



Dynamic scheduling for turnaround success

When asked about the quality of their schedules, many turnaround managers will complain their schedules are not exact, are incomplete and do not properly capture the developing circumstances of a turnaround, thus reducing the ability to actively manage the event. This is often due to static schedules, which do not reflect the dynamic nature of a live turnaround. However, if managers are prepared to embrace a complete and comprehensive approach to building and managing a schedule, the dynamic methodology can make a significant difference to the success of their turnarounds.

Preconditions for dynamic scheduling

In order for dynamic scheduling to work, schedule quality is paramount. This means scheduling principles, standards and quality need to be defined in a concept well in advance of actually creating the schedule. The concept is essentially an agreement between all stakeholders defining the way in which the schedule will be developed, managed and utilized.

Decisions on the schedule structure, level of detail, management of schedule uncertainty and risk, level of integration as well as roles and responsibilities of key stakeholders should be defined and agreed upon by all. Schedule structure and execution organization structure then need to be aligned to enable meaningful progress reporting and daily decision making.

Creating the schedule

Schedule creation should be in line with the principles laid out in the concept. Frequent reviews to ensure the schedule will be developed on time and in line with pre-defined quality standards are crucial. Typical quality issues such as orphaned activities (i.e., activities with no predecessor or successor); actions with no allocated resources; and a high quantity of constraints like fixed dates, lags, leads and lack of standardized milestones are likely to lead to a schedule that cannot be used for daily decision making during turnaround execution.

Additionally, ensuring schedules are fully integrated by including all event activities such as operational tasks and

capital projects will dramatically improve the chances of it surviving execution. For example, by detailing the shutdown process, optimal utilization can be achieved by allocating resources as early as possible to the phased shutdown, and any delay implications can be recognized and taken account of immediately.

Dynamic execution and optimization

Optimizing the schedule is an iterative process that involves different aspects. The critical path, resources, network and simultaneous operations must all be taken into account if the schedule is to be fully optimized. Considering risks are always present, it is crucial they are also properly evaluated to establish their possible impact on the schedule completion date. Sticking to a deterministic end date that has been dictated by the critical path and excludes a realistic understanding of risks involved can result in the schedule portraying an unrealistic project end date.

Finally, the schedule owner and execution contractors must ensure there is a continuous update of live progress information

into the schedule during execution. Status reporting, reviewing and prioritizing updates accordingly and then communicating them to the execution team is vital so inevitable obstacles or changes can be accommodated and do not cause unnecessary delays or breaks. This involves ensuring a workable daily routine is established in terms of reporting progress, updating the schedule, agreeing on priorities and communication through daily turnaround meetings.

As long as all stakeholders stick to the concept and ensure it is constantly updated, the schedule will remain flexible and, most importantly, usable. Dynamic scheduling doesn't have to be difficult; it is simply the application of a principled approach to scheduling development and management. If managers and schedulers are willing to challenge the status quo and commit to a scheduling methodology that is clearly defined from the outset and allows for improved schedule flexibility during execution, the chances of achieving a successful turnaround are infinitely higher.

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