Best Practices/**Task Definition**

Written from the perspective of best practices to build a good project
schedule and then maintain a healthy, corruption-free Project Server database.

1. Set Task Constraints

Setting task constraints includes defining flexible, inflexible and moderately flexible constraints on tasks such as "As Soon As Possible", "Must Finish On", and "Start No Earlier Than" respectively. By default, flexible constraints are applied to tasks.

PROS
- Constraints impose restrictions on the way Project Professional calculates the start and finish dates of tasks.
- When task constraints are used correctly, they can provide the extra needed control of the schedule.

CONS
- When erroneously applied, task constraints can restrict scheduling flexibility.
- A constraint may change the schedule without knowing the impacts to the rest of the schedule or why it occurred.

Recommendation

It is recommended that flexible constraints, such as "As Soon As Possible" (the default constraint type), be used for optimal scheduling flexibility. Project will calculate the start and finish dates for the tasks based on the durations and dependencies. This will allow the MS Project scheduling engine to plan tasks effectively. There will be times when a hard constraint is needed, such as when the task's date cannot be moved, but they should be used sparingly.

In addition, deadline dates should be used to indicate the "Need by" date, so that the schedule is not locked because of an inflexible constraint. When using the deadline date feature, a red flag will appear in the indicator column in Project Professional when the indicated deadline date is not achieved. The red flag is a visual indicator only and does not have any adverse effects on the schedule.

2. Set Task Assignments

Task assignments should be set at a reasonable level of detail.

PROS
- Assignments for work with less than eight hours are ideal for detailing task to-do lists.
- Change requests usually fall within this category.

CONS
- Scheduling less than eight hours per task is cumbersome to maintain and goes against PMI best practices.
- Time reporting can be extremely confusing and time consuming when expected to work on tasks with less than eight hours of planned work. A team member' task screen/ timesheet can become cluttered with an excessive amount of detailed tasks, making it difficult to find exactly which task should be reported.

Recommendation

It is recommended to follow the "8/80 Rule". This rule states tasks should not be scheduled with less than eight hours of work and no more than eighty hours of work.

If resources want to keep track of their detailed tasks, then it is recommended to utilize to-do lists within Project Web Access (PWA).

3. Identify Task "Need by" Date

The project schedule should provide a task's "Need by" date, possibly using the Notes field.
For example, it is necessary to identify how far in advance of a project's Finish date that the task must be complete. This date is commonly known as the Deadline date.

PROS

- The date by which the task needs to be completed will be easily seen in the Notes field along with other important information.
- Using the Notes field instead of an inflexible task constraint will not lock the dates and impact the schedule.

CONS

- If the Deadline date feature is not used to capture the "Need by" date, but the Notes field is used, then when the date slips beyond the deadline date, no indication of the issue will appear.
- Entering the Deadline date in the Notes field and in the Deadline date feature presents a potential for inaccuracies and/or discrepancies.
- Utilizing the Notes field does not provide for a consistent format when entering the deadline or "Need by" date (e.g. 12/15/06, Dec 15, mid Dec).

Recommendation

It is recommended to use Deadline dates to indicate the "Need by" date so that the schedule is not locked because of an inflexible constraint. When using the deadline date feature, a red flag will appear in the indicator column in Project Professional when the indicated deadline date is not achieved. The red flag is a visual indicator only and does not have any adverse effects on the schedule.

The Notes field is not recommended to be used for the "Need by" date. Providing this information in both the Notes field and Deadline date feature poses the threat for discrepancies between the two.

4. Define Task Schedule

Project Professional has a Task Type field that indicates which scheduling algorithm to use. The two values that are most frequently used are Fixed Duration and Fixed Work.

Questions that have been raised include:
- Should a default task type be set?
- What should be used for the planning of work?

The table below is called the "Magic Formula" and indicates how MS Project schedules tasks when a certain task type is specified and one of the variables changes.

In a…	If you revise units…	If you revise duration…	If you revise work…
Fixed Duration task	Work is recalculated.	Work is recalculated.	Units are recalculated.
Fixed Work task	Duration is recalculated.	Units are recalculated.	Duration is recalculated.

PROS
- Fixed Duration task types have the following advantages:
  - Fixed Duration tasks are ideal for scheduling meetings (i.e. status meeting, project milestone review or code review meeting).
  - Fixed Duration tasks can be used to plan at a higher level.

- Fixed Work task types have the following advantages:
  - Fixed Work tasks are the industry standard for scheduling work.
  - Fixed Work tasks are effort-driven by default.

CONS
- Fixed Duration task types have the following disadvantages:
  - Fixed Duration tasks are not ideal to use for tasks that have an estimated amount of work to be completed. If you have an estimated amount of work, Fixed Work should be used and that estimate should be put into the Work column.
  - Fixed Duration tasks are not ideal to use for capacity planning. Tasks overlap and regardless of the work required to complete the task, the duration is set which makes it more difficult to accurately track resource capacity.
  - Fixed Duration tasks can be effort-driven or non-effort driven which presents another potential area for inconsistencies. Adding resources (units) to a Fixed Duration, non-effort driven task will decrease the amount of work required to complete the task. Effort driven regulates calculations when you add or subtract resources assigned to the task. If you change the duration of an effort driven task, Project Server changes the work to fit the new duration.

- Fixed Work task types have the following disadvantages:
  - Work estimates must be accurately reflected in the schedule to ensure a meaningful schedule can be reported on.
  - Duration will change based on the resource(s)' availability.
  - Fixed Work is not ideal to use when the schedule is date constrained. If the schedule is date constrained (e.g. the Government imposes restrictions on when a certain activity must be completed), then Fixed Duration should be used.
  If you change the duration of an effort driven task, Project Server changes the work to fit the new duration.
- Fixed Work task types have the following disadvantages:
  - Work estimates must be accurately reflected in the schedule to ensure a meaningful schedule can be reported on.
  - Duration will change based on the resource(s)' availability.

- Fixed Work is not ideal to use when the schedule is date constrained.
  - If the schedule is date constrained (e.g. the Government imposes restrictions on when a certain activity must be completed), then Fixed Duration should be used.

Best Practices/**Task Definition**

QPM

Recommendation

It is recommended that tasks are planned using Fixed Duration, non-effort driven. Before the project is published for time entry by team members, change all Fixed Duration tasks (that are not meetings, review sessions, or date constrained) to Fixed Work. To ensure the scheduling algorithm is considered, the Gantt Chart view should contain the Task Type and Effort Driven columns. The default for task type and effort can be set in the Project Professional Tools Options feature.

Be sure to provide an accurate assessment of the work to complete the task; this estimate should come from the person doing the work. Estimates from team members should be reflected in the "Work" column of the project when Fixed Work is the task type.

5. Set Task Linkage

The following general rules wil help you keep your projects linked properly so you can see the critical path of the project:

- Summary tasks should not be linked to other tasks. Summary tasks in Project are not productive tasks but rather a visual and data summary of the tasks under them.
- Start and end milestones within each summary grouping should be used to link the tasks within.
- Level of Effort (LOE) tasks should be tied to the last milestone in the summary grouping.

PROS
- Linkages are critical to ensure tasks fit into the overall schedule.
- Linkages create a floating phase in the project schedule.

CONS
- Without a predecessor, the task will begin on the project start date, thus providing inaccurate estimates.
- Linkages can be time-consuming to ensure relationships are accurate and meaningful.

Recommendation

It is recommended to always have predecessors (and successors) at non-summary task levels to ensure no orphan tasks exist in the project. Without these dependencies set, tasks will begin on the project start date or next available working date.

Start and finish milestone tasks are recommended for linkages. It is also recommended that LOE tasks be tied to the last milestone in the project schedule. This will keep the project schedule from appearing unorganized and being difficult to manage while still accounting for these tasks.

6. Identify Milestones

A milestone marks a significant "event" (such as a hand-off point) or a turning point in the schedule. Milestones are generally tasks without associated "time", although it is possible to have a milestone that is also a task that takes time. A milestone can also be called an achievement or significant landmark, and will appear on the Gantt Chart as a diamond shape.

PROS
- Milestones provide a linking mechanism for starting and finishing tasks.
- Milestones allow project schedule phases to float and not be constrained by dates.
- Milestones allow for filtering the schedule in Project Professional.

CONS
  • Milestones can add a lot of tasks to the project schedule.

Recommendation
It is recommended that milestones be utilized in the project schedules. There should be a 'start' milestone and 'finish' milestone task for each of the summary tasks directly above the lowest level tasks. The lowest level tasks are then linked within those milestone tasks.

Any comments or requests?
Please don't hesitate to let us know!

QPM

www.qpmusa.com