THE ENGINE ROOM

Planning, Scheduling & Execution

The Nexus of Utility Operational Performance

Given that the planning, scheduling, and execution process is so critical in Utilities, it begs the question: Why is it often such a major source of frustration?

With the constant flow of new optimizing technologies and an ever-increasing emphasis on cost reduction, efficiency, and productivity, it is surprising to see Utilities continue to struggle with something as fundamental as the effective planning, scheduling, and execution of work.

On the face of it, the core business of a Utility is simple. It is defined by cost effectively keeping the lights on or gas flowing to customers. Even the work that occupies most employees has an intuitive logic to it. Primarily, it is to maintain the current infrastructure and equipment, connecting or disconnecting customers, and generating or managing the flow of power or gas through the system.

Yet, even with that inherent logic in the business, it seems like many Utilities are challenged to figure out how to move more work through their planning, scheduling, and executing process safer, faster, and at a lower cost.

Of course, there are external planning and scheduling complications, such as changing regulatory requirements, managing customer expectations, and environmental permitting. Then there are internal planning and scheduling complexities with the myriad of departments involved, including Asset Management, Engineering, Design, Scheduling, and Operations.

However, given that the planning, scheduling, and execution process is so critical in Utilities, it begs the question: Why is it often such a major source of frustration? We observe that the difficulties are not normally complex technical issues – Utilities are good at those. We tend to see that planning and scheduling difficulties are often people issues, and resolvable ones at that.

While we acknowledge that every organization is different, we do see a "Top 4" of the most common non-technical problems that can affect the planning, scheduling, and execution process.

1. Conflicting Objectives

When it comes to high level strategic objectives, we tend to see alignment. Nobody disagrees with "keeping the lights on" or "maintaining equipment to optimize the life cycle costs". Therefore, arriving at a unified and aligned understanding of the operational goals and organizational purpose should be straightforward. However, the reality is that keeping things clear is more complex. Everyone, from crews to engineering professionals to executive leadership, has deeply held motivators that feel important to them. We often see:

- Some teams' primary focus is making sure they have enough work to keep busy (or stretch the available work to make it look like they are busy).
- Some people would do whatever the customer asks, even if it makes little business sense, in the name of "customer service".
- There are people who see status in being assigned the high-profile project or having the biggest budgets.
- Then there is the whole challenge around maintenance. It's rarely sexy, it's expensive, there is little recognition for doing it, but you (or your successor) will be crucified if you don't.

2. Decision Making Rights

Even if the people who make up the company have their own interpretations around what should be done or what's most important, planning and scheduling should still be straightforward. If people know who is entitled to make planning and scheduling decisions, those decisions should be respected. However, we routinely see organizations where:

- The question, "Whose decision is it?" cannot be answered clearly.
- The value of consultation (which is a great thing) is confused with giving those being consulted veto powers.
- Decision-making is described as "shared" with no clear means to make a decision when the parties don't agree.
- Decisions that are supposedly made one day are revisited the next day because somebody did not really agree with it.

3. Failing to Incorporate Local Knowledge

Most Utilities have centralized and/or outsourced aspects of their planning and scheduling process. It's common to see the Engineers and Designers developing plans in one city for crews in a different city to execute. That works well when the Engineers' view of the situation at the job site is perfect, but it's typically not. On the other hand, the local crews do know the neighborhood, and while they may not be Engineers, they do what's there now. It should be easy to communicate the local knowledge from those who have it to those who need it, but we see barriers:

- Engineers and planners often rely on electronic asset databases with flaws in the data.
- Engineers who don't have the time to do site visits.
- Employees and local crews who don't really have the time to respond to questions.
- Engineers who don't really like to ask for input.
- Local crews who don't provide input in a helpful way.

4. Improper Accountability

Almost every employee in every Utility understands that their boss is entitled to tell them what to do and hold them accountable for their performance. What people object to is somebody else from a different part of the company showing up and telling them what to do or criticizing them for what they did. A principle to live by in effective organizations is that accountability must follow the lines in the organizational chart. Even with complications, such as matrix organizations, the logic still follows that accountability must respect the organizational chart. However, it is common to see unhealthy practices, such as:

- Planning departments or support groups "over-reaching" and attempting to manage operational execution.
- Scheduling groups who think it is their role to hold operations accountable for getting work done on time.
- Operations groups who worry that they don't have enough work to do, so they take it upon themselves to tell designers what they need or just go ahead on their own.

An Unfortunate Outcome

It's not hard to imagine that if you have people arguing about what they want out of planning, there will be problems. The inability to make decisions is coupled with plans that contain errors, because the people who made them have gaps in their understanding of the situation on the ground.

It's also easy to see the slippery slope to accountability problems when leadership in one area does not "own" the performance of their respective business units. An accountability vacuum is created, which other departments, who rely on the work, try to fill by deciding they need to hold the underperforming group accountable.

These types of failings compromise the integrity of the planning and scheduling process and the organizational design. It leads to a myriad of challenges. However, when people talk about their planning problems, they tend to highlight symptoms and not the root cause. We often hear complaints from front-line crews about: delays in getting plans completed; engineering errors in work plans; late, missing, or outdated drawings; errors in the bill of materials or delivery failures; impractical scheduling decisions; substantial effort spent on shadow reporting of work status and budgets; projects at a standstill; and groups debating over how to address the issues.

While these types of problems are real, they are not the root cause. Unfortunately, we see utilities redesigning their planning processes, restructuring the organization, buying new IT systems, and hiring more people to plug planning and scheduling gaps only to discover that the problems persist.

On the face of it, the solution to planning and scheduling problems are more straight forward – do your best at resolving the top four challenges above.

The inability to make decisions is coupled with plans that contain errors, because the people who made them have gaps in their understanding of the situation on the ground.

1. Make sure accountability follows the lines in the organizational chart. Prevent members of one department from circumventing the established process or attempting to hold members of another department accountable. If the leader of a group is not holding their team accountable, deal with the real problem.

2. Establish clarity around who has ultimate decision-making rights. Avoid split decision-making structures without a mechanism to break ties. Understand that consensus is not a decision-making process. A group in a room can reach consensus, but to commit an organization to action, somebody must approve the expenditure. Who is that?

3. Make sure that the role leadership (at all levels) plays within the planning, scheduling, and execution process is robust. Leadership is the fundamental pillar that anchors the process. Whether it is unifying and aligning an understanding around the goals or clarifying decision-making rights, roles, and responsibilities, it is strong and effective leadership that provides the rigor necessary to consistently apply the right behaviours to sustain planning and scheduling performance.

4. Create tools that provide visibility into the status of work as it moves through the planning, scheduling, and execution pipeline, so that everyone in the process can see the status of work upstream and downstream from their position.

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Clarifying objectives and decision-making rights inevitably involves front-line and middle management leadership. We see too many well-intentioned leaders in Utilities who rose to their positions because of technical strengths. These leaders want to make sure the right technical decision is being made and are willing to intervene if they have concerns. However, the kind of leadership needed to sustain planning and scheduling from Asset Management through to Operational Execution includes engaging employees within their groups, recognizing exceptional performance, and addressing areas of underperformance.

Similarly, developing the data that allows leadership to monitor the health of the planning and scheduling process is a little more nuanced than coming up with a few KPIs that track in-service date performance.

Ideally, the tools should:

- Monitor the health of capital, maintenance, and emergent work “pipelines” as work packages progress through the cross-functional process.
- Create visibility of upcoming work for front-line managers through the work pipeline dashboard tool to ensure proactive management of work volumes.
- Clarify inter-departmental handoff points and associated performance requirements within business units.
- Support the use of “pressure release valves” for managers to load-level work during times of peak activity, enabling proactive front-line skills development, management of material shortages, and adjustments to weather work.
- Involve refined process metrics to measure specific high impact performance indicators (previously, teams had either limited data or far too complex reporting to make measured operational decisions).

What is 15% worth to your organization?

Planning, scheduling, and executing work is what most employees in the average Utility aspire for. Asset Management staff strive to think about and strategize the big picture. Engineers and Designers enjoy figuring out how to make it work. Crews are happiest when they have well-planned work they can go ahead and execute. Similarly, every executive in a Utility would love to see more work being done that is: safer, completed faster, and at a lower cost. Everybody wants effective planning and scheduling.

So how big is the spread between good planning and scheduling versus the kind of dysfunctional process that frustrates all those who must endure it? Part of that answer is difficult. We know there is no perfect way to measure the efficacy of planning or the productivity of field crews; however, we would suggest that the following observations of "challenges" are not uncommon.

- We see field crews who have such a low level of confidence in their work packages that they anticipate between 30% and 50% of their work packages will have flaws that require fixing before they are executable. Many Utilities will have dedicated staff whose sole function is to review and "fix" work packages.
- We see crews travelling to the field only to discover that they can't start work in 10% to 15% of their planned jobs due to "glitches" of one kind or another.
- We see Engineers and Designers who spend less time engineering and designing because they feel obliged to either solve problems with work packages or step in to fill quasi-supervisory roles to make sure the work is being done as they anticipated. Some Engineers estimate that they spend as little as 25% of their time engineering, with the rest being tied up in meetings, responding to requests, and fixing planning and scheduling problems.
- We see organizations where reaching decisions on engineering standards can take years, with an incalculable amount of effort expended because of confusion over decision-making rights.

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- We see organizations where scheduling, which should be helpful, is almost a daily argument about priorities, control, and accountability.
- We see leaders and executives who simply don't know how healthy their planning and scheduling process is because they lack the visibility into how well work is flowing through the process.

To begin to think about the dollar impact, we suggest that a conservative estimate in many Utilities equals 15% of an employee's time being wasted due to planning and scheduling problems.

- For crews, it manifests as literally standing around waiting – waiting for parts, waiting for drawings, waiting for clarifications, just waiting.
- For engineers and designers, it manifests as time spent trying to resolve the problems with the last job – the one they thought was finished.
- For supervisory and professional staff, it's the time spent in meetings, which simply don't feel productive because issues are debated with no clarity on how an actual decision will be made.

The interesting conclusion is that improving planning and scheduling and realizing value from the 15% of lost organizational productivity, often has little to do with the structure, the planning process, or the IT tools. It's about making a material difference on the top four issues discussed here.

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