

The Art and Science of Project Management

Commissioning anything is both a science and an art. The science solves technical problems and answers technical questions that are often the focus of NETA technicians. Yet it is the art of commissioning that makes any NETA company successful. What is the art of commissioning? It is the masterful application of project management concepts and tools. This ability, performed at the highest levels, is what differentiates the field technician from the respected master technician.

I have seen several projects that, although perfectly executed from a technical perspective, turned out to be complete failures because a few project management concepts were absent. In these cases the client was frustrated and angry even though all technical expectations were met. Angry clients are not likely to be repeat clients. A company with no repeat clients is not likely to stay in business long. Any technician leaving a client frustrated and angry is likely to have employment problems.

In order to be a successful project manager, one must be able to visualize the process and execution. This article presents the key elements of a well-executed project and its management. Three major components of this vision are considered here: basic skills, organization and planning, and execution.

Basic Skills

Various elements of success should be considered. To be successful, project managers must understand what defines success as it relates to the project. The first element of success is that of striving for success and not accepting anything less. Once this level of determination is attained, an increased level of success will follow naturally. The next element of success involves being in the right place, at the right time, with the right answer. With all the possible contingencies that could occur in a large project, one might wonder how to make this happen. Actually, individuals have a surprising amount of control over this. Good project managers look at the project as a whole, ask themselves what components are likely to fail, where are the land mines, and when are they likely to occur. When these questions are answered ahead of time, a project manager is more likely to have a solution readily available because it was thought out during the planning stage. The project manager then conveys a perception of expertise.



by Rod Olinger

Perception of Expertise Is Everything

The perception of expertise is a critical element in the success of a relationship with a client, and that relationship could determine the success of the project. It sells! Remember that the perception of expertise can be developed by anyone. Just identify the components and take steps to accomplish each, making sure at the same time the client knows of these actions. What are the key components in this perception? They are knowledge, planning, tools, confidence, work, hustle, and credentials.

Learn to Identify the Client's Needs

Start by trying to identify the client's motivation. For instance, does the client need absolute, continuous, quality power or is the client's need to fulfill a requirement by a jurisdiction? A project

manager should quickly see that these differing motivations will change the management approach to this project.

All too often, it is obvious that the client's *need* is to have a perfectly operating system when the work is complete, although this is hardly ever the *focus* of the client. A good project manager expects the client's expectations to be different from his. The client's expectation may be focused solely on the time it takes to complete the project or on the resulting records. There is nothing worse than giving the client exactly what he *asked for* only to find out it was not what he *wanted*.

Do not ask the client endless questions. Instead, ask, "What are your expectations for this project?" Break down the expectations into time categories of before, during, and after the project. One of the key components of this is to determine how and when the client wants to communicate. Knowing this can keep things running smoothly even during the frantic pace of a commissioning.

Understanding the numbers

Once a client's expectations are known, a good project manager needs to define his own company's expectations, which are generally related to making the project financially successful. After all, no matter how happy a project manager makes the client, if the project loses his own company a large amount of money, he may not be employed very long. A good project manager must learn how the project was estimated, proposed, and financially tracked. He must break down the project costs, what were the contributing factors to those costs, what were the major cost contributions, what were the controllable costs? A project manager must understand the things he can influence to manage financial success as well as the things he can't.

Organization and Planning

For large, complex, or critical projects, consider writing a method of procedure. This document includes:

- Sequence of events
- Duration of components
- Individual tasks
- Location of events
- Who is responsible for what
- Procedures
- Expected results
- Who is to be notified and when
- Hazards and safety issues
- Provides for a check-off upon completion.

Operational considerations should also be addressed:

- Are there limitations on the equipment that can be shut down?
- Are there systems of circuits requiring back-feed?
- Will rotating system/circuit shutdowns limit any single system outage?

A good project manager should consider operations requirements in *all* the plant system areas: electrical, mechanical, fire control, security, and communications. The last thing a project manager wants to discover during final execution is that when the power is shut down, none of the communications or security systems work. I know of a case where, due to operational considerations, back-up generation was provided by the client's generators. However, when the normal power system was shut down, there was no back-up power to transfer fuel from storage tanks to day tanks. In a very short time the generators ran out of fuel, and the system shut down.

Manage the Scope of Work

It is critical to determine the scope of work early in the project. Many times a lead engineer performs work on the job site that does not match the scope of work. The engineer may not include all of the equipment within the scope of work or may include more equipment than the scope. He may not include procedures that are in the scope of work or may include procedures that are not in the scope. A good project manager involves the client in deciding appropriate changes to the scope of work. This can happen before and during the project.

Determining Manpower Needs

Getting the manpower right can make or break a project. Calculating the needed manpower is a theoretically simple matter of multiplying the scope of work components times the amount of time required by each component. However, the reality is this never works out. A good project manager considers the work restrictions, the skill of the manpower pool, and the test equipment resources. I have seen situations where the ideal plan had five technicians testing breakers in a room that, it turns out, could not hold more than two. This is a typical work restriction. A good project manager considers ahead of time his solution to problems (e.g., to allow for an extra, highly skilled, troubleshooter to react quickly to problems.) A good project manager must organize his teams, giving them detailed written instructions with all the forms and supplies needed.

Plan for the Unexpected

Plan for emergencies and delays. Consider over-manning slightly in a tight shutdown. Consider troubleshooting individuals or teams. Have an alternative plan for assigned teams. Consider the adage *if something can go wrong it will go wrong*. In my experience, everything can go wrong. With an alternative plan for each team, each can be gainfully employed to keep the overall project moving when a delay is encountered.

Communicate with everyone! Have established points within the project when certain communications will take place. Have established methods of communications for work teams. Have established criteria for communications from the work teams. Let them know what to communicate and when.

Closing the Worksite

There are key items to consider when closing the work site:

- Ensure that all the tools have been accounted for
- Ensure that all the personnel have been accounted for
- Ensure that all personnel are out of harm's way
- Ensure the system has been checked for grounds or shorts due to testing or safety grounds.

Don't forget the client now. Often the project manager forgets any follow-up in an eagerness to get on to the next project, but the best project managers – those who develop long-term relationships with their clients – go on to accomplish a few more tasks:

- Conduct an out-briefing with the client
- Review the original proposal to determine if any issues need follow-up
- Tour all of the job sites to verify that there aren't any problems
- Quickly give the client a courtesy contact after the completion of work
- If the report will be delayed, provide an interim status report, but provide a timely report if at all possible
- Provide billing instructions
- And most importantly, don't forget to follow-up with the client to get any additional or follow-up work proposed and accomplished. Your company will greatly appreciate it.

Conclusion

In the end, a good project manager realizes that no project will be without its own unique problems and challenges. The possibilities for setbacks are endless, and not all can be anticipated. However, by mastering the basic skills, thoroughly organizing and planning the project, and effectively overseeing its execution, a good project manager will be able to minimize the impact of any unplanned events, and by doing this, will go a long way toward meeting his ultimate goals: a profitable project and a satisfied client. 🌐

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