# Five Ways to Effectively Support Your CPM Scheduling Process

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The critical path method (CPM) scheduling process is not being optimally deployed within many construction organizations, and some may even say the process is "broken." Despite having many talented schedulers, and scheduling programs that work well, the industry hasn't always successfully executed the scheduling process across the board. Some data even suggests that the way the CPM process was introduced to the industry has been a large contributor to the litigious nature of construction. This, in turn, has caused a more significant divide and reduced trust in the process.

Although focus on the schedule seems to be heightened, only a small percentage of people in construction actually understands CPM scheduling. Unfortunately, that group does not typically include executives, risk managers, operations managers and, most notably, project managers (PMs), and superintendents — the people who need to live and breathe the schedule to maintain budgets and timelines. The reality is that most non-schedulers don't have a fundamental understanding of this process and, as a result, they don't truly embrace it. That's especially true of PMs and superintendents.

This is the root of why the process is not optimal: Many people think they understand CPM scheduling in a good-enough way, but in most cases, they don't understand it enough to trust or appreciate it. As a result, they do not truly embrace it — and the schedule inevitably becomes a reporting mechanism rather than the management tool it was designed to be.
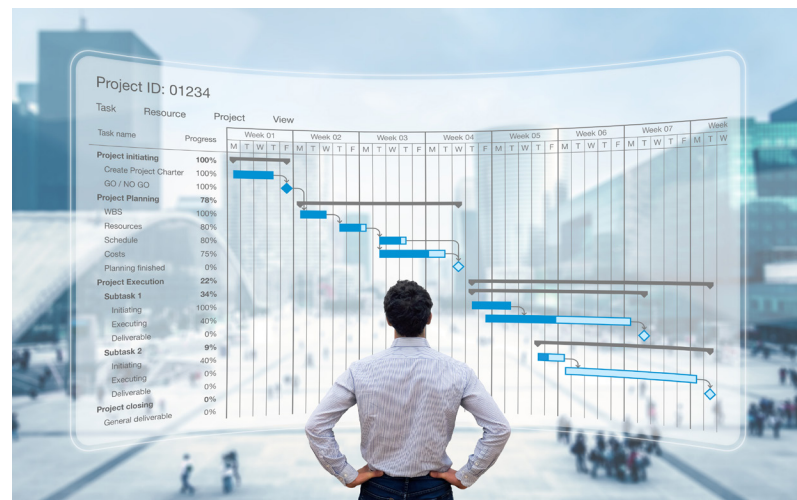
Here are five actions organizations can take to empower team members so they better understand and appreciate the CPM scheduling process. Due to their day-to-day responsibilities for projects, PMs and supers are a priority — but the more that individuals involved in the scheduling process understand how it works, the more they will start to embrace it.

Teach the what and why of CPM scheduling

In construction, most people see a schedule, print out a six-week plan, and go to work. They look at the activities on a calendar and try to keep up with them. They do this because they think that's what they're supposed to do. Of course, they know the red activities are critical, and to them that means

those activities are priorities. But do they understand and appreciate the following aspects of the CPM process?

» How critical path activities are calculated and the relevance of them as it relates to managing to a project end date

» How to find the next high-priority activities, and the value of total-float and free-float calculations

» How one missing logic tie can create an erroneous critical path and inaccurate float calculations, sending the wrong message to PMs and resulting in a project that is headed down a wrong path

» Why applying finish constraints to multiple milestones might be one of the biggest mistakes in scheduling

Many people in construction don't understand these concepts, yet they are given complete responsibility to manage and govern a project schedule.

Educate about best practices, and be repetitive

Most individuals in the construction industry think a schedule that "looks right" is a good one. They judge this by the flow of activities in the plan, as seen on a printout, rather than digging into the details to ensure best practices are being followed. More simply stated, a schedule that looks good can be a terrible one, and most schedules generated in construction are sub-par in the quality department. That's because missing hard logic or crew logic, and too many constraints and activities with long durations can change everything — and result in an erroneous critical path. If the critical path is inaccurate, at any point, the entire project is at risk. The critical path and near critical path tell the user what a high-priority task is versus a low-priority task (in terms of managing to an end date). A little bit of education, and continual reiteration, goes a long way.

Give schedule ownership to PMs and supers

Most PMs and supers complain that the schedule isn't designed the way they would like it to be done. This is particularly true in organizations that hire experienced schedulers to manage the process. Often PMs and supers feel the scheduler is telling them how to manage, or the plan is not in line with how they would like to manage. It's important to have the scheduler and the PM or super build the schedule exactly the way they intend to build. It's also important to continue to update and modify the plan in a way that is agreed to by PMs, supers, and subs. Unfortunately, schedulers usually don't have enough time to figure this out on 10 projects — which can end up costing millions of dollars in project delays and overruns that occur more frequently than anyone is willing to admit.

Enforce accountablity for PMs and supers that involve executives

One of the biggest challenges in schedule management is that human brains are not designed to take a 40-page Gantt chart and make sense of it quickly. Of course, someone can open a few pages and see what's been done, what still remains to be done, and when the projected completion dates are. But this doesn't even scratch the surface of what's really going on. Instead, it opens the door to "pencil whipping" the schedule.

Construction isn't easy, and rarely do things go as planned. Many moving parts are involved, and delays and impacts happen often. Add to that the fact that PMs and supers have their jobs because they are confident, hardworking, and have a never-say-die attitude. When challenges happen, they get confident. Sometimes they can be too confident, and that false sense of certainty gets built into the schedule. Confidence can quickly surpass reality if some sort of objective analytics isn't built into the process. This overconfidence bias is rampant in construction project management departments, and the inefficiencies that overconfidence can result in is staggering.

Therefore, it's imperative to be able see the forest for the trees by analyzing delays, response to those delays, changes that drive compression, and schedule feasibility. These analytics rarely get done. As a result, many factors get lost in the shuffle and projects go off the rails before PMs, supers, executives, and even expert schedulers can see it. Analytics works; it's just highly specialized, time consuming and, often, arguable. Schedulers can only do so much, and because companies don't invest nearly as much money as is required to effectively manage and govern the scheduling process, PMs, supers, and

executive need to step it up and learn what to do. Analytics will fill the gap.

Augment scheduling with technology

Schedulers have enough on their plates and consultants are expensive, so analytics get placed on the back burner. During the past several decades, schedule analytics were discovered and best practices were formed. Technologies evolved that support this broken-down process. So, companies have these choices to make if they want to do this right: train everyone, hire enough qualified people, or take advantage of the technologies available to augment a significant part of the process.

The construction industry's scheduling process, as it currently exists, contributes to delays, litigation, and other challenges that plague projects. For real change to take place, PMs and supers are two groups that need to understand and implement the CPM scheduling process effectively. A little education goes a long way and is worth its weight in gold.

About the Author

Michael Pink, PSP, is the CEO and founder of SmartPM Technologies, a SaaS software company headquartered in Atlanta. SmartPM is a cloud based, full-service schedule analytics and project controls platform designed by industry experts with one mission in mind: to provide stakeholders with a tool to evaluate project performance in real-time, identify critical risk issues, and reduce delays and potential disputes.

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