Critical Path Method Scheduling is an invaluable tool to the construction industry. However, despite more than 40 years of use, there are still some common CPM errors being committed by seasoned construction professionals—errors that dilute the effectiveness of even the most carefully constructed CPM schedule. I have learned much through my consulting work, and I now provide you with seven of the most common errors made in CPM Scheduling.

By Richard Merkhofer
Lack of buy-in by the project team. Over the past five years, more owners and general contractors have incorporated CPM scheduling into their construction project plans. However, their enthusiasm is not always matched by their project team. Getting buy-in from other members of the team—the project manager, superintendent, architect and subcontractors—can sometimes prove difficult. The result: a well-executed schedule that rarely gets used.

Personnel are ill-equipped to create a CPM schedule. CPM, when properly executed, is a sophisticated tool that can save a client considerable time and money. But oftentimes the general contractor turns the scheduling over to an inexperienced team member. This person’s sole expertise may consist of one scheduling course and some CPM software knowledge, but lacks the kind of seasoned judgment that makes a plan work. The result: a flawed schedule that can cause significant problems.

Inadequate software for the job. If your construction project needs “serious” scheduling—such as a $15 million school or a $50 million hospital—you need a software package capable of delivering more comprehensive reports and doing more complicated analyses. Choosing a software package that is less than what is needed is a sure way to cause scheduling problems.

Abuse of the scheduling software. As the adage goes, “garbage in, garbage out.” Someone who knows how to manipulate scheduling software can wreak havoc with a project’s successful completion. A CPM scheduler can choose different technical options—such as logic override, lead and lag calculations or constrained dates—when working with the schedule. If the scheduler’s “constrained” dates are artificial—chosen to create a certain result on paper—then the CPM is useless. After all, its purpose is to reflect realistic start/completion dates for the project’s activities. And the team members who rely on a manipulated schedule to make decisions are mislead, often with disastrous and costly results.

Inadequate incorporation of changes into the CPM schedule. A CPM schedule is not cast in stone. When changes are made to a construction project, they
must be accurately and continuously incorporated into the CPM schedule updates. Unfortunately, all too often a contractor either doesn’t plug in the changes at all or waits until the end of the job, when it’s too late. Regular monthly updates to the CPM schedule, which include proposed and altered changes, would help ensure that the changes on the project are correctly assessed and accommodated.

Lack of communication during construction project. It is not enough for the contractor to provide monthly updates of the CPM schedule and to produce updated reports. If this information doesn’t get shared with everyone involved with the project or if the information is difficult to decipher, then the updates are useless. Numerous, long and confusing computer reports often are issued but eventually cease to be read. One solution to information overload are short (three- to four-page) written management analysis reports that summarize all the CPM information—what has been accomplished on the project, what still needs to be done, whether the project is on time or behind schedule, and what the next critical activities are that need to be addressed. With this kind of summary, team players are kept up-to-date with easy-to-digest and understandable reports.

Failure to maintain a comprehensive schedule for claims prevention. Over the years, CPM’s purpose has broadened from a planning and scheduling tool to a way of protecting the project team in the event of a dispute. Used this way, a CPM schedule can be likened to an insurance policy because it provides a record of a project’s construction history. This history can be invaluable when tracing back who is responsible for a particular problem on a project. With a comprehensively planned CPM and with regular updates that contain all change orders, you have produced a file of information that can help prevent costly claims.

In conclusion, a CPM schedule is a vital tool for well-managed, timely and cost-effective construction. But it is only as effective as it is thorough, well executed, updated and used. Avoiding the seven errors listed in this article will go a long way to ensuring a successful construction project.

About the Author
Richard Merkhofer is senior vice president of Wagner Hohns Inglis, Inc., a Mount Holly, N.J.-based construction consulting firm that has pioneered the development of project scheduling for the industry. WHI specializes in three service areas: construction claims resolution, critical path method scheduling and project management.