factory downtime and lower capital appropriation spending. There will also be a lower cost of maintenance delivery.
- Route optimization: understanding the optimal transportation mode and routing, thereby saving significant costs and improving resource utilization. Planners and transportation managers can develop consolidation opportunities, improve mode selection, and utilize transportation optimization strategies such as pooling, zone skipping, shipment consolidation, and milk runs.

- Smart parking: smart parking systems are based on sensors, video, or radar to determine the occupancy of a parking space and transmit this information to a nearby driver. Payment capabilities and real-time parking rate changes can also be integrated into the systems; analytics are provided to the parking operator.
- Traffic analysis: keeping traffic flowing by ensuring traffic signals respond to real-time situations. As technology develops, more devices and services will be connected and transmit data, such as traffic signals and cars themselves, without the use of street-based sensors. This to minimize congestion on the roadway system, allowing traffic to flow smoothly, ensuring time reliability of the roadway, and minimizing unwanted vehicle emissions. Safety concerns (ice, fog, etc.) can also be identified and transmitted in real time to approaching drivers/vehicles.

Healthcare

- Access control: monitoring infrastructure and the access of people to restricted areas to analyze movement dynamics while avoiding unauthorized access.
- Body temperature control: assessing the body temperatures of personnel and visitors to detect any potential virus contamination risk.
- Clinical communication & collaboration: Providing reliable, easy-to-use clinician-to-clinical or patient-to-clinical communication channels using mobile videoconferencing technology. This improves the ability of clinicians to collaborate and coordinate patient care, thus improving the care delivery process and reducing costs through the efficient delivery of care.
- Crime detection/prevention/forensics: utilizing video and other types of data to enable advanced analytics, cognitive solutions, and visualization tools to connect the crime prevention dots more expeditiously, unearth invisible patterns, identify suspects more quickly, and save officer and citizen lives.
- Crowd management: monitoring and managing in-hospital patients' movements and queues, enabling a better in-hospital visitor experience.
- Patient wayfinding assistance: supporting in-hospital patients' movements and facilities/rooms identification, while granting a smooth in-hospital experience.
- Real-time inventory: better real-time location visibility and intelligence and insights around clinical and nonclinical-grade elements and assets. Knowing where critical resources are located and anticipating inventory gaps at any given time makes a difference in costs, experiences, and the quality of care that is delivered.
- Remote health monitoring & telemedicine: providing consumers with medical-grade monitoring devices and clinical support via coaching and intervention, when necessary, to better manage their chronic conditions. Moreover, virtually recreating the in-office visit through EHR-based telemedicine will improve access to care and patient experience and deliver on value for both providers and patients through a range of applications, such as management of medications, chronic care conditions, counseling and behavioral conditions, post-discharge monitoring, patient outreach, and communication.
- Smart surgery and diagnostics: offering better opportunities for visualization, practicing and execution of surgical procedures and techniques. This in parallel with the enablement of advanced tech-enabled diagnostics techniques.

MESSAGE FROM THE SPONSOR

Milestone Systems is a global leader in open platform video management software. More than 3,000 hardware and software partners can integrate their video solutions in our open platform for security and beyond security purposes in cities, schools, hospitals, and many other institutions.

We enable customers to see what their eyes cannot always see, and we help them understand what they are looking at so they can analyze the past, predict the future, and make better decisions. For example, in cities video and sensor technology can enhance the performance and quality of services such as energy, connectivity, transportation, and utilities. This can help city leaders to meet the needs of their residents and are important capabilities in creating an intelligent and more sustainable society.

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