

Four Keys to Finishing On Time and Under Budget



A successful project starts with solid planning and ends with a smooth hand-off.

The phrases “on time” and “under budget” are often used in discussions of project delivery, but how often can they actually be used to describe a project? Project schedules can fall apart for any number of reasons, but it’s often a case of poor planning and a lack of communication. And if participants have uncommon goals or are left out of the early planning stages, a project can be doomed from the start. The lesson to be learned is that early decisions - both good and bad - have a cascading effect throughout the entire life of the project. Taking the time to establish a well-thought-out plan before the first drawing is printed may seem daunting, but it can help you improve both your budget and schedule performance by 30% or more.

Industry-wide studies conducted by the Havertown, Pa.-based Center for Business Practices (CBP) found that organizations that implemented project-planning initiatives report a 34% improvement in schedule performance, a 30% improvement in budget performance, and a 50% increase in projects completed.

You may not want to take the time to put together a formal plan, but the alternative could be even less desirable.



By including everyone in early planning, you'll increase your chances of finishing on time.

When our firm was contracted to install the electrical portion of a food processing plant, we learned just what kind of an effect poor planning can have. Not only did the various trades not coordinate well with each other, nobody knew who was responsible for completing important tasks on the job. Part way through the project, we discovered large gaps where critical tasks hadn't been assigned to anyone, and other areas where the same task had been assigned to multiple groups. This created mass confusion for all. By the time the project reached comple-

tion, the value of our initial contract had doubled due to extra work and changeorders.

The extra money you can make on all those changeorders may seem worth it, but it can come back to bite you in the long run. Changeorders interrupt or alter the original work sequence and result in additional coordination and planning. They can also extend the use of tools and labor. Sometimes, they may even require you to completely redo your work.

Even a project as simple as switching out light fixtures and outlets requires adequate planning to be successful. It can be very time consuming and expensive to use a trial and error method (**Fig. 1**). Moving things around and making changes is much easier on paper than it is once you've got the space torn apart. The drywaller, painter, and electrician must all do their part to make everything come together in a smooth manner.

Whether you're wiring a new office building or retrofitting a multi-million dollar processing plant, the four keys to

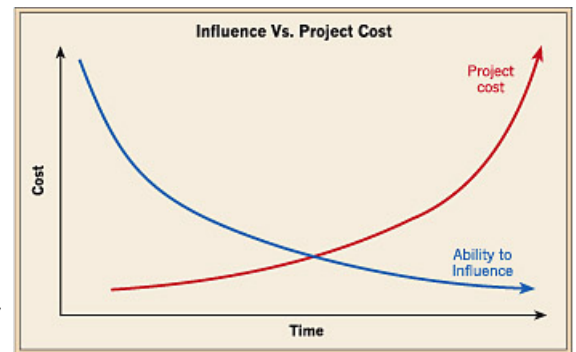


Fig. 1. As the project moves along, the cost of making changes goes up while the effect of those changes goes down.

completing the project successfully are the same.

Key #1: Determine the overall goal of the project.

Are you trying to improve the light levels in an office or change the electrical wiring to fit a new room layout? Does the industrial facility want to increase production capacity, improve safety, or reduce utility costs? Focus on the ultimate business goal rather than simply how to complete your given task.

The cost and duration of a project can slowly rise unnoticed until it's too late, so make sure that you understand and define a successful “complete project” so everyone involved - including the owner - is aware of expectations. Early planning and collaboration between the electrical professional and everyone else involved

can take into consideration issues like reliability, upgrades, change readiness, operating costs, and energy savings. A good plan will help everyone win, including the customer and the other contractors involved.

Key #2: Get all the right people involved early.

Everyone participating in the project must be involved and up-to-date from the beginning. Call a meeting and share all pertinent project information with other sub-contractors, suppliers, internal engineering groups, accountants, and maintenance personnel. Early feedback from the assembled team regarding the design can go a long way in both adding value and preventing snags further down the road (**Fig. 2**). It's much easier to make adjustments to the project/schedule now than later.

Each project has dependencies that need to be mapped out. For example, during office

construction, it would be problematic if the electrician didn't know where each office was going to be located in the final layout or if the painter and drywaller had not received a copy of his work schedule. The carpenter must put up the stud walls before the electrician can rough in the wiring. The painter can't begin until the drywall has been mudded and sanded. Carpeting can't be ordered until the office dimensions and layout are known.

Trade coordination is especially important to a project in a processing plant. Many parts of a process plant must interface or other components will be negatively affected. One of our firm's recent projects faced both budgetary and technical challenges. By having engineering, construction, instrumentation, and control engineering work together on designing intrinsically safe instrumentation and control hardware in a hazardous area, we found that although more was spent on the

initial devices, the reduced wiring costs that resulted (conventional instead of classified) not only compensated for the additional hardware cost but also resulted in overall savings on the project. On top of that, this design now allows the owner to maintain the equipment during operations in the sensitive area.

A big part of getting people involved is also getting their buy-in. Involving everyone in early discussion and decision-making creates a sense of ownership. When people understand why a decision was made, what's considered successful, and feel that their concerns have been adequately addressed, they'll be much more willing to cooperate. This sense of ownership will lead them away from a "looking out for me" mentality and promote overall project success.

Key #3: Coordinate and communicate - the earlier the better. Having a plan is great but it's not worth the paper it's printed on if no one follows it. Owner involvement is the key to ensuring that the plan is followed. Explain what needs to happen when and what the consequences will be if the schedule isn't adhered to.

Often once the "what" of the project is completed, the owner steps out and isn't involved in the "how." All that matters is that it gets done. As one player among many, electrical contractors are very dependent on others to complete their work. It's very important to make sure that the owner understands how important each piece in the schedule is to the ultimate success of the project. The owner can then hold everyone accountable and make sure things get done when and how they're supposed to.

Knowing when things are going to happen allows team members to better schedule their time and resources. FMI, a Raleigh, N.C.-based management consultant to the construction industry, found that 80% of respondents to its 2004 Contractor Productivity Survey reported highly improved productivity when their field managers planned for resources more than five days in advance. Early and consistent planning and communication will help you identify the team's concerns and resource conflicts early enough to adjust without causing many problems for others.

During another recent project, our firm needed to install 2,000 feet of conduit within the concrete foundation, all during a very aggressive plant shutdown. By planning

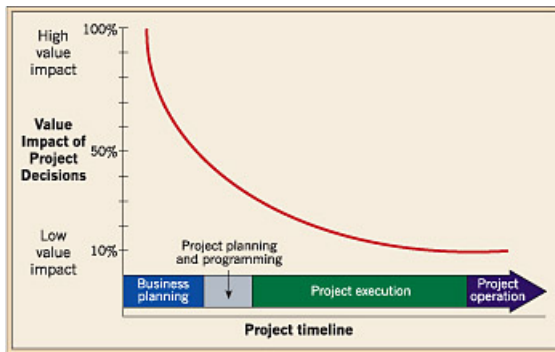


Fig. 2. Early decision-making has a significant effect on the overall success of the project.

Four Keys to Finishing On Time and Under Budget



effectively, we were able to identify problems early, like drawing errors regarding existing conduit and concrete pier locations, trade stacking, and scheduling inconsistencies, that wouldn't have been discovered until installation. Instead of putting the entire project behind schedule, working closely with the other contractors helped cut three days out of the shutdown schedule.

Unforeseen issues always come up and put people behind schedule. But when the owner stays involved in the project schedule and everyone on the team communicates effectively, it's much easier to manage expectations and adapt accordingly.

Key #4: Hand off the completed project. A complex industrial project can be a once in a lifetime opportunity, so getting things right is critical. And a chief component of that is making sure that the right personnel are involved in the project wrap-up. Too often, while the installer is busy testing the equipment and making sure things are running smoothly, the people that will be responsible for operating the plant when they leave are busy painting railings, sweeping floors, or simply not around.

It's not enough to just get the owner's approval. You must also set up the appropriate support system to help those who will take over. Training and support can often leave a lasting impression on those who now have to operate and maintain the newly installed equipment. Appropriate documentation will make future support and maintenance much easier and also simplify the work for the next person who might have to modify your work.

No project goes exactly as planned, but it will be much easier to resolve problems if you understand the overall project goal, get early input from everyone involved, make sure people are communicating and working together, and leave behind an appropriate support system. These keys will go a long way in helping you achieve your "on time" and "under budget" goals.

For more information...

contact Dave Los at dave.los@interstates.com or give us a call at (800) 827-1662.

This article was published in the June 1, 2005 issue of EC&M.