

These rules have been crafted to ensure the creation of a Microsoft Project schedule that reflects dozens of best practices and experience with the nuances of Microsoft Project.

A schedule complying with these rules will:

- ◆ Reflect a well constructed WBS (Work Breakdown Structure)
- ◆ Reflect well constructed task (activity) names
- ◆ Reflect a well constructed project network diagram (activity sequencing)
- ◆ Allow the Microsoft Project calculation engine to accurately calculate:
 - ◆ Expected project duration (finish date)
 - ◆ Critical path activities
 - ◆ Project slack (total slack)
 - ◆ Task slack (free slack)

These rules ensure the creation of a well constructed schedule. They do not address the quality or completeness of the specific schedule elements including activity duration estimates. Single point estimating is assumed in these standards. They do not address the important subject of schedule contingency and do not apply Critical Chain Management techniques.

These rules are specific to a project schedule that is being used for time management alone. They do not include the best practices and techniques that are required to address:

- ◆ Resource requirements
- ◆ Effort estimates
- ◆ Team building
- ◆ Resource loading
- ◆ Resource leveling
- ◆ Cost budgeting

These rules do not address the techniques for schedule management.



1. Schedule Calendar(s)

- a. For each calendar to be used by the schedule:
 - i. Project Master Calendar: Click on Project, Project Information, see Calendar
 - ii. Task Calendars (Optional): Insert the Task Calendar field on a table on a task view to see if any override calendars are being used
 - iii. Resource Calendars (Optional): View the Entry table on the Resource Sheet view and see Base Calendar to see if any override calendars are being used
- b. ...configure the calendar with the appropriate default working hours, non-default working hours and nonworking time. Click on Tools, Change Working Time to view or alter the configuration for the various project calendars.

Note: The Microsoft default is an 8 hour day starting at 8:00 AM and ending at 5:00 PM with a 1 hour lunch period at 12:00 PM. The default is 8.00 hours per day, 40.00 hours per week and 20 days per month. While these defaults can be changed, there are a number of instances where changing this configuration will result in calculations that are inaccurate. If possible, keep the default settings.

2. Scheduling Method

On the Project Information box (click on Project, Project Information):

- a. Select the Start date of the project
- b. Schedule the project from the project start date

Note: Backward scheduling (scheduling from the project finish date) causes the tool to report the latest date possible for each task while allowing for the project to complete on the given finish date. Seldom is backward scheduling the appropriate choice.



3. WBS (Work Breakdown Structure)

IF you choose to enter the project WBS into the Microsoft Project Schedule using the Task Name field and the indent / out dent functionality...

- a. Use the indent and out dent buttons to move entries on the task name column right and left according to their level in the WBS
- b. Click on Show, Outline Level 1 and then Project, Filtered for, More Filters, Summary Tasks to confirm the first level WBS elements
- c. Click on Show, Outline Level 2 and then Project, Filtered for, More Filters, Summary Tasks to confirm second level WBS elements, and so on for each level of the WBS...
- d. Each and every WBS element should:
 - i. Be worded as a noun (often with adjectives) that describes a specific project or product deliverable, a process to be executed within the project or a classification or group of project or product deliverables (e.g. "First Draft Blueprint", or "Final Vendor Selection Criteria")
 - ii. Have no predecessors or successors (only tasks should be linked)
 - iii. Not be constrained to a date (i.e. constraint type of "as soon as possible")
 - iv. Have no resource assignments
 - v. Have one and only one of the following indented underneath them:
 1. At least two decomposed WBS elements, or,
 2. At least one task

4. Milestones

To view all of the milestones in the schedule, click on Project, Filtered for, More Filters, and Milestones.

- a. There must be a milestone named "Start Project" that has:



- i. No predecessors
- ii. No date constraint (i.e. it has a constraint type of “as soon as possible”).
- b. There must be a milestone named “Finish Project” that has:
 - i. No successors
 - ii. No date constraint (i.e. it has a constraint type of “as soon as possible”).
- c. Each and every milestone should:
 - i. Be worded to express the accomplishment of a project state (e.g. “Authorized Project Budget”, “Beta Product Ready for Shipment”)
 - ii. Have duration of 0 days
 - iii. Have no resource assignments
 - iv. Be indented so as to fall under or in between appropriate WBS elements

Note: The use of a start project and finish project milestone is best practice. The start project milestone creates a task that can be used as a predecessor for any task that has no logical predecessor. The finish project milestone creates a task that can be used as a successor for any task that has no logical successor. It is a great way to ensure that all tasks are properly linked.

5. Tasks

To view all of the tasks in the schedule, click on Project, Filtered for, and All Tasks. Each task must:

- a. Be worded as a verb / noun combination (e.g. Develop Charter, Review Specification) to express the activity and the deliverable being addressed by the task
- b. Be worded so that it is:
 - i. Unique within the entire schedule
 - ii. Understandable on its own and outside of the context of the WBS
- c. Have a validated, estimated duration which is usually expressed in days



- i. A question mark in the duration indicates that the task still has the default estimate of “1 day?” or the schedule estimates are still not finalized. Question marks should not be present in a finalized schedule as they indicated invalidated or incomplete estimates
 - ii. The duration should be short enough so that the task does not span more than one schedule review cycle (i.e. a weekly cycle). Ideally task durations are not much shorter than 5 days and not much longer than 10 days. An exception can be made for elapsed duration tasks such as “Cure Concrete” where the duration is in “edays”
- d. Be indented under the WBS element that they contribute to

6. Milestone and Task Linkage

Every task and every milestone:

- a. Must have at least one predecessor. If there is no task that should or must be done before a task in question, then the task should have “Start Project” as its predecessor
- b. Must have at least one successor. If there is no task that follows a given task in question, then the task should have “Finish Project” as its successor
- c. Should generally use only Finish-to-Start relationships. Other relationships types can be used but tend to make graphical reports confusing to analyze and may make the managing of the critical path more challenging.
- d. Should generally avoid the use of leads and lags in the relationships. Leads and lags can be used but tend to make graphical reports confusing to analyze and may make the managing of the critical path more challenging. Lags are best addressed as tasks that have no resource assignments. Treating lags as tasks exposes them clearly to management.



7. Milestone and Task Date Constraints

Every task and every milestone:

- a. Must not be constrained to a given date unless it is through the use of a “soft constraint”. Allowable constraint types (for forward scheduled plans) include ONLY:
 - i. As soon as possible
 - ii. Start no sooner than
 - iii. Finish no sooner than
- b. A task that **MUST** occur on a prescribed date range should:
 - i. Use a start no sooner than constraint to push the task forward to the anticipated start date. This will cause the schedule to report the task as planned to start on the constrained date provided the predecessor tasks are currently forecasted to finish on or before that date.
 - ii. Use a deadline to mark the date on which the task must finish. Deadlines do not interfere with the calculation of the schedule and simply provide a graphical indicator to the manager when they are not being met. Deadlines can be used safely as often as required.

8. No Recurring Tasks

No recurring tasks should be used. Check the indicator column for a graphical indicator that appears as a never-ending circle. Recurring tasks disable the software’s ability to calculate the critical path.

9. Other Best Practices

- a. Schedule must leave room for project management activities (that cannot be planned as they are on-going, repetitive or unknown)
- b. Schedule must leave room for non-productive time as resources do not work 8 fully productive hours per day
- c. Schedule should not factor in overtime. It is used as a contingency if necessary but should not be planned



- d. Schedule should responsibly address the need for schedule contingency as established through vigorous project risk management

10. Accompanying Documentation

The schedule should be accompanied by well documented:

- a. Statement of scope
- b. Product description / requirements document
- c. Project issues
- d. Planning assumptions
- e. Project constraints
- f. Identified risks

