

Five Tips for Planning and Designing an Ideal Telecom Room

As the central infrastructure that enables network connections and distributed cabling in commercial buildings, the telecommunications room (TR) must be planned and designed thoughtfully to support future network growth and new technology advancements.

In an effort to help the IT professionals in charge of this process get started, Chatsworth Products (CPI) has translated its 30 years of experience helping customers power and protect their technology investments into five useful tips for planning and designing a successful TR.



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1. Define the Main Purpose

Whether you want a bright and spacious TR that enables quick and organized moves, adds and changes (MACs), or a high-tech room that aims to occupy as much or as little physical footprint as possible to maximize utilization, it's important to zero in on the main purpose and use of the TR.

Consider:

Will you be doing a lot of work in your TR?

Go with a bright white room and white finish for your racks and cabinets, cable managers and cable pathway. White is highly reflective and helps brighten narrow equipment rows, provides better visibility and allows for less lighting to reduce energy costs. It's also widely known for being timeless and "always in style."

Will the TR be used as a showcase to demonstrate your company's values and aesthetics when it comes to technologies and equipment?

Quality, fit and function don't need to be compromised by a beautifully designed TR. Working with vendors that commit to addressing both the technical and aesthetic requirements of the room can help ensure that the more you choose to personalize your TR with custom colors and uniquely designed infrastructure, the more your customers will understand your company's core technology values.

2. Select Your Racking Style

Depending on your room design and equipment requirements, there are multiple methods of supporting and protecting your cabling infrastructure and technology equipment.

Consider:

How much floor and ceiling space is needed in order to easily move around your systems and maintain proper clearances?

Select two-post racks for a cost-effective and efficient use of floor space. Open four-post racks are superior when supporting larger equipment such as modular network switches. If floor space isn't a concern, data center cabinets combine structural support, security and airflow management benefits for an even more robust solution.

Who will have access to the room?

If people other than IT personnel will have access to the room, select data center cabinets with perforated, locking doors. If your company deals with private data such as finance, health care and the like, consider an RFID electronic lock solution that allows you to keep a record of every cabinet access attempt and tamper. Remember, cabinets take up more floor space than a standard, open two-post rack.

How can you be future-ready?

As you need to refresh or upgrade technologies, the equipment footprint, power capacity and weight of your equipment will likely increase. Consider equipment cabinets that provide high load ratings and are easily configurable with power and airflow management accessories to support higher densities. Remember to allocate proper sizing of cable pathways to allow for future growth.



3. Select Rack-Level Power Distribution

Rack-mount power distribution units (PDUs) are a well-established solution for distributing power into equipment racks. In a remote working reality, intelligent PDUs with monitoring and switching capabilities have become essential.

Consider:

What type of equipment will you be deploying?

Advanced, power-hungry equipment requires robust PDU functionalities that allow monitoring and control of power down to the outlet level, helping IT professionals maximize efficiency. PDUs can be used in high-density cabinets full of 1U or 2U rack servers, or a few server chassis or networking switches.

How will you manage ongoing capacity planning and energy usage?

Intelligent PDUs help prevent equipment failures and empower IT professionals to properly prepare for maintenance operations without disturbing the system's uptime. By monitoring the equipment's power draw, it's possible to quickly identify ghost servers and identify and schedule equipment for decommissioning for additional workloads and consolidation.



4. Select Cable Management and Pathways

Selecting cable management can be overwhelming. With so many styles, sizes and price points available, it's important to know that you can make informed decisions by understanding your cabling infrastructure.

Consider:

Will there be ongoing and necessary cabling, cable management and patching?

Select open frames for easy access to equipment, and cable managers and pathway with optimized design to help you remain compliant with industry best practices. Advanced cable management solutions include several intuitive features that facilitate cable segregation while allowing for maximum space utilization.

What type of cabling will you be deploying?

Whether you'll be installing copper or fiber cables, be sure to identify the recommended and maximum cable fill values of the cable management and pathway products you use. Consider future growth when sizing the overhead pathways. Undersizing the pathways can create a cabling nightmare and oversizing adds to bracing costs. Remember that you'll need separate pathways for backbone fiber and copper cables, horizontal workstation cables, patch cables and any other low-voltage systems.



5. Build for Efficiency and Continuous Maintenance

IT professionals juggle the complexities of maintaining uptime 24/7 and keeping energy costs at bay, all while ensuring future capacity. Partner with suppliers that can provide end-to-end solutions so that you ensure compatibility and integration, not to mention a simplified supply chain.

Consider:

How can you reduce cooling costs and improve efficiency?

By implementing an airflow containment strategy, it's possible to isolate, redirect, and recycle hot or cold exhaust air into or out of equipment. Airflow containment offers significant return on investment, and as much as 50% in energy savings.

How can you simplify operations and obtain equipment trend reports?

Always document your systems and take inventory of where all equipment is located. Invest in a power management strategy that includes rack- and room-level power monitoring. Intelligent PDUs automate monitoring and alarms, and if managing large or multiple sites, management software can help IT professionals stay organized and manage assets from a single-pane view and user-friendly interface.

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