



The Facility Manager's Guide to IoT in Meeting Spaces

AVI  SPL®

An AVI-SPL White Paper

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Executive Summary

Facility managers are taking on more responsibilities as conference rooms, boardrooms, classrooms, and other meeting spaces gain “smart” capabilities made possible by the Internet of Things (IoT). As smart meeting rooms gain traction in the enterprise, facility managers will need to understand how to incorporate the technologies and capabilities into their organizations.

The paper summarizes the opportunities IoT brings to meeting rooms and discusses deployment considerations managers should keep in mind when pursuing IoT solutions for meeting room systems.

Key Takeaways

- Benefit of industry experience. IoT is not new to the AV industry. AV systems integration firms are experts in the integration of complex solutions, including both AV and energy management systems.
- Benefits for four use cases. Typical applications benefiting from IoT include 1) reserving and scheduling rooms; 2) monitoring and analyzing device and room usage; 3) managing energy consumption; and 4) monitoring equipment status for preventive maintenance and support.
- Strategic benefits. Adding IoT capabilities to meeting rooms will transform asset management, inform space planning, and guide facility renovations and real estate investments.



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In a meeting room context, IoT refers to the use of hardware and software to connect AV devices and room technologies so companies can control, monitor, and manage room systems to meet their strategic business objectives.



Facility managers are taking on more roles and more challenging responsibilities as the building systems they oversee gain “smart” capabilities made possible by the Internet of Things (IoT).

Corporate boardrooms, conference rooms and classrooms, for example, are now becoming “responsive” spaces that function dynamically, as systems, to provision AV services and climate conditions in accordance with employee and business needs. As IoT and smart rooms gain traction in the enterprise, facility managers will need to understand how to incorporate these capabilities and features into their organizations.

IoT can be intimidating but it need not be. In fact, network-connected equipment controls have been part of AV and meeting rooms for years. The difference today? The technologies can be employed comprehensively and dynamically, so facility managers can make sure the systems support company business objectives. This paper summarizes the opportunities IoT brings to meeting rooms, as well as the deployment considerations managers should keep in mind when pursuing IoT solutions for meeting room systems.

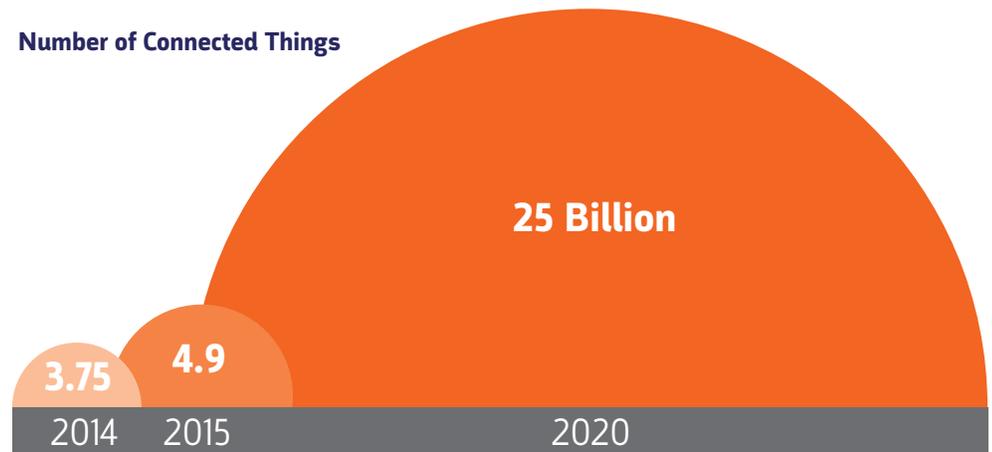
What Is IoT and How Will It Impact Meeting Room Technologies?

IoT is a broad concept that can be explained generally and for application in specific industries.

For a general definition, the Internet Society describes IoT as “scenarios where network connectivity and computing capability extend to objects, sensors and everyday items not normally considered computers, allowing these devices to generate, exchange and consume data with minimal human intervention.”¹ Gartner characterizes IoT as a vast ecosystem of “things, communication, applications and data analysis” that will have immense transformative impact on business and society.²

In a meeting room context, IoT refers to the use of hardware and software to connect AV devices and room technologies so companies can remotely control, monitor, and manage room systems to meet their strategic business objectives. Key use cases include 1) reserving and scheduling rooms; 2) monitoring and analyzing device and room usage; 3) managing energy consumption; and 4) monitoring equipment status for preventive maintenance and support. These capabilities enable facility managers

Number of Connected Things



Source: Gartner, 2014

to create operational conveniences, optimize use of technology resources and make informed, data-driven decisions about workplace design and energy consumption.

IoT components used for meeting rooms include AV devices; communications and networking technologies; asset- and energy-management software tools; and platforms that integrate technologies, provide back-end infrastructure and data analytics. For this paper, IoT does not extend to unified communications and collaboration (UCC) technologies, which are managed by IT departments.

From a meeting room perspective, IoT is simply a new theme corporations can use when advancing their room monitoring and control technologies to support their business strategies.

Why Does IoT Matter to Facilities?

IoT will bring connectivity and intelligence to thousands of devices in a facility. It will “breathe life into many new operations and bring forth opportunities that extend beyond our wildest productivity dreams” and help transition the facility management industry “from its technical paradigm towards new strategic approaches.”³

For example, facility managers will be able to understand where employees are meeting, who’s attending each meeting and which devices they are using, and how energy is consumed and managed in the meeting space. Previously, most managers had no understanding of these conditions. If they did have utilization metrics, managers gathered the data manually by walking from room to room, clipboard in hand, to count room attendees. Now, however, with the benefits of IoT and space utilization software, managers can understand room conditions in real time.

The capabilities will transform meeting room asset management and inform space planning, facility renovations, and real estate investments. Managers will be able to make strategic facility and budget decisions with confidence based on big data and analytics. IoT will also make it possible to automate maintenance monitoring to maximize equipment uptime and worker productivity.

Is IoT Hype or Reality? Answer: It’s Both

There is tremendous hype surrounding IoT, but it is very real. In fact, IoT has been used in the AV industry for years to facilitate monitoring and control, although initial systems did not have the two-way data communications or data analytics capabilities that can be employed today to provide business intelligence or diagnose and resolve problems.

An early example dates back to the late 1990s when companies began putting AV control systems on the internet. The first applications tracked the operational status of projector lamps, eliminating the need for staff to physically check lamps in each room. Since then, monitoring tools have added asset management software, and today systems can reveal if a projector is on or off, transmit email alerts if equipment needs maintenance or schedule end-of-day shutdown or provide remote help desk assistance.

Scheduling panels installed outside rooms, introduced nearly a decade ago, were another early application. Initially, scheduling panels enabled personnel to view the room’s availability and reserve it. Today, scheduling panels can be accessed remotely via online and mobile apps that often integrate the scheduling software with Microsoft Outlook or other business tools.

From a meeting room perspective, IoT is simply a new theme corporations can use when advancing their room monitoring and control technologies to support their business strategies. IoT gives facility managers a new way to conceptualize meeting rooms and apply technologies to improve building performance, reduce operating costs, measure and forecast space utilization, and improve worker productivity.



Use Case #1: Room Reservations and Scheduling

Room reservations and scheduling are the most popular IoT applications for meeting spaces, providing benefits to both facility managers and employees.

Facility managers can use scheduling panels and applications to manage space better. Crestron Fusion RV (RoomView®) software, for example, gives managers the capability to see which rooms are booked or in use and which devices employees are using in those spaces. Workers can use mobile calendar and scheduling applications to view the status of meeting spaces, book rooms and invite attendees. The tools automatically prevent double-booking of rooms. Scheduling tools can also automatically allocate the best room for a meeting based on the type of meeting or the workers' locations.

Facility managers can also use enterprise management solutions to provision AV equipment, lights, thermostats, and other climate control technologies so each room is ready and comfortable for each scheduled meeting. AV devices, aware of each attendee and the devices they are using, can automatically connect each user for presentations. If a meeting is cancelled or no one shows up for a meeting, the software can automatically release the room so others can book it.



Use Case #2: Monitoring and Analyzing the Use of Devices and Rooms

Monitoring technologies and data analytics are giving facility managers comprehensive insights into device and room usage trends.

A key application is ensuring that AV devices perform properly so meetings start on time. Usage data can also reveal which devices workers prefer and which tools they don't use. For example, if monitoring software reveals that rooms with videoconferencing tools and interactive displays are booked all the time while rooms that have only conference phones are usually vacant, the company can use the insights to inform and guide its new technology deployments.

Companies that employ solutions like the Crestron Fusion RV for device and room monitoring are realizing that usage data can make a substantial difference in space planning. For companies that have just few meeting rooms, usage data plays a vital role in maximizing use of limited space. For companies with thousands of meeting rooms at globally dispersed facilities, the data can guide real estate and technology investments.



Use Case #3: Energy Management for AV and Meeting Room Systems

Managing energy consumption is increasingly important as companies strive to reduce business costs and create sustainable business practices.

Many companies are deciding that highly energy-efficient AV systems aren't simply "nice-to-have" features for their deployments but "must have" requirements. Some companies are setting energy consumption limits and writing "watts budgets" into the specifications for their AV systems.⁴

Adding IoT capabilities to meeting rooms can help companies qualify for LEED certification. Solutions like the Crestron Fusion EM™, the energy management component of Crestron Fusion, enable companies to monitor, measure, manage, and control lighting, HVAC systems, and energy usage in every room and area. Energy management solutions can adjust window shades to optimize use of natural lighting. They can also integrate with business software and calendar tools to automate room climate settings based on the reservation schedule or the number of people coming to a meeting.⁵

The recognition a company gains from room energy management can help the organization reinforce its identity as a “green” business. Companies can tout this designation when recruiting employees from the value-minded millennial generation.

Adding BACnet Support to AV Control Platforms

While the internet is bringing connectivity to AV equipment, energy management systems are often controlled by BACnet, a communications protocol for building automation.

Leading AV and energy management solution providers, such as Crestron, are now building BACnet support into control platforms so facility managers and end users can communicate with heating, cooling, lighting and AV equipment via a single user interface. A unified dashboard helps facility managers do their jobs more efficiently and achieve their energy savings objectives. Meeting participants like integrated controls because they can use an iPhone, for example, to stream content to a room display or control the room lights.



Use Case #4: Monitoring for Preventive Maintenance and Help Desk Support

The intelligence that IoT brings to room systems can be used to ensure devices and room systems are always available and performing properly. For example, when AV device and energy management control systems can be controlled from a single dashboard, facility managers can quickly see the operational and availability status of all systems.

IoT improves maintenance services because management software can provide a centralized technical documentation repository for each device. The software can track help requests and identify opportunities to proactively service devices to maximize uptime.

Help desk support is also more effective. The Crestron Fusion Enterprise Management platform, for example, enables technicians to view equipment online while it’s in use, provide real-time remote technical support via instant messaging or webcams, and often service the equipment remotely. For companies that want to keep their internal staff free to focus on other core operations, AV managed services providers can supply expert teams and monitoring services to ensure devices and room systems are always online and available.

How to Get Started on an IoT Deployment

IoT is complex and no two deployments are alike. By working with a systems integrator that specializes in AV and room systems, facility managers can obtain custom solutions that meet their specific needs.

To get started, identify the main capabilities you want to achieve with an IoT solution. Ask these types of questions:

What are the company's key business drivers for IoT?
What device and space monitoring capabilities do I need?
What methods and tools should employees have for scheduling and cancelling room reservations?
What information or data is needed to inform the company's 5-year space plan?
Does facility management need improvement?
What monitoring or performance issues must be solved?
How can the company improve technical/help desk services?
Should the control infrastructure integrate AV, room, and facility management capabilities?
Should the controls adjust equipment performance immediately in response to changing room conditions?
How can the company use real-time analytics to improve equipment performance and reliability?

To increase your chances of a successful implementation, deploy a scalable, end-to-end solution. Select a set of core technologies to deploy on the network and standardize on those technologies for all rooms. Standardized devices will be able to talk the same language, share capabilities and provide a consistent user interface and user experience. Standardization also makes it possible for managers to view the status of every device in every room across the enterprise and collect comprehensive data analytics.

Make sure your system is secure and minimizes security risks. Depending on the size of your company, it's possible that hundreds or thousands of IoT-enabled devices could be added to the company's network. Yet as the McKinsey Global Institute has warned, "Every sensor is a potential entry point for hackers and the consequences of a breach can be enormous."⁶ Be smart about security and make sure your solution provider designs appropriate security protections into your system.

Don't Do This Alone: Work with an AV Firm to Ensure the Best Approach and Solution

IoT solutions for meeting rooms are usually complex solutions that integrate a variety of devices and technologies and include back-end infrastructure and data analytics. Few corporations have the expertise to do this alone and most will need to find a partner that is skilled in this work.

Fortunately, AV systems integration firms are experts in the integration of complex solutions—including both AV and energy management systems. Facility managers should feel confident partnering with a qualified AV firm to identify their companies' specific needs and craft business-specific IoT solutions that will fulfill their meeting room technology and service needs.

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About AVI-SPL

AVI-SPL is the world's leading AV and collaboration solutions partner. AVI-SPL designs, builds, and supports the systems and environments that enable communication and collaboration. With highly trained and certified system engineers throughout 34 offices across North America, in the UK and UAE, plus an international network of solution providers in more than 30 countries, we've built the infrastructure and partnerships to help any business realize and meet its collaboration goals.

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About Crestron

For 40 years Crestron has been the world's leading manufacturer of advanced control and automation systems, innovating technology to simplify and enhance modern lifestyles and businesses. Offering integrated solutions to control audio, video, computer, and environmental systems, Crestron streamlines technology, improving the quality of life in commercial buildings, universities, hotels, hospitals and homes. In addition to its World Headquarters in Rockleigh, New Jersey, Crestron has sales and support offices throughout the U.S., Canada, Europe, Middle East, Asia, Latin America and Australia.

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