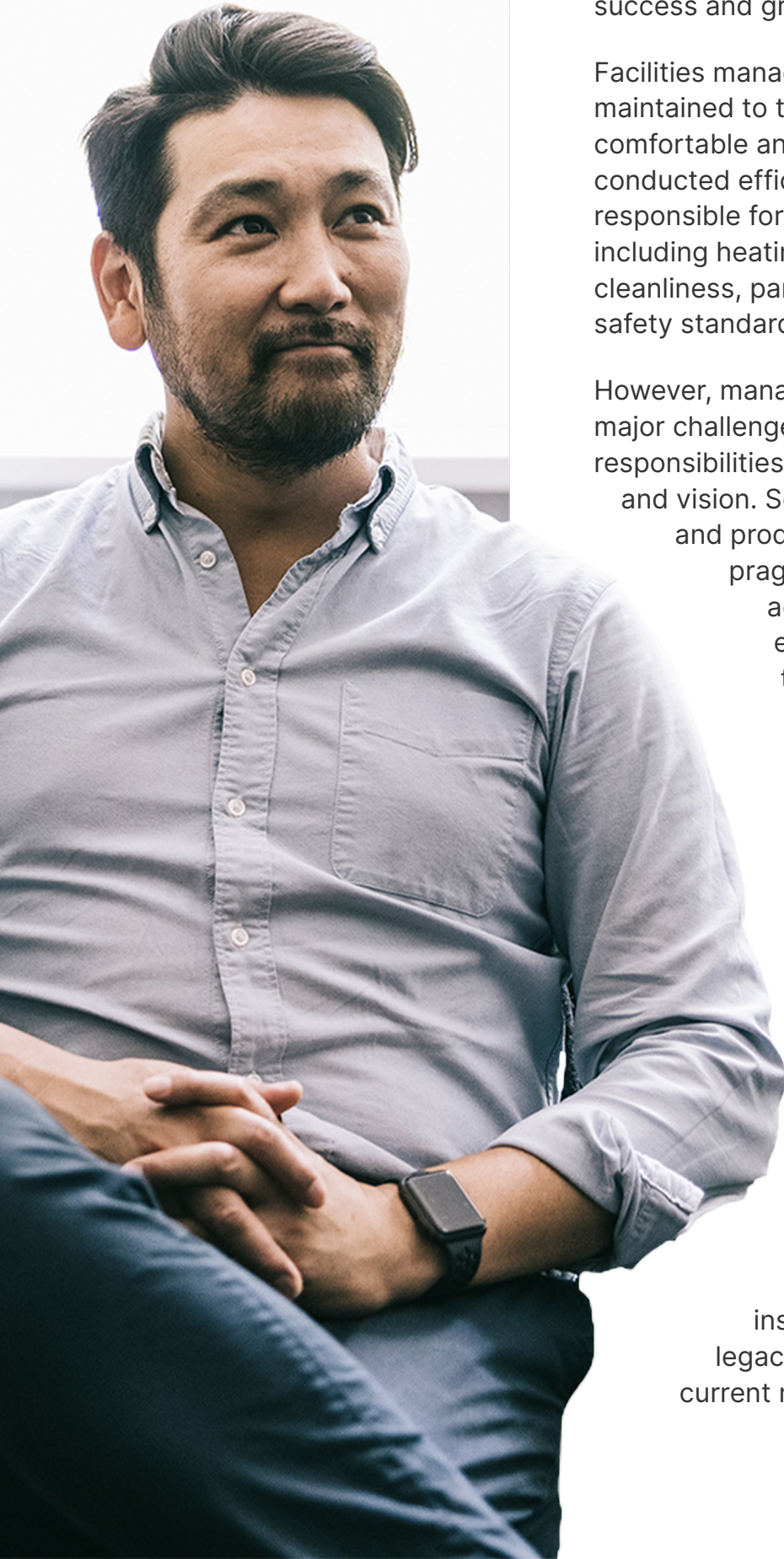


Facilities of the Future: Safety and Security Meet Smart Buildings





The facilities management (FM) role is vital to the success and growth of an organization.

Facilities managers ensure facilities are used and maintained to their fullest potential, employees are comfortable and productive, and operations are conducted efficiently and sustainably. FM roles are responsible for every small and large convenience, including heating and cooling systems, lighting, cleanliness, parking, and maintaining health and safety standards.

However, managing facilities effectively is a major challenge, and finding success with these responsibilities requires a balance of pragmatism and vision. Sound decisions around cost, safety, and productivity are always paramount. But, pragmatism must be balanced with vision, accounting for possible futures with ever-evolving organizational needs and technological developments. Without vision, technologies and processes become stale and outdated—or worse, liabilities.

For example, one area of technology that remains underutilized by facilities managers is their video surveillance system. It is often treated as a one-off purchase, like an insurance policy: choose a system to try and protect against unexpected financial losses from security incidents or threats, and don't revisit it until something happens or it's time for new construction. Unfortunately, it's not until facilities managers test that insurance policy that they realize their legacy surveillance system can't support the current needs of their enterprise.

Conversely, by adopting a forward-thinking mindset, facilities managers can utilize modern technologies to address not just surveillance, but other key challenges they face today, such as:

- Lack of visibility of assets and conditions across facilities
- Meeting new challenges in the hybrid work era, such as safety, security, and space fluctuations
- Inefficiencies from manually driven operations and complicated troubleshooting
- High energy costs that arise from unoptimized consumption
- Wasteful spending from unmonitored energy use and water leaks

These challenges would be difficult to meet with legacy (on-premises) video surveillance solutions. However, data-driven technologies, including cloud-managed IoT devices like sensors and smart cameras, facilitate digital transformation within the variety of environments and spaces managed by FMs today. And let's not forget the importance of cybersecurity across cloud-managed IoT: achieving reliable and resilient digital transformation depends on a solid cybersecurity foundation.



Video surveillance has been slow to evolve

Where are we today? Historically, video surveillance cameras were an outlier to a cloud-first strategy, and it was common for organizations to turn to local break-fix vendors for services. But with siloed, inaccessible video footage and the tedious manual work required to retrieve it, legacy video surveillance systems present serious problems for modern enterprise organizations.

In mid-2022, Cisco Meraki researched the needs of facilities directors and managers, as well as maintenance directors, from various industries, including retail, financial services, healthcare, and manufacturing. During this study, conducted by Cascade Insights, respondents told us about the challenges they faced responding to security incidents because they were limited by their existing on-premises video surveillance technology.

Some of the top issues FM roles described for legacy video surveillance were:

- Video storage limitations not meeting policy requirements
- Lack of remote monitoring
- Tedious in-person video footage retrieval
- Manual viewing and searching for incidents
- No notifications of security or other threshold breaches
- Siloed security management and tasks across locations
- No analytics capabilities

In particular, one respondent described the frustrations of not having a system with remote monitoring capabilities. This respondent's company had made the decision to use a local surveillance vendor for one of its facilities, which led to the installation of a basic system with a camera in the main lobby and an alarm system on the doors and windows. However, while this respondent indicated that the pricing structure was extremely reasonable and well within budget, the system's inconvenience was a nightmare. She had to drive across state lines to the facility just to view any footage, which resulted in a loss of time and money just to gain visibility into the facility. The surveillance system was not suited for enterprise use.

*"We wanted to upgrade our security to see the entrances and registers where most associates are. So, we explored our options and chose a high-end security system with 360-degree cameras. However, we figured out you could **only retain video footage for 30 days**, and that was a huge problem."*

LARGE NATIONAL RETAIL STORE MANAGER

*"One of my facilities is in a state where we use a private company for surveillance. They have an app I can use to arm or disarm an alarm remotely, but I can't see the video feed. So, it's really **inconvenient because I have to go in person to that state to look at the video footage**, which takes extra time and cost to get there."*

**REGIONAL DIRECTOR OF OPERATIONS,
HEALTHCARE**

"Our previous platform wasn't expandable and didn't keep up with the changes in technology. It couldn't do analytics. It was a device only for recording, and then it'd be gone. If you wanted to find something, you'd have to go in there and manually search around, which could take hours sometimes."

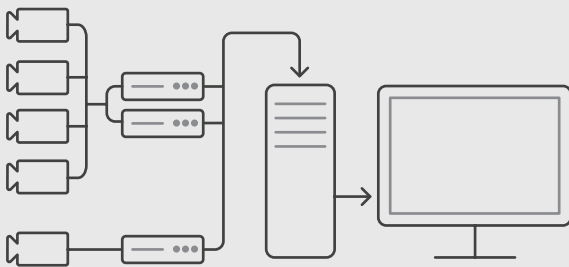
DIRECTOR OF FACILITIES



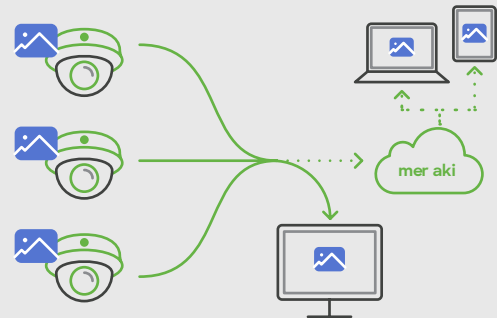
Cloud-managed video services: ready for the enterprise

While many organizations continue to use legacy on-premises video surveillance solutions, an increasing number of businesses see the advantages in moving to the cloud.

On-Premises Video Surveillance



Cloud-Managed Video Services



Fundamentally, cloud-managed video services allow you to store and remotely view video footage across all your facilities from a single device. Additionally, with edge storage on cloud camera systems, storage is no longer a significant concern as it scales with each camera added. With storage that scales, you no longer have to do frustrating guesswork in forecasting a three- or five-year purchasing cycle for on-premises video infrastructure. And, by distributing storage across each end point, single points of failure are eliminated, reducing the risk of losing all video across a system. Further, by migrating video surveillance workloads to the cloud, cloud-managed video services reduce the burden on the corporate network and help you control operational costs.

Remembering that a foundation of cybersecurity is critical, migrating to a cloud-managed camera system eliminates the manual nature of firmware and security patch updates with automatic updating service. Additionally, a gap in physical security

protocols around access to the server room with the NVR/DVRs is also removed. Moreover, while on-premises solutions use rigid access designs that can typically only be controlled through specific physical locations, cloud-based systems facilitate granular user permissions to control access and management roles which can be handled remotely.

From a purely pragmatic perspective, cloud-managed video services solve many of the problems faced by facilities managers who continue to use on-premises video surveillance systems. But there are further benefits that arise from transitioning to cloud-managed video services.

Cut through the information haze with enhanced visibility

Gathering footage from connected cameras is only half the equation. To experience the full value of interconnected spaces, that data must be made actionable.

A building equipped with intelligent devices—such as smart cameras and sensors—collects information and data streams from multiple security systems in a single cloud-based interface. When this data is processed at the edge and sent through an analytics layer in the cloud, facilities practitioners can not only

see what is happening across their facilities at any given time, but more importantly, can understand how operations are being impacted. This real-time view of operations across the entire organization would not be possible with legacy infrastructure, which uses disparate systems and technologies.

Fig. 01
Connected cloud-managed devices help facilities managers understand entire facilities in one glance, from anywhere.

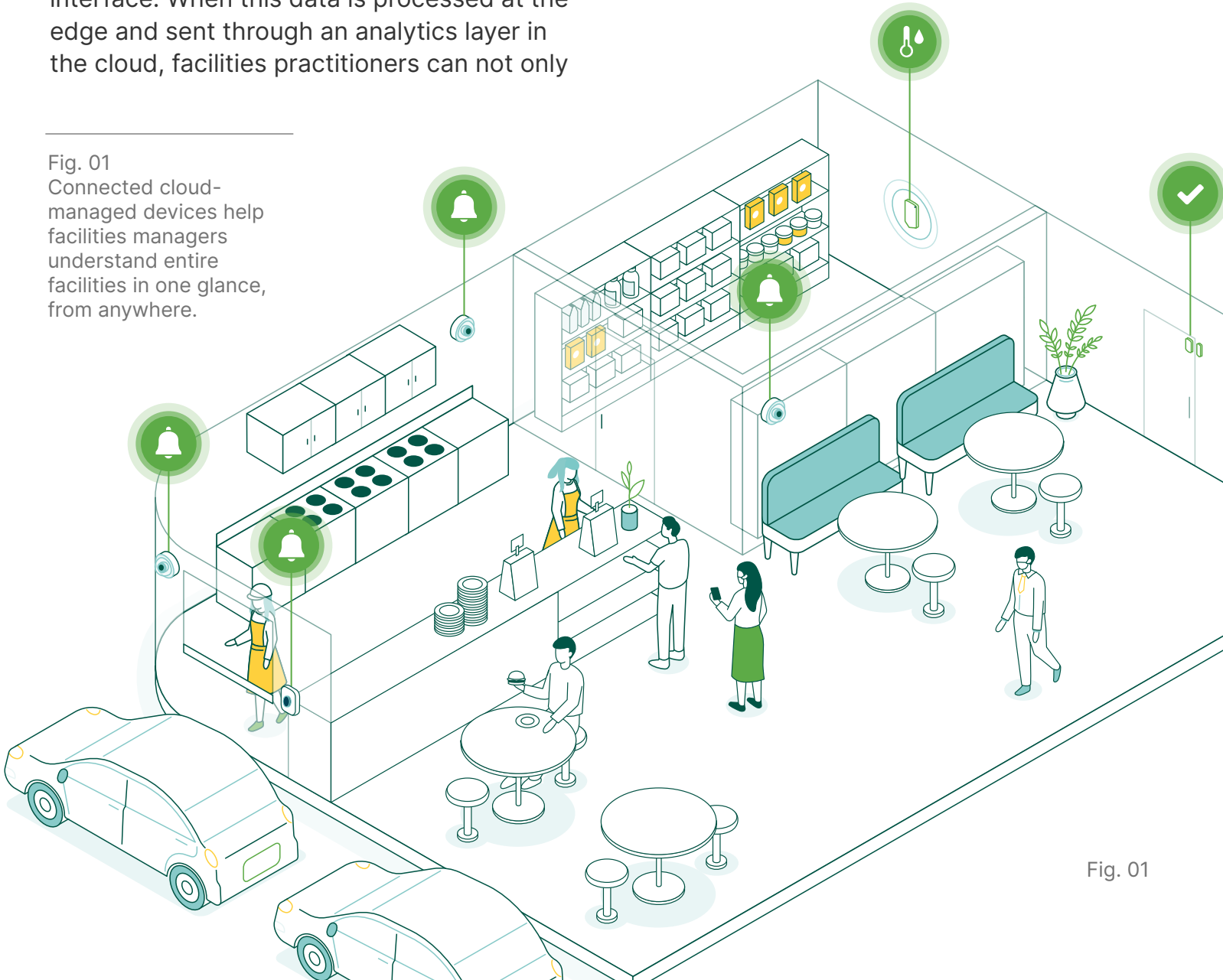
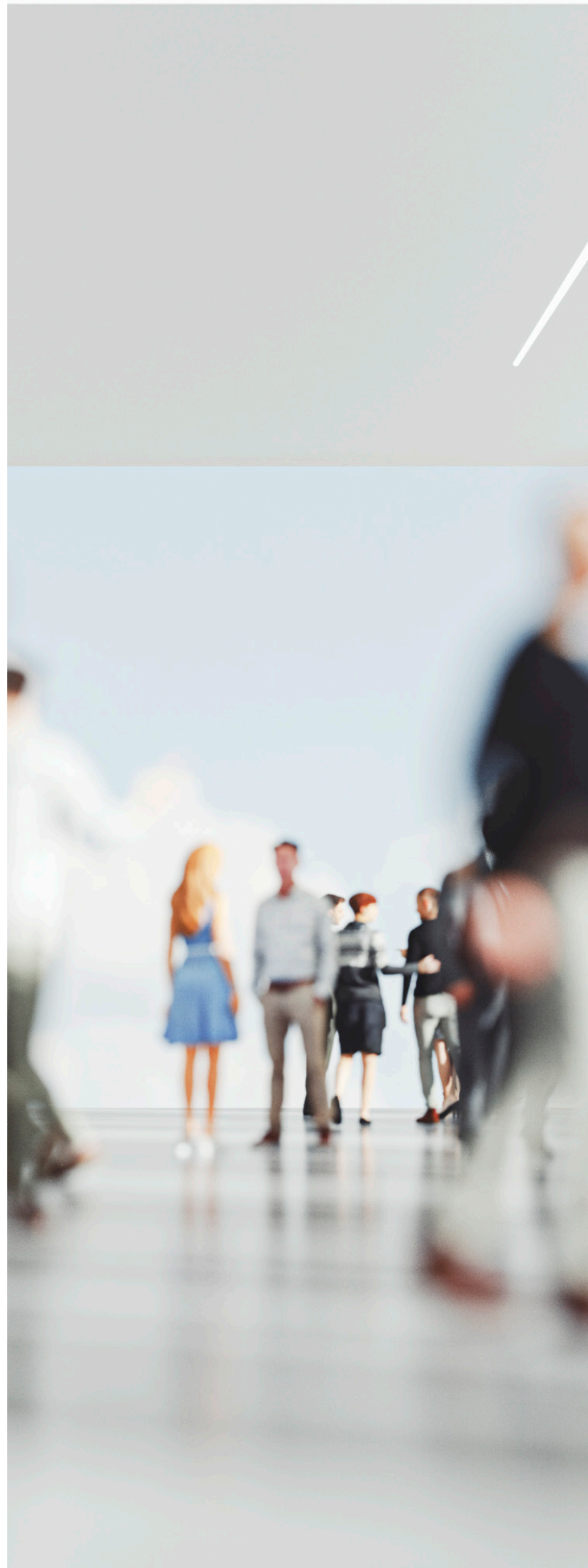


Fig. 01

With a complete and centralized view of all your facilities' security and environmental data, facility leaders responsible for safety and security can more easily spot risks and identify opportunities. Remote access to information from any device and location provides heightened levels of situational awareness, improving flexibility and speed in managing responses. Furthermore, a centralized dashboard allows you to quickly share footage and findings with other parties, including first responders, other internal departments, company leadership, and local agencies. When a rapid response is paramount, this increased collaboration during a security incident can be a decisive factor.

Ultimately, cloud-managed video services provide facilities managers with crucial visibility and flexibility: visibility to protect your organization's employees, assets, and facilities, and flexibility that comes with an infrastructure that scales as your organization evolves and grows. And, with cloud-based data analytics capabilities, your teams are empowered to make informed decisions that can help your organization achieve its security goals today and in the future.



Facilities management is critical for the future of work

While your organization's security needs are critical, new patterns in the way we work place broader demands on facilities management. Today, leaders and decision makers across your entire organization are feeling pressure to create safer, more comfortable, more adaptable, and more productive spaces:

- In a 2022 [CIO Dive survey](#) of 200 top executives and managers, 91% said their organization plans to change its indoor spaces in the next one to two years; the two most common reasons given for these changes were increasing efficiency (41%) and supporting growth (40%)

- In the same survey, 58% of manufacturing leaders and 48% of retail leaders said controlling costs and cutting waste were top reasons for indoor space changes already planned
- A 2022 KPMG study found that 70% of U.S. CEOs believe environmental, social, and governance (ESG) investments [improve financial performance](#)

These goals may primarily concern leaders in other departments in your organization, but all of them involve facilities management in some way. Thus, any surveillance purchase becomes less about the question, "does this purchase help secure my facilities?" Instead, the question you could ask is, "beyond security needs, how can this purchase help my organization meet its productivity goals, operations cost targets, and sustainability goals as well?"



Previously, facilities managers would have had to purchase multiple vendor solutions—one for each area of oversight—and try to extract understanding from siloed pools of data. But cloud-managed IoT devices with APIs no longer present these restrictions. With smart spaces and the holistic and integrated facilities data they provide, facilities managers are now empowered to help their organization address the most important strategic needs across all its facilities in a cost-effective way.

By leveraging a unified view and a platform supported by a robust ecosystem of technology partners who are leveraging the IoT device video and environmental data to solve new problems, smart spaces can help facilities managers achieve increased levels of operational efficiency, cost savings, occupant comfort, security, and productivity.

What is a smart space?

Smart spaces are physical spaces equipped with cloud-managed [cameras](#) and [environmental sensors](#). These devices provide facilities managers with intelligence about the conditions of these spaces and how they are being used.

Some devices and cloud platforms have analytics capabilities, which provide facilities managers with deeper insights and more detailed intelligence to aid in decision making.

With smart spaces, facilities managers can help their organizations:

- Optimize energy use
- Enhance employee productivity
- Streamline workflows
- Boost workplace safety and employee well-being
- Manage congested areas in facilities
- Maximize space utilization through better space planning
- Detect leaks and other environmental anomalies before critical damage occurs
- Maintain critical asset uptime
- Simplify maintenance routines





Improve employee comfort and well-being

In recent years, organizations have been defining new ways of working. An office is no longer just a place to work: it has to offer an experience that attracts and retains a talented workforce. Designing and planning smart spaces can help facilities managers transform and optimize their facilities for this new paradigm.

With smart spaces, facilities managers can use video and image analytics to improve tenant safety and analyze occupancy movement patterns, and correlate this information with data from occupancy sensors to improve space utilization.

Furthermore, smart spaces can link remote workers, conference rooms, and scheduling systems with other sensors deployed throughout a building. “Hot-desking,” an important new concept where workspaces such as desks and work booths are assigned to employees based on schedule, is made much simpler with smart space technology.

Mobile apps can register employee preferences for light and temperature and suggest different desks throughout your facilities, adjust environmental preferences automatically, help employees find parking spaces or locate colleagues, and report issues to the facilities team in real time.

Gain momentum on sustainability goals by optimizing energy use

In 2022, commercial and industrial buildings consumed **just over half** (50.7%) of all energy in the U.S. Globally, building operations are **responsible for 27%** of annual greenhouse gas emissions. Thus, organizations have a major role in meeting sustainability goals—and smart spaces can help facilities managers do so.

Reducing energy waste is a key opportunity in meeting sustainability goals. This might look like using temperature and humidity sensors to automate and optimize cooling infrastructure in facilities. Or, receiving alerts if critical doors to cold storage rooms are not closed properly. Alternatively, an organization might implement occupancy-

driven automation, which can be programmed to heat or cool a room in advance of a meeting and shut off if no one turns up after a specified window of time.

Sustainability metrics extend beyond energy use, too. For example, you might be notified of a malfunctioning fridge or freezer, so you could take action before all the temperature-sensitive products or food inside spoils.

In any scenario, smart spaces provide visibility and control at a granular level to manage, reduce, or optimize energy use across all your organization's facilities.



Create a safe work environment

Smart spaces are capable of monitoring foot traffic throughout a building, which helps facilities managers enforce access to sensitive areas. For example, a manufacturing plant may have a piece of equipment that requires two people to operate at any time. With the analytics and automatic notifications provided by smart cameras, a facilities manager can determine if this machine is being operated safely.

Indoor air quality sensors can also notify facilities managers of the presence of harmful airborne particulates, excessive noise, or volatile organic compounds (VOCs).

Finally, smart spaces can be configured to detect the presence of required personal protective equipment (PPE) in a variety of settings, from healthcare to manufacturing and more. This not only helps facilities managers enforce safety standards, but meet compliance requirements as well.



Increase sales and efficiency by understanding foot traffic

A basic surveillance system might provide a rough indication of where people move in a retail space, but a smart space can provide detailed [foot traffic analytics](#) that reveal journey pathing and customer dwell time.

With this insight, facilities managers can help their peers in merchandising or marketing understand where customers spend time in their stores and use this information to

improve sales. Since doubling customer dwell time can [increase sales by 30%](#), traffic analytics can be used to build better floorplans or product displays that positively impact revenue.

This same information can also be used in manufacturing or warehouse applications to identify bottlenecks in processes and make changes to streamline operations.



Smart spaces point the way forward

Facilities managers will always have to balance pragmatism and vision, and smart spaces help achieve that balance.

Individual components of a smart space—security cameras, environmental sensors, and so on—help facilities managers address pragmatic concerns such as securing facilities in a cost-effective manner. But it is the sum of the whole that helps facilities managers address more strategic goals such as organizational effectiveness, productivity, and employee engagement. Ultimately,

implementing smart spaces can help facilities managers drive business value for their organizations.

Meraki offers a full range of [cameras](#) and [sensors](#) that are simple to install, configure, and integrate into smart space networks. With environmental and remote monitoring, smart connectivity, built-in cybersecurity, real-time alerts, and a unified dashboard, facilities managers can better solve the challenges they face today, and prepare for the unexpected tomorrow.





Create smarter, safer spaces and fast-track digital agility in a cloud-first world. Learn how Meraki is helping facilities managers bring together IoT, networking, and analytics.

LEARN MORE HERE

CUSTOMER APPLICATION

Meraki smart spaces: Bossa Nova

Robotics manufacturer [Bossa Nova](#) uses artificial intelligence (AI) and advanced robotics technology to help retailers accurately manage inventory. However, with valuable equipment in its manufacturing labs, Bossa Nova lacked a reliable method to monitor environmental conditions, including temperature and humidity changes and water leaks. This put their assets and business operations at risk. And, with most of their IT staff working from home, Bossa Nova needed a way to remotely monitor those environmental conditions. Furthermore, the solution needed to be cost-effective, easy to deploy, and quickly integrated into existing IT infrastructure.

Bossa Nova was already a full-stack Meraki customer with switching, wireless LAN, and security solutions. They opted to add two types of cloud-managed sensors to the existing deployment: a temperature and humidity sensor and water leak detection sensor. These sensors, along with existing Meraki solutions, could all be managed from a single dashboard.

Within the first few months of deploying the Meraki MT sensors, Bossa Nova was able to avoid heat-induced hardware failures on at least two occasions. These events alone would have cost more than \$30,000 in hardware replacement, not to mention further losses from halted operations and lost productivity.



CUSTOMER APPLICATION

Meraki smart spaces: Visionworks

Healthcare retailer [Visionworks](#), a Meraki customer, wanted to streamline business operations, reduce costs, and enhance its customer experience. During the early days of the COVID-19 pandemic, Visionworks accelerated the implementation of key technology initiatives to meet customer demand with minimal disruption. The video surveillance in use at the time was outdated, provided poor video resolution, and required an on-site technician for configuration and maintenance. With 740 locations in 40 states to manage, Visionworks turned to Meraki for help and installed Meraki MV cameras.

Now that Visionworks can leverage remote management capabilities across all of the company's sites, they have improved in-store visibility and security while dramatically streamlining day-to-day maintenance and operations. Additionally, Visionworks has explored additional beneficial use cases for its smart space technology. For example, the Visionworks marketing team is using their MV cameras to quickly and remotely examine in-store signage and collateral and evaluate if messaging needs to be refreshed to support new campaigns.

Visionworks®



option 1

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Visionworks®

option 2