

Benefits of Project Management in Structured Cabling Installations (LAN)

The importance of an effective project plan



Cris Phelps, PMP
Nationwide SCS, Inc
[\(617\) 500 - 1252](tel:6175001252)
cphelps@nationwidescs.com

The benefits of gathering and distributing information early in the project lifecycle

Jumping straight into a LAN buildout without first capturing the information you need to carry out the project is a recipe for disaster. Beyond knowing building codes and industry standards, there are a number of important pieces of information points you must gather, and make stakeholders aware of well before the first cable is punched down.

Oftentimes, outsiders view a structured cabling installation or LAN buildout as nothing more than just a widespread cable installation. However, there is a lot more than just running cables that goes into completing a project on time, within budget, and to specifications. Successfully completing a structured cabling or LAN project requires experience, planning, and project management skills.

As the size of a LAN project scales, so does the complexity. This means the larger the LAN or the more the locations, the more exponential the negative impact of poor planning and project management can become. In this white paper, we'll review four key aspects of effective project management for structured cabling and LAN installations to help you have successful outcomes, if you choose to manage your own installs.

Here are the most important things to consider in the data collection stages.

1. **Input from all stakeholders:** There are a variety of stakeholders involved in the successful completion of a LAN buildout. These include including IT, the project manager, facilities, property managers, contractors, business partners, inspectors, and more. To ensure everyone is on the same page and ready to get the project rolling, you should touch base with all of them prior to finalizing schedules and committing to a budget.
2. **Quantification of special requirements:** Building codes and special requirements create all sorts of potential stumbling blocks for a project. It is imperative that you identify and have a plan to address these before it is too late. Examples of project specific questions you should ask include:
 - a. **What permits are needed?**
 - b. **Can non-union labor be used?**
 - c. **What are the access hours to the facilities?**
 - d. **Is a man lift be required?**
3. **Project-related documentation:** Floor plans, elevation drawings, technical specifications, schedules, and other project-related documentation must be distributed to all relevant stakeholders at the beginning of a project. Withholding this information until the last minute is a great way to create unexpected delays and confusion. Plan for expedited surveys and scope development costs if project documents are not available.
4. **Scope narrative approval:** Getting approval on a scope narrative should be completed before budget approval. An approved scope narrative is often overlooked, but it is an excellent tool to help avoid finger-pointing, confusion, and delays throughout a project and budget process. A project scope document should include: a project overview & purpose, project scope, specific milestones, change & issue management processes, and potentially more, depending on project specifics.
5. **Budget approval:** Clearly defining a **realistic** budget is important for both the end user/customer and contractor performing the work. Be sure all responsible parties have reviewed and agreed to a final budget **before** the project begins. Failure to do so leads to finger-pointing, mismatched expectations, and dissatisfaction all around.
6. **Detailed Work Breakdown Structure (WBS):** A WBS is a common project management tool that enables all involved parties to have a clear visual breakdown of the work involved. Creating a detailed WBS that covers the entire scope of the project, not just how the fiber and copper cabling will be installed, helps ensure things go according to plan, timelines are met and payments are released timely.

By collecting and distributing this information to stakeholders early in the project lifecycle and well before the first cable is run, you are positioning your project for success. Clearly defined expectations and workflows are the foundation a successful project is built upon.

The importance and benefits of realistic time expectations

One of the biggest mistakes we see during structured cabling installs is the overly optimistic time estimate. As humans, we are all inherently biased and it is easy for us to fall victim to providing time estimates that will be what the end user wants to hear, as opposed to what the project realistically warrants. This is bad for all parties involved as incorrect time estimates lead to missed deadlines, projects that go over-budget, and dissatisfied businesses.

Fortunately, there are ways to improve time estimates. These include:

- 1. Asking the right questions of the right people:** A project has multiple stakeholders that are likely experts in their specific aspects of the project. Interview them and make sure you understand what they can and cannot do and how long it will take. Also make sure to share your overall time estimate with them to ensure everyone agrees it is realistic. Some of the stakeholders that the Project Manager should engage are:
 - a. IT Team
 - b. Facility personnel
 - c. Property managers
 - d. Contractors
 - e. Third Party Business Partners
- 2. Accounting for and allocating 3rd parties time needs:** Schedules will conflict. Inspectors will have varying availability, validating certificates of insurance, obtaining permits, and contractors being unavailable when you want them all add time. All of these points and more must be taken into consideration and accounted for continuously. Engaging the correct 3rd parties and adding proper time estimates based on their expertise will ensure less chance of failure and stakeholder displeasure throughout the project. Address the known unknowns, early and often.
- 3. Use logic and facts to create a “quantifiably defensible estimate”:** One of our favorite terms from the Project Management Institute is the “quantifiably defensible estimate”. Make sure that your install phases and time estimates are based on real world data you can quantify and that will stand up to scrutiny. This means accounting for dependencies, the amount of full-time employees and contractors available, and any foreseeable delays for processes, paperwork, permits, etc.

If you take these three points into consideration when developing your time estimates for a structured cabling project, you can avoid most confusion, delays, unrealistic expectations, and missed deadlines.

Importance and benefits of effectively communicating between all stakeholders

Ensuring effective communication throughout the entire project lifecycle may be the single most important aspect of managing a structured cabling project. With the complexities, pressures, and variety of stakeholders involved in a project, this is much easier said than done. Nonetheless, if you are focused and make a conscious effort to facilitate effective communication, it is possible.

One highly formal and highly effective way of enabling effective communication between stakeholders is creating a communication management plan. As the impact of poor communication increases when stakeholders are added and as the project carries on, having a communication management plan at the start of the project will be important.

Publishing schedule dates is a great way to keep all stakeholders on the same page and communicate expectations, but there is more to it than that.

Regular progress reports and status updates from all active stakeholders on a project are other ways to keep everyone informed, engaged, and accountable. Often a project has multiple dependencies and early or late finishes from one team may lead to delays for another. Status updates and progress reports distributed to all the stakeholders helps to anticipate delays and take advantage of aspects of the project that are ahead of schedule.

Finally, a formal change management process should be implemented. Deviating from the original project plan should not be taken lightly. A deviation can have a domino effect that impacts multiple stakeholders and the success of the project as a whole. For this reason, any changes to the plan must get approval from a predefined group (e.g. the project management team or a quorum of stakeholders) before they are implemented and communicated to all stakeholders as soon as possible.

By following these suggestions, you will enable your project to avoid the pitfalls of poor communication. As a result, you will enhance collaboration and increase the likelihood of a successful outcome.

The importance and benefits of identifying project deliverables and knowledge transfer requirements

The first two sections (The benefits of gathering and distributing information early in the project lifecycle and The importance and benefits of realistic time expectations) were heavily focused on the beginning stages of a LAN buildout or structured cabling install project, and for good reason. The beginning of a project has a huge impact on the trajectory of the rest of the project. However, finishing a project properly is important as well. After all, the conclusion of a structured cabling install or LAN buildout is actually the beginning of the infrastructure's useful life. A successful handoff of the project is not only an important part of project completion, it also helps cement the reputation of the stakeholders and improve customer satisfaction.

At a minimum, the following deliverables should be transferred at the end of the installation:

1. **Test Results:** Test results are one of the vital pieces of information to be supplied to the parties responsible for maintaining the LAN going forward. It is important to demonstrate that the cabling has been tested and certified using industry standard methods. Copper cabling should be tested using Telecommunications Industry Association (TIA) Level III standards and fiber optic cabling testing should be performed using an Optical Time Domain Reflectometer (OTDR). In both cases, test results should be provided as PDF files as part of the knowledge and information transfer to close out a project.
2. **As Built Drawings:** As built drawings provide a detailed blueprint of how the cabling was actually installed and labeled. This enables IT to have a precise understanding of the network installation for future end user device troubleshooting.
3. **Pictures:** Pictures not only make clear what was achieved on the project, they also help those responsible for maintaining the network afterwards. Maintaining and troubleshooting Layer 1 and Layer 2 issues requires a detailed knowledge of how the network was built. A clear reference visible point enables quicker mean times to repair and more efficient troubleshooting, especially for remote IT departments.
4. **Warranty Documentation:** Invariably, hardware breaks, cables fail, and issues occur after a LAN is up and running. On occasion, these issues are related to failures and defects. Ensuring that the parties responsible for the LAN going forward have all relevant warranty documentation helps ensure that the end user understands who to contact and what to expect should something fail. For these reason, providing warranty documentation to the responsible party at the end of a project is important.

Having a clear understanding of the requirements for knowledge handover at project completion will assist in closing out the project and gaining acceptance of completion from stakeholders in a timely manner.

CONCLUSION

Structured Cabling & LAN Installations Demand Effective Project Management.

As we have seen, navigating the complexities of a structured cabling installation require more than just knowledge of Layer 1 connectivity and building codes. Coordinating the efforts of multiple teams, staying within budget, and sticking to a schedule requires careful planning and clear communication. Overlooking these intricacies is a mistake those new to the world of structured cabling are more prone to make. By implementing the techniques we have reviewed here, project managers can make themselves better prepared to successfully lead a LAN project.

Nationwide SCS, Inc has installed 1000's of LAN cabling projects for our customers. We are continuously learning and adjusting to make our process better based on lessons we learn each day. If your company wants to save valuable time, avoid frustration and get an immediate ROI on LAN cabling installations using our expertise please [contact me](#).

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