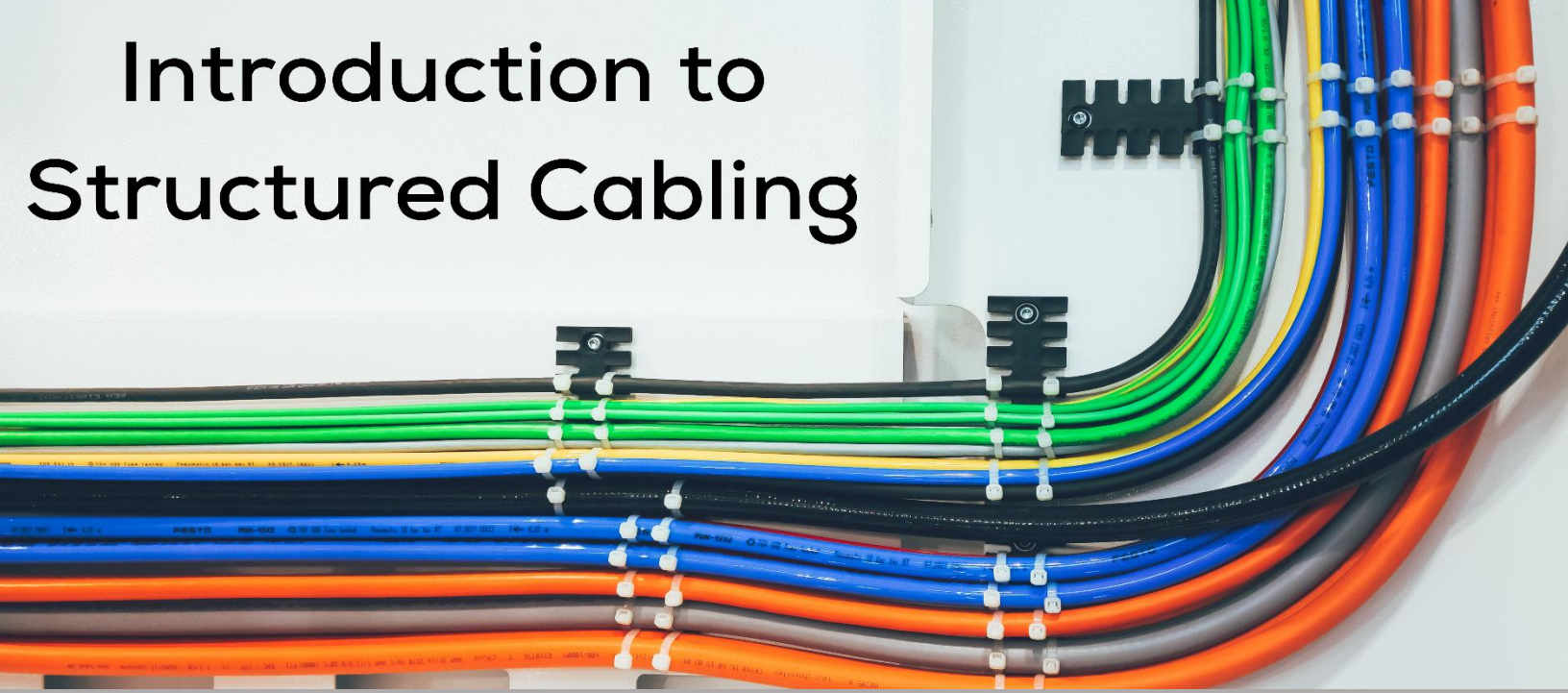


Introduction to Structured Cabling



Introduction

An undisputable truth is that a network system can never be better than its cabling. Providing high-quality cabling can be easy enough for a small Ethernet based on a single twisted-pair hub that supports just a few stations. You can connect all of these devices together with a few high-quality patch cords and your network will be complete. However, the majority of networks support more than just a few stations. Indeed, most office buildings these days require a network system that connects to practically every room in the building. Providing a high-quality cabling system for an entire building is a much more complex task. That's where a structured cabling system can help.

A structured cabling system is based on point-to-point cable segments that are installed according to the detailed guidelines and specifications published in the structured cabling standards. This provides a very reliable and manageable cabling system. A structured cabling system based on industry standards and high-quality components allows your network to function at its best, delivering stable network services for your users day-in and day-out.

You can think of the cabling system as the essential skeleton of your network. Like most skeletal structures, it's typically hidden out of sight, which means that it can be easily overlooked. Overlooking your cabling system can be dangerous, however, since the lack of a solid and well-designed cabling system makes network growth and capabilities very limited.

How Structured Cabling Benefits Your Business:

Structured cabling enables your business to become more efficient while significantly reducing the chances of network issues occurring due to a poorly designed and laid out network. You could have the latest and greatest in computers, servers, and phone systems, but if your cabling isn't up to par or if the architecture was poorly thought out, you're going to inevitably wind up with problems.

Here are eight reasons why structured cabling can benefit your business:

-Decreased Downtime

Networks go down for a variety of reasons. Employees can't dial out, phone calls can't get through, and the internet stops working. The cost of this downtime is tremendous. The only option is to call out a technician and hope they can fix what went wrong. The length (and cost) of repairs depends in part on how well your network is wired. For example, if you have poorly laid out wiring, the technician will have to deal with a spaghetti-like mess of intertwined cables. It will take him a lot longer to perform the repairs. However, if you already had structured cabling installed, the technician will have a much easier (and quicker) time of locating and fixing the problem. The end result is your network comes back online much faster.

-Organization

A well-performed structured cabling job looks visually appealing. The wires are bundled together in an orderly fashion, and associated components are installed securely. This provides a more professional appearance to outside visitors versus a tangled nest of cables and components. With structured cabling, wires won't be hanging from ceilings, and the chances of someone accidentally tripping over, cutting, or unintentionally pulling the wrong cable are slim to none.

-Customized to Your Business

Beware of structured cabling providers that offer "one-size-fits-all" solutions. Your business is unique, and your structured cabling should be custom-designed to fit your current and future needs. You'll also be able to upgrade your system without needing an overhaul of your existing cabling. This allows you to save a tremendous amount of money and time versus having to rewire significant portions of the system when you need a future upgrade.

-Cost-Effective

Structured cabling offers a highly flexible and scalable network that can easily manage the high demands that current and future technology places upon it. It can also significantly reduce maintenance and power costs and allow repair technicians to identify and locate any issues quickly—this can save you a tremendous amount of money in service fees.

-Improved Security

Modern structured cabling projects come with many advanced security features that can help prevent unauthorized access. For example, suppose your internal network is insecure. In that case, it can allow bad actors to enter into it and perform ransomware attacks, which essentially locks up your data until you pay the attacker a hefty fee.

-Improved Communications

Many businesses nowadays have more than one office. You can configure your structured cabling to tie all of your offices and buildings together into one seamless experience for you and your workers. Structured cabling helps simplify complex business problems and allows for all of your offices and facilities to operate as if they were located right next door to each other.

-Easier to Manage

A professional structured cabling job, like that performed by NTi, is highly organized and efficient in the way that it's set up. This makes it much easier to manage and upgrade, and your business will reap the benefits many years into the future.

With non-structured cabling, you'll have wires and devices scattered about and it's anyone's guess as to what wire goes where or how to perform basic repairs or maintenance.

-Future-Proof

Technology is advancing in leaps and bounds. What's modern today might not be so up-to-date in the future. Your structured cabling system will be able to support the latest and greatest in emerging applications and devices. You can also scale up or down without the fear of a significant rewire job. If you decide to move offices, you can also take apart your system and move it to a new location.

Cabling Project Management:

Structured cabling projects have multiple moving parts and sometimes encounter unforeseen challenges and obstacles that require intelligent solutions. However, many of these problems can be prevented by utilizing time-tested strategies both before and during the installation. Read on to learn more about how to properly manage your next structured cabling project—and provide yourself with peace of mind knowing it's all going according to plan.

Challenges of Structured Cabling Project Management

Designing and installing a structured cabling system will often come with a few common challenges that could inevitably delay your project for weeks or even months.

Lack of a Structured Cabling Plan

As the old saying goes, “An ounce of prevention is worth a pound of cure.” Improperly preparing for a cabling project is the #1 reason why things go wrong. Worse yet, poorly designed and implemented cabling can cause complex problems with your technology infrastructure at a much later date. By not having a solid game plan, you're exponentially increasing the risk of installation problems that will require costly corrective solutions.

Team Roles and Responsibilities Poorly Defined

Managing roles and responsibilities require a fluid plan that considers every single contractor and tradesman on the job. For example, many team members, such as CTO's, general contractors, and construction managers, are unaware of their roles, personal responsibilities, and the desired chain of communication. This leads to project delays, unscheduled downtime, and wasted time.

Failure to Set Expectations

The vendor installing your structured cabling is one of your most important assets during the project. When they start acting confused or showing up late to the job, this is most often due to your failure to set proper and solid expectations before the project begins. It's often best to have everything written down on paper and passed out to all stakeholders to ensure everyone is on the same page.

Structured Cabling Project Management Solutions

The above three challenges are easily managed before installation occurs. However, the following suggestions can help ensure the project runs smoothly—and without incident—once it's underway.

Transparency

Full transparency is key when you have multiple stakeholders participating in the installation of a cabling project. You'll need to set a definitive and clear line of communication to ensure everyone is aware of their short and long-term responsibilities. Improving

transparency makes it very easy and painless to make unscheduled changes while adapting to new challenges as they may arise.

The Milestone Plan

As a project manager, you should ask your contractors and vendors for a milestone plan as part of their quote. The elements of the milestone plan should at least include a start and end date for each phase of the project.

After selecting your vendors and contractors, combine all milestone plans into one master milestone plan containing deadlines for all partners and team members. Treat it as a living document and update it regularly to avoid scheduling issues during specific project phases.

Team Stand Up Meeting

Each team member should make a regularly scheduled time for a “Team Stand Up” meeting. If social distancing is a concern, video conferencing can take the place of a physical meeting. During this time, each team member and stakeholder should provide an update on floor plans, milestones, and ensure that all parties are in alignment with the project’s goals. This is also the time to discuss any challenges or unforeseen problems that have arisen—as it allows the project manager to intelligently reassign responsibilities and roles where necessary to prevent unnecessary delays.

Structured Cabling Project Management Risk Mitigation

Keep in mind that regardless of how well you’ve planned the project, challenges can arise when and where you least expect them. While the above suggestions can help mitigate many of the risks that are often seen with a structured cabling project, you’ll need to remain fluid and ready to address any new issues that might manifest.

The key to success and dealing with unforeseen challenges is for all parties to remain transparent, adaptable, and in regular communication with all stakeholders. As you prepare for your [next structured cabling project](#), keep this guide handy and refer to it early and as often as you need to help ensure the best chances of success.

Type of Cabling

Whether you're moving your offices to a new location, expanding your existing space, preparing to add new phones and computer stations, establishing a new warehouse, or implementing new security equipment, you will need reliable cabling technicians. Practically all technology today communicates over structured cabling and data wires, which makes these parts of your buildings structure critical to you and your teams' success.

- **Cat 3:** Untwisted pair of cable commonly used for digital phone systems or voice communications cabling.
- **Cat 5e:** Provides outstanding service and an affordable option for most data network infrastructures.
- **Cat 6:** Desirable alternative to Cat5e with speeds 10x as fast.
- **Cat 6a:** Copper cable standard designed to support 10 gigabit ethernet up to 100 meters.
- **Coaxial Cabling:** Typically used for video transmission or for high-speed data applications.
- **Fiber Optic Cabling:** Offers top speeds and reliability for sophisticated networks. Used for high-speed applications, connecting networks, MDF's to IDF's, building to building, or for cable runs over 300 feet