INC INSTALLS™
an INFINITE company



WHITE PAPER

PLANNING INFRASTRUCTURE FOR THE CONVERGED COMMERCIAL ENVIRONMENT

How to coordinate IT, AV, security and building systems across a shared physical infrastructure.

IT & DATA | AV & SIGNAGE | SECURITY & ACCESS | BUILDING SYSTEMS



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INTRODUCTION

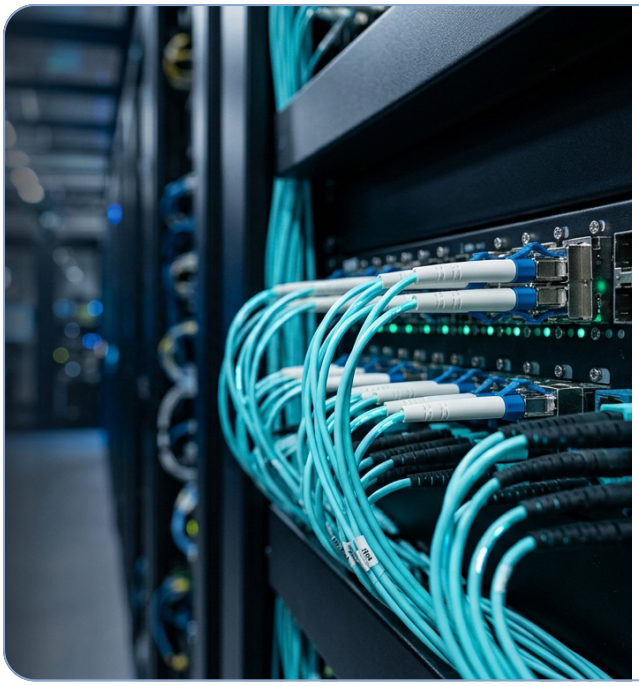
THE PHYSICAL LAYER IS NOW A SHARED FOUNDATION

In the past, commercial buildings were easily divided into technology categories. IT handled data networks. AV managed conference rooms and displays. Security teams covered cameras and access control. Facilities teams oversaw building systems. Each group had its own vendors, budgets, priorities, and installation schedules.

But today, commercial environments must operate with much more convergence across systems. IP cameras stream across the network. Access control systems connect through switches. Digital signage may add meaningful bandwidth demand, especially when high-resolution or frequently updated content is distributed across multiple locations. Building automation systems depend on networked sensors, controls, and monitoring tools. Even small and mid-sized organizations are adding more connected devices across more locations, often without dedicated technical staff at every site.

As a result, the physical technology layer has become a shared foundation for multiple systems. Racks, cabinets, pathways, patch panels, cabling, power delivery, labeling, device placement, and installation practices now affect far more than the IT closet. They influence security performance, AV quality, future expansion, serviceability, uptime, and project cost.

These systems may share racks, pathways, cabling, switches, power, and equipment rooms, even when traffic is logically segmented for security, performance, or management. **Infrastructure can no longer be treated as a collection of independent projects. It must be designed, procured, and installed as a coordinated system.**



IN THIS WHITE PAPER

ONE COORDINATED SYSTEM

Cabling capacity →
Power delivery →
Rack space →
Multi-vendor risk →
Ownership →
Planning framework →

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01 — THE SHIFT

WHY TRADITIONAL TECHNOLOGY SILOS ARE BREAKING DOWN

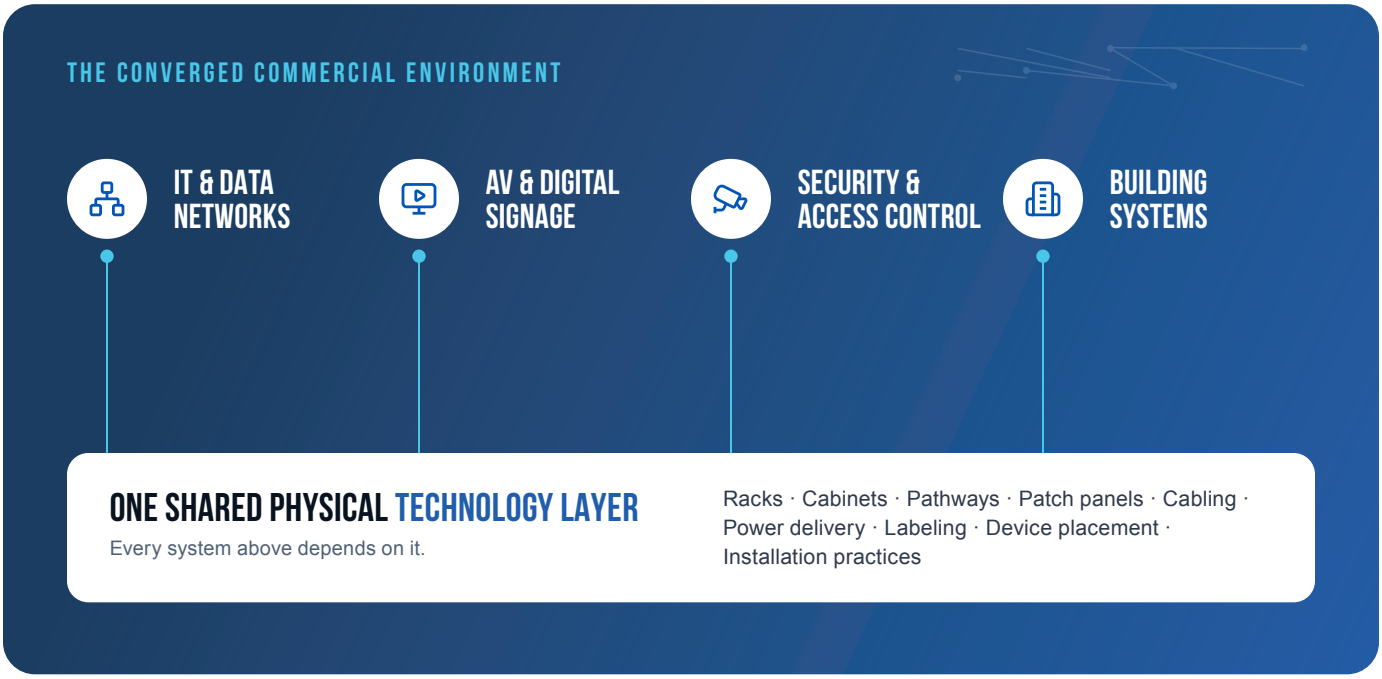
WHAT MIGHT APPEAR TO BE A PROCUREMENT ISSUE AT THE START OF A PROJECT BECOMES AN OPERATIONAL ISSUE.

When commercial systems were more independent, departmental silos were logical. A business could add a conference room display without thinking too deeply about the security system. A camera project could proceed separately from the data network. The systems shared fewer dependencies, so the risk of overlap was manageable.

The same equipment room may now support network switches, fiber and copper cabling, AV-over-IP endpoints, IP cameras, access control panels, wireless access points, digital signage players, environmental sensors, and building controls. The same structured cabling pathways may carry traffic for office data, video, security, and operational systems. The same rack may need to support devices from several vendors with different space, power, airflow, and service-access requirements.

Like any connected ecosystem, a decision made for one system can affect several others. A camera deployment may increase switch-port and PoE requirements. A digital signage rollout may add bandwidth demands and require new display locations. A building automation project may introduce devices that need reliable connectivity in locations that were not originally planned for network access.

Designing these systems independently can lead to conflicting specifications, duplicated infrastructure, undersized pathways, poor rack organization, unclear ownership, and late-stage rework. What might appear to be a procurement issue at the start of a project becomes an operational issue once multiple systems need to perform reliably on the same physical foundation.



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02 — REQUIREMENTS

CONVERGENCE CHANGES INFRASTRUCTURE REQUIREMENTS

Converged commercial environments place new demands on these three areas:

01 CABLING CAPACITY

Structured cabling goes beyond desktops and wireless access points. It may also support IP cameras, access control readers, signage displays, AV endpoints, sensors, and future devices that have not yet been specified. Cable planning must account for density, pathways, patching, labeling, service loops, cable management, and future moves or additions.

For multi-site organizations, consistency matters. If each location uses different cabling practices, labeling conventions, patching layouts, or component types, troubleshooting becomes harder and expansion becomes slower. Standardized infrastructure gives IT and facilities teams a repeatable foundation across branches, clinics, offices, storefronts, or regional locations.

02 POWER DELIVERY

The ability to deliver power over Ethernet makes installation more flexible, but it also increases planning complexity. Cameras, wireless access points, VoIP phones, access control devices, certain sensors, and some AV endpoints may depend on PoE or PoE-capable switching. If designers don't consider power requirements early on, teams can run into switch-capacity limits, budget issues, rack-space problems, or heat concerns.

Power planning must become part of the initial infrastructure design. Teams should evaluate how many powered devices will be installed, where they will be located, what switch capacity is required, how much rack space is needed, and whether the equipment room can support the resulting power and thermal load.

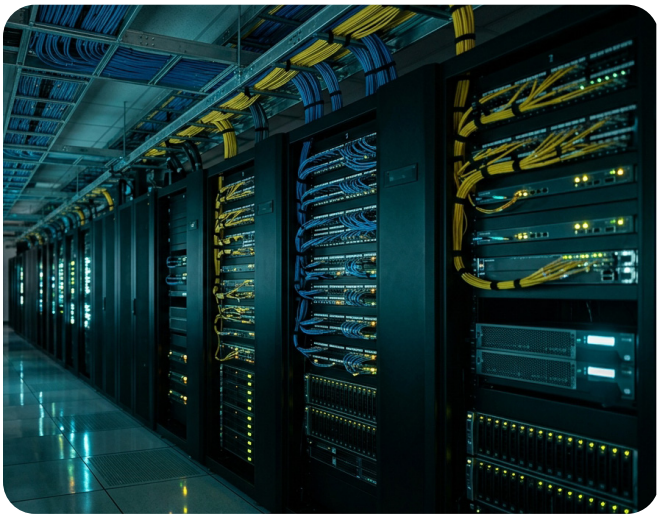
03 RACK AND EQUIPMENT SPACE

Rack or cabinet layout affects installation speed, serviceability, airflow, patching discipline, and long-term maintainability. Equipment rooms and network closets cannot be treated as afterthoughts.

Even if a business knows which routers, switches, servers, or security appliances it plans to use, it still must determine how to house, organize, cable, and install that equipment. That includes rack size, cabinet type, mounting depth, airflow, cable management, patch panels, power distribution, security, labeling, and future expansion space.

Rack and cabinet planning must also balance security and access. Lockable enclosures, removable panels, asset tagging, room-level access control, adequate technician clearance, and cable-management accessories improve both protection and serviceability.

These decisions can be even more important when infrastructure is built from the ground up. Getting the layout right early reduces the likelihood of expensive changes after walls are closed, equipment is delivered, or vendors arrive onsite.



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03 — PROJECT RISK

THE MULTI-VENDOR RISK

Many commercial technology projects involve multiple vendors, and the spaces between them create risk. One team may specify cameras. Another may provide AV equipment. A separate provider may handle network hardware. A facilities contractor may manage building systems. A cabling provider may be brought in late to connect everything. Each vendor may perform well within its own scope, but gaps often arise between them.

Even when each vendor performs its scope correctly, undocumented assumptions between scopes can create project risk. One vendor may assume another is providing cabling. Another may assume rack space is available. A device supplier may specify equipment without confirming pathway capacity, cable distance, PoE budget, or mounting conditions. A site may end up with redundant materials, missing adapters, inconsistent labels, or a layout that makes service difficult. And because each vendor is only responsible for its part of the job, who solves problems that emerge in the gaps between?

This is especially challenging for mid-sized businesses with multiple locations. For example, a regional IT director overseeing several offices, clinics, branches, or stores may not have local IT staff at each site. Facilities teams may understand the building but not the network requirements. Procurement may be able to source parts but not know which substitutions affect performance or installation. The result is a project that depends on coordination, even when no single party clearly owns coordination.

It boils down to operational readiness. A delayed rack, missing cable type, unclear installation scope, or incompatible layout can postpone opening a location, disrupt employees, create security gaps, or require costly onsite rework.



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04 — OWNERSHIP

WHO SHOULD OWN THE PHYSICAL TECHNOLOGY LAYER?

In most organizations, IT leads the physical technology layer. IT understands the network architecture, device requirements, software dependencies, security policies, cloud connectivity, and future scaling needs. Procurement and facilities should support the process, but the infrastructure should not be designed in isolation from the systems it must enable.

Not every organization has a full internal IT team. Many have a single regional IT manager, a small, centralized team, or a facilities manager responsible for coordinating local buildouts. In those cases, ownership may need to be shared internally and supported by an external infrastructure partner.

Regardless of team composition, it's essential that someone owns the complete physical layer from planning and product selection through procurement, kitting, delivery coordination, installation, documentation and future support. Without that ownership, each project becomes a series of handoffs, and every handoff introduces the possibility of missed requirements.

> **EVERY HANDOFF INTRODUCES THE POSSIBILITY OF MISSED REQUIREMENTS.**

SIDEBAR

DETERMINING PHYSICAL TECHNOLOGY LAYER OWNERSHIP

How to create shared input without fragmented responsibility.

IT

IT defines the technology requirements.

- What systems need to connect?
- What bandwidth, security, power, and cloud requirements apply?

FACILITIES

Facilities define the space constraints.

- What rooms, pathways, mounting locations, power availability, and building conditions affect the installation?

PROCUREMENT

Procurement supports consistency and cost control.

- What vendors, part numbers, delivery windows, and purchasing processes need to be standardized?

INFRASTRUCTURE PARTNER

A qualified infrastructure partner coordinates execution.

- What products are needed, how should they be configured, and who will install them correctly?

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05 — SCENARIOS

COMMON CONVERGED COMMERCIAL ENVIRONMENT SCENARIOS

Converged infrastructure projects usually fall into two broad categories: new or expanding locations, and existing sites with legacy infrastructure.

SCENARIO 01

NEW OR EXPANDING LOCATIONS

Before equipment is ordered, teams can map device locations, cabling routes, rack requirements, power needs, network closets, security endpoints, signage locations, and future expansion zones.

For example, a growing organization may be opening multiple locations in different regions. The centralized IT team knows the desired network architecture and approved hardware platforms, but they still need help translating those requirements into a site-ready infrastructure package. That includes racks and cabinets, cabling, connectors, patching, labeling, installation labor, and a repeatable deployment process.

If each new location is built around the same infrastructure approach, IT teams can reduce troubleshooting time, simplify documentation, improve service consistency, and avoid reinventing the buildout for every site.

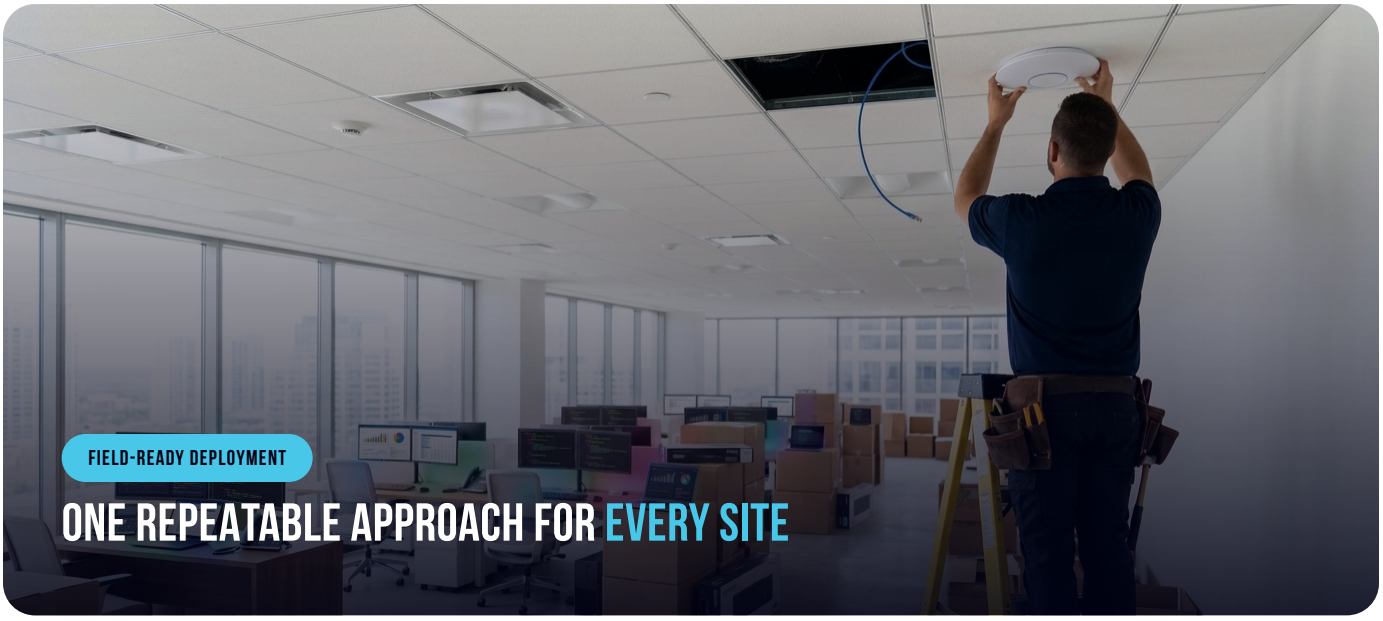
SCENARIO 02

EXISTING SITES AND LEGACY UPGRADES

From older racks and inconsistent cabling to limited pathway capacity, poor labeling, or undersized closets, existing locations often have many issues that pile up over years of working with various vendors. Upgrading sites that need to keep operations running while improving the physical layer adds another challenge.

In these environments, the first step is assessing what is already installed, what can be reused, what needs to be replaced and where the bottlenecks are.

A coordinated partner can help turn that assessment into an actionable bill of materials, installation plan, and sequencing strategy that reduces disruption.



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06 — PLANNING CHECKLIST

A PRACTICAL FRAMEWORK FOR COORDINATED INFRASTRUCTURE PLANNING

Before starting a converged infrastructure project, teams should discuss these practical issues:

#	QUESTION TO DISCUSS	WHAT TO DEFINE
01	**What systems will share the infrastructure?**	Identify every system that depends on the physical network: IT, Wi-Fi, VoIP, AV, cameras, access control, signage, sensors, building controls, and future planned devices.
02	**What are the total device counts and locations?**	Map the endpoints before specifying cabling or rack space. A floor plan should show cameras, displays, workstations, access points, access control devices, conference rooms, and equipment closets.
03	**What are the power requirements?**	Do not wait until installation to discover that the closet cannot support the powered device load. Before installation, calculate PoE needs, switch capacity, rack power, UPS requirements, and thermal impact.
04	**What rack and cabinet capacity is needed?**	Teams must plan for current equipment and realistic growth. This includes patching, cable management, power distribution, airflow, security, mounting depth, and service access.
05	**What cabling and connectivity standards should be used?**	Make sure to standardize cable categories, fiber requirements, patching conventions, connector types, labeling methods, color coding, and documentation.
06	**What needs to be consistent across all sites?**	Consistency reduces the support burden and makes expansion easier. Multi-site organizations should define repeatable infrastructure packages wherever possible.
07	**Who is responsible for each stage?**	Clarify ownership for design input, product selection, procurement, delivery, installation, testing, documentation, and ongoing service.

TIP

Teams should also maintain network diagrams, rack elevations, labeling standards, and as-built documentation so future installations and maintenance do not depend on institutional memory alone.

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07 — THE COORDINATED APPROACH

CONVERGENCE AND COORDINATION: BRINGING COMMERCIAL SYSTEMS TOGETHER

A converged infrastructure project goes beyond individual components. It requires coordination between the physical space, the products that populate that space, and the installation process that brings the design into operation.

Together, three brands support a coordinated infrastructure approach for mid-sized and multi-site organizations that need standardization, efficient procurement, and reliable installation execution:

LAYER 03

INSTALLATION & EXECUTION

INC Installs supports the installation and project execution layer, helping customers plan, deploy, and complete the installation.

inc-installs.com →

LAYER 02

CABLING & CONNECTIVITY

ShowMeCables supports the cabling, connectors, and wiring components needed to connect devices and organize the network.

showmecables.com →

LAYER 01

RACKS & ENCLOSURES

NavePoint supports the rack, cabinet, and enclosure layer that forms the physical foundation of the network room or equipment space.

navepoint.com →

The value of the coordinated infrastructure layer is helping ensure core technologies such as routers, switches, servers, cameras, signage players, or application-specific devices have the physical foundation required to operate properly. That can include space planning, product recommendations, bundling and kitting, installation planning, onsite deployment, and ongoing service support. For organizations without dedicated technical staff at each location, coordinating an infrastructure approach can reduce the burden on internal teams and help keep projects on schedule.

In multi-site retail, financial services, and branch environments, coordinated infrastructure planning can include pre-wire documentation, custom kits, contractor coordination, cable testing, standardized labeling, and repeatable installation practices that simplify deployment and ongoing support.

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08 — CONCLUSION

PLAN INFRASTRUCTURE AS ONE SYSTEM

IT, AV, security, digital signage, and building automation may serve different departments, but they increasingly depend on the same physical and network foundation.

When that foundation is planned in silos, businesses risk capacity shortfalls, conflicting specifications, installation delays, unclear accountability, and avoidable rework. When it is planned as one system, teams can improve consistency, simplify procurement, reduce onsite surprises, and create infrastructure that supports both current needs and future growth.

By establishing clear ownership, coordinating early, and standardizing where possible, IT directors, network managers, and facilities leaders can build a path forward with partners who understand how racks, cabinets, cabling, connectors, and installation practices come together in real commercial environments.

> **IN A CONVERGED BUILDING, INFRASTRUCTURE IS THE FOUNDATION THAT ALLOWS EVERY CONNECTED SYSTEM TO PERFORM.**

PROOF POINTS FROM REAL DEPLOYMENTS

12,000+

LOCATIONS · MULTI-SITE FINANCIAL SERVICES

In multi-site financial services, INC visited over 12,000 locations and usually completed installation within one day.

10

CAMERAS INSTALLED & WIRED IN TWO DAYS

In an existing warehouse security upgrade, INC installed and wired 10 perimeter cameras in two days, including cable runs from the IT closet, IP camera installation, NVR installation, system testing, and supporting connectivity materials.

2M

FEET OF LOW VOLTAGE CABLE · 750+ STORES

A mall retailer with over 750 stores in the US & Canada turned to INC to manage the installation of 2 million feet (about 609.6 km) of low voltage cable and POS connectivity for new stores, relocations and service work.

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CONVERGED INFRASTRUCTURE, COORDINATED

PLAN INFRASTRUCTURE AS ONE SYSTEM.

When it is planned as one system, teams can improve consistency, simplify procurement, reduce onsite surprises, and create infrastructure that supports both current needs and future growth.

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