

Schedulers vs. Planners There Is a Difference!

Yes there is a difference – a BIG difference – and yet, it could be argued that they are one in the same, however I won't argue that point here because I want to stress the differences first, and then the similarities between the two disciplines. But first you need to understand that I am speaking for only the differences and similarities between the two as pertains to the construction industry – the only one I have experience with.

We schedulers are a different lot – like estimators. By that I mean that typically you do not find that most folk heading into the construction industry seek out a career as a scheduler or an estimator – the glamour and power is becoming a project manager. As a new recent college graduate in engineering and just entering the field with a large construction company you may get trained and spend time in the scheduling and estimating departments of the company to get familiar with their respective ways of doing things, but you don't typically stay put in them. There are those that may incorporate scheduling practices into their daily scope of work such as project managers or superintendents, but they only devote a small amount of that time in any given day to do so. No, I am talking about schedulers, were all they do – day in and day out – is schedule. On very large capital projects scheduling is a full time position, for one or more schedulers. The need for schedulers is dependent on the size of the project and the scheduling specifications and needs built into the construction contract. So what is a scheduler and what is it that he/she does. According to Webster's New Collegiate Dictionary a scheduler is one who appoints, assigns, or designates for a fixed time. And in the National Association of Women in Construction, Construction Dictionary, a scheduler is the person authorized to schedule work or the flow of material pertaining to a project. The very vagueness of the definition leads me to believe that even these august bodies aren't tuned in or totally aware of just what it is a scheduler does. In fact, that is what is happening right now at the Project Management Institutes College of Scheduling – the college is in the process of defining just what a scheduler is and does, how he should do it, and with what tools. So the fact that the Planning Engineers Organization has been recently created to define just what it is a planner does, is highly appropriate and timely. Being that the PMI/COS is just getting started with their effort, I will attempt to jump the gun and define a scheduler myself in an abbreviated definition.

A scheduler is one who is knowledgeable with the Critical Path Method of scheduling, who understands how to use it and analyze it. He is familiar with all the techniques and practices of proper scheduling. He knows the proper use of durations, scheduling relationships, lags, constraints, and logic to derive the critical path. He knows about calendars, and code structures, and how to organize a schedule to be a meaningful tool as a report out document for the state of a project. He knows how to update a schedule and how often. He knows

how to read plans, specs, and contracts to determine just what all stakeholders expect of his schedule. He knows how to account for and record delays to the schedule and to analyze the impacts of those delays. He knows who to ask and what questions to ask for information leading to the creation of a schedule and its subsequent updates. He is the messenger for the state of the project. As the messenger, lots of times his message is not wanted, appreciated, or understood. While it is his job to make all stakeholders aware of his message, it is not his job to correct and fix the problems – that job belongs to the project team.

Also a scheduler is usually not involved with cost in the same way that say an estimator is. Sure he is as aware of project costs and budgets as anyone would be on a project team. He may also be involved with cost if a schedule is resource and cost loaded. If this is the case then he is involved with cost projections as relates to percent complete of the project and the report out of cost curves and other reports. His main frame of reference though is time and not money. Sure time is money, but when a scheduler builds a project schedule, he is not thinking about the dollars needed to construct it. He should only be thinking about how long is it going to take to build it in a realistic and efficient time frame regardless of cost. If, once the schedule is built and the resultant overall duration is too long for the owner, or anyone else for that matter, to stomach, then he starts to think about ways to accelerate and re-sequence the project that will have cost implications. Those cost implications usually result in a cost increase to the project. Now it gets down to the battle of getting the owner to understand that he can have the project for X amount of dollars over Y amount of time or he can have the project for X+Y dollars for less time due to acceleration. It gets down to the owners cost of money and the dollar stream that is created once the building is in operation and fully functional vs. the risk the builder has to endure to get the project built.

It is also within the scheduler's scope of work to use and understand the scheduling software programs that are available and in use today. There are many and whichever one is used is more often than not determined by either the company one works for in terms of cost, requirements, and need and/or by the owner/client and the specifications of the project being built.

Typically a scheduler – in his formative years - takes the information developed by others to create a schedule – he is a data entry person. A scheduler can learn all the necessary skills to be a scheduler – the messenger - from classroom instruction and book learning. In order for a scheduler to be effective though, he has to understand the construction process and the flow of work. Here is where the line gets fuzzy between what it is a scheduler does and what a planner does, because a planner also needs to know the construction process – that is what his life is all about.

So now we need to define a planner. Here I am not talking about city planners or environmental planners, but construction planners. In Webster's New Collegiate Dictionary the definition of a planner is – one who acts on or processes the making or carrying out of plans. The Construction Dictionary doesn't include a definition for the term, so I will attempt to define a planner here. A planner in construction is the person who creates the plan and figures out how build the project in the most efficient manner. To be honest it takes more than one planner to plan a large project. One planner may start the process and get the ball rolling. At some point in time his plan will get presented to others in the construction team for their review, comments, and approval. The plan will get further tweaked as more is learned about the project. As with a schedule, the more eyes that take a look at a plan, the better, more realistic, and refined it becomes. In order to be a planner you have to know how a project goes together. In the construction industry, that means knowing the steps needed in the design process, the permitting process, the development/release/award of bid packages, the tracking of long lead procurement items and material, the actual construction of the project, and finally the steps need to commission and closeout the project. To be affective you need to think outside the box and consider any and all means to execute and construct the project. You need to think about the resources (workers and equipment) needed and available to execute per the plan. You need to have a full understanding of the owner's expectations and milestones. You need to have a full understanding of the physical parameters, codes, laws, customs, and neighbors of where the project is going to be constructed. You need to know who to go to, to get further information. You need to be able to read and understand the set of construction documents including the contract for the project you are planning. You need to know the language of the project i.e. the acronyms, abbreviations, construction and engineering terms used to construct the project. In short you need to be able to talk the talk and walk the walk – to give your plan credibility.

A construction planner, as opposed to a scheduler, becomes one not by going to a class or reading about how to do it from a book, but from actual experience out in the field – and lots of it. The more experience at building projects the better the planner and the more experience at building different projects the better the planner. Variety allows for outside of the box thinking. In construction, planners have to have a full understanding of what it is they are planning to build, where the project is going to be built and the parameters that control that site, the site conditions themselves in terms of geology and hydrology, the equipment needed to develop the project based on the site conditions, the structural framework of the project and the equipment and manpower needed to construct it, the time it takes to order, fabricate, and deliver long lead equipment items and material for the project, the qualifications of the subcontractors and their ability to perform, man up, and equip their scope of work per the contract, all safety issues, codes, concerns, and practices for a safe working environment, to where all the workers for the project are going to park their cars and eat their lunch.

Planners are also involved with cost. More so than schedulers because the way buildings or projects are built have huge cost implications. Planners in the design/build arena can directly affect the design of a building and thus its costs – especially its structural frame. Usually the seismic zone the project is located in determines the structural system – at least its minimum requirement. But once that seismic requirement is determined there are many different structural systems that can be used to build the project and meet the requirement. The structural system could be either a steel moment frame, a hybrid concrete moment frame, or it could sit on seismic isolators and be built conventionally with either steel or concrete. With today's steel prices – steel is not necessarily the first choice. Depending on the footprint of the building, the placement and number of cranes to construct becomes a major cost factor. Do you use mobile cranes or tower? What is a typical lift for the crane? How far out and over what is it going to have to reach to place a pick? How long is the crane going to be in use? Based on the National Weather Service data, how many days of wind over 25 knots can I expect in a given year that could possibly shut down my crane time? While the crane is not in use lifting steel – what else can I be doing with it? All of these questions and answers have cost impacts and planners have to deal with them – there is no getting around it, especially now with tight budgets and owners who are really starting to take a hard look at capital expenditures. Naturally they want more for less – so what's new? All of the above and more are the job of the planner.

It can be said that to be an effective scheduler you also need to be a planner, but you can be a planner, and not a scheduler. You can plan how to build a project and not need to know how to input that plan into some scheduling software program. Naturally to plan you need to understand relationships and sequencing of work and some aspects of scheduling in order to graphically create the plan. You do have to be able to communicate that plan to a scheduler though so that he can input it. A planner, like a scheduler, is a messenger. He develops the plan and then others usually execute it. To be a truly effective scheduler though, knowing how to plan and the construction process is key to being a professional scheduler and not just another data entry person. As a scheduler, if you do not know the plan and how things go together and in what sequence, you cannot credibly relate to others the impacts of a delay to a schedule and create or come up with some other way to do it to recover lost time. In my own personal experience, as I became a better and more experienced scheduler, I also became a planner. The planning discipline grew out of, and concurrent (to use scheduling terminology) with, the scheduling one. It is as the planner of a project that the fun begins, because what better part of a project to be involved with than the planning of it. Then as the project goes through the design and engineering phases and eventually gets built and commissioned, the satisfaction gained from seeing a project go together – as planned – is a planner's final reward for a job - well planned.

The two disciplines are separate on one hand and linked on the other. In some circles the two terms are synonymous with one another. In construction they are not and knowing one discipline does not automatically make you knowledgeable and proficient in the other.