Powerful Magic with Gantt-Charts, Microsoft Project and Excel

By Simon Harris

Microsoft are launching a new version of Microsoft Project this month (see our preview in Jan/Feb) which is sure to have a new collection of bells and whistles. But as Peter Simon and Ruth Murray-Webster pointed out in their Lucid Thought last month, the software is only part of the answer. True planning requires, as they say, more than pretty pictures. It's a view that Simon Harris shares. He is an independent consultant and says he can't always justify the expense of moving to the next new bit of software. So he has put together some tips that will work with MS Project from 2003 onwards, although users of 2007 may find some of the menu items have moved!

MS Project is a wilful piece of software – but it is powerful. Wilful because it does what it wants with the data you enter, wilful because it doesn't tell you what it changes, when it makes the change or why. Its powerful because of its intrinsic capabilities, but also its ability to link externally. About the biggest insult I can throw at it is that it is a pretty picture (Gantt chart) generator, ie, it can't think for you.

Generating Gantt charts and recalculating consistent resource views and cash–flow numbers is also the biggest service it provides.

Often people repeat take the snobbish line that 'having Microsoft Project (MSP) doesn't make you a project manager'. Quite right. However being even a part–time project manager makes having a command of MSP useful.

What follows in the space available is a tour of some salient and advanced points, not a detailed tutorial. Combining even a rudimentary understanding MSP's interface with some practice on an abstract example comprised of tasks 't1' to t10' followed by application of your new familiarity with a real project's data is within anyone's grasp (and for 'real' data save your work under a succession of names to aid reversion to earlier steps).

THE BASICS OF ANTI-MSP SNOBBERY
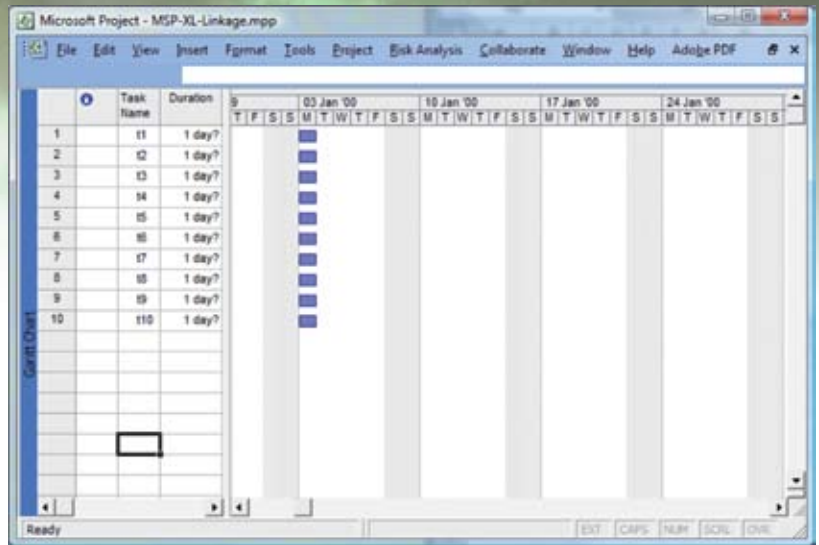
The first and basic rule is to define project scope using the decomposition technique and yellow sticky notes stuck on the wall by the team to express project scope. (I covered this in a previous column in December 2009). First-steps include getting the customer to derive productscope and then getting the technicians for workscope. Now: open MSP and type the task list into the Gantt view's 'Name' column, and just that.

More sophisticated users may start in 'Tools|Options|Calendar' to set the working day, 'Tools|Options|Schedule' to enter the default units of duration and work, 'Tools|Options|View' for the default date format and 'Project|Project information' to set the project start date.

STEP TWO
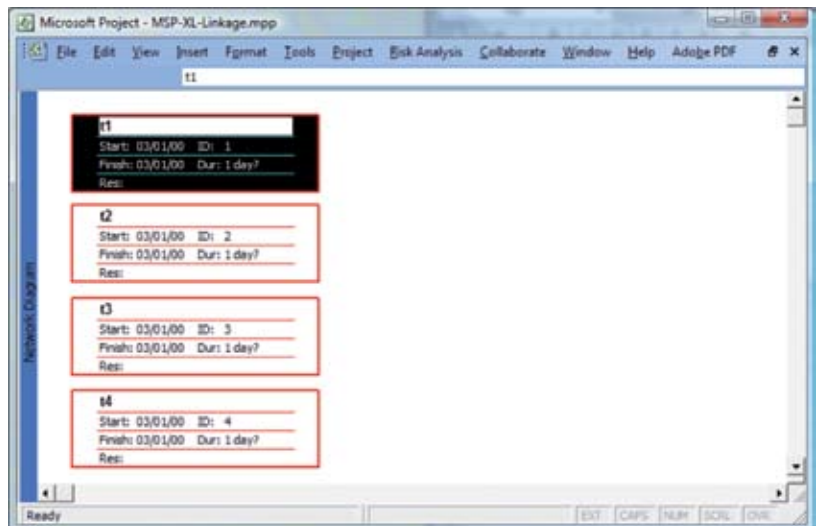
The second step is to return to the yellow stickies and, with the technicians, place the stickies on the wall into precedence order. Return to MSP, select 'View|Network Diagram' where all the previously entered tasks will be listed.

Now click-n-drag between tasks to establish finish-to-start dependencies and double-click on the link to change to SS/ SF/ or FF.
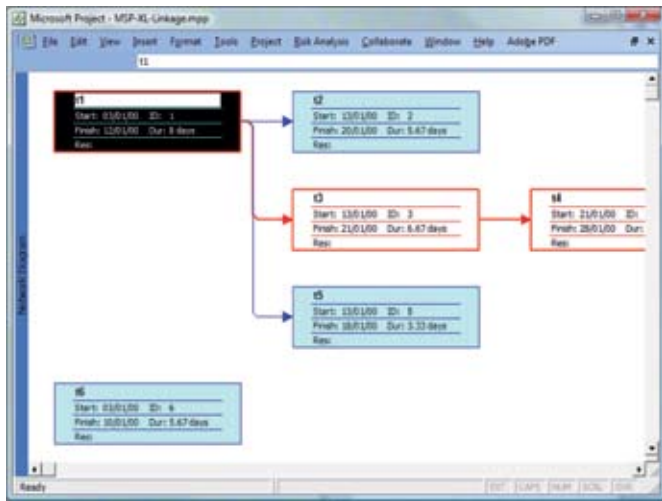

Many small tweaks to MSP settings may help with this task: I like to right click the background and select 'Layout|Allow manual box layout'.
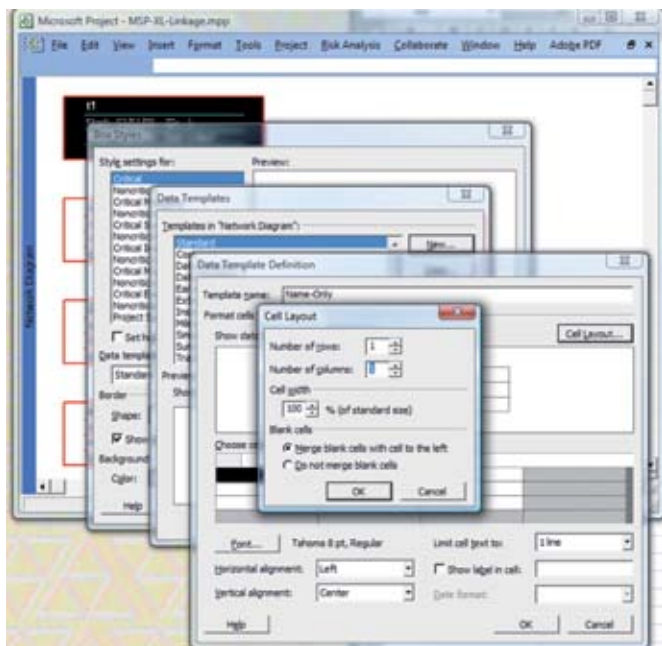

Another is to right-click and select 'Layout|Box Styles|More Templates|New (and assign a template name)|Cell Layout'. Set the layout to 1 x 1 and under 'Choose Cells' type or select 'Name' and OK, then 'Style settings for: (Critical and Noncritical)' set the 'Data template' to the new 'template name' and 'Ok'. Now a great many more tasks fit on screen at one time. When links are established, change the style settings to a more descriptive box style, eg, the Earned Value format.
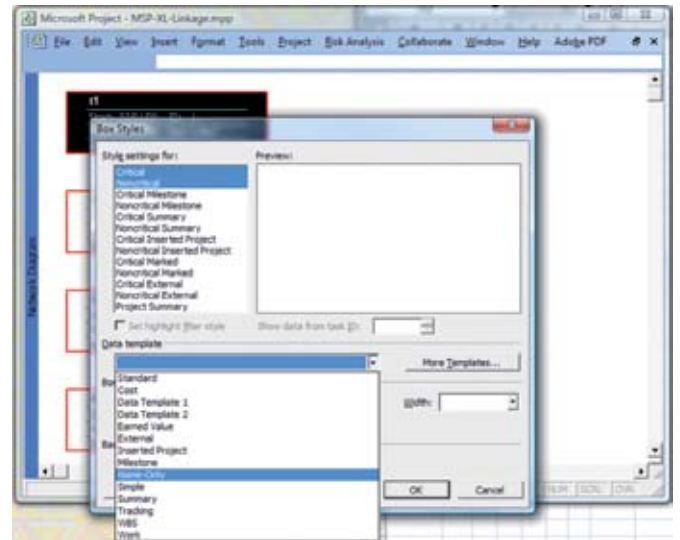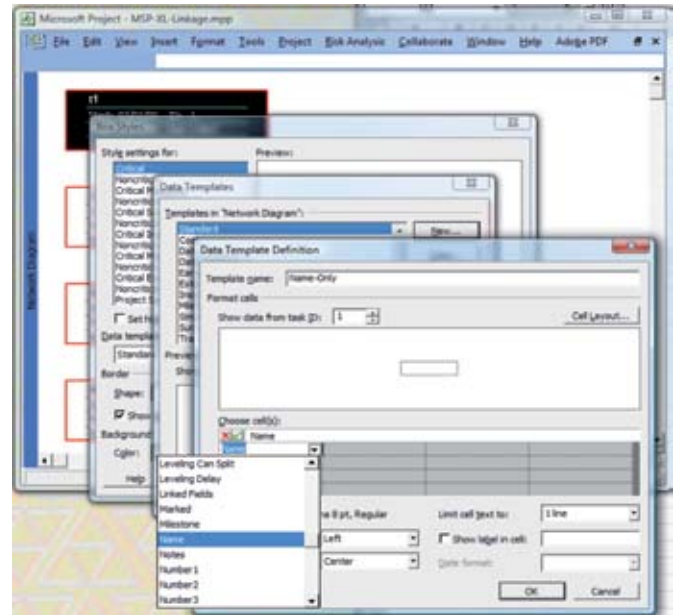
DO ESTIMATING IN EXCEL
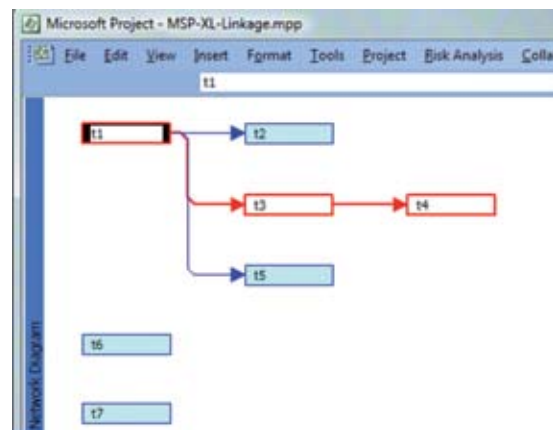
The third step is something of a wonder! In a previous column I covered using three-point estimates. MSP knows the rudiments of how to use three-point estimates but that isn't 'the way to go'. Instead open Excel (XL), copy the column of task names from MSP and paste into XL and set-out the next six columns as O-Optimistic duration, P-Pessimistic, ML-Most Likely, E-Expected, 'SD-Standard Deviation' and Budgeted. Set each row's E-Expected to the formulae $(P+O+((ML\star4)/6))$, each SD to $((P-O)/6)$ and budgeted to $(E+SD)$ for a circa 80% confidence level or $(E+SD\star2)$ for circa 95% confidence. You might recognise these as the PERT formulae.

Now the clever bit is to copy the whole set of values from the Budgeted column in XL, return to MSP, highlight the duration cells and 'Paste|Special|Link|Text Data'. Now amendments made to tune the estimates will automatically update the MSP duration. Once understood, this principle can be extended in many ways. For example by extracting the calendar dates from MSP's calculation of the critical path schedule to create reporting schemes in XL. By linking back each task's slack for comparisons with the SD much of what MonteCarlo packages do can be pragmatically approximated.

REDUCING OR USING THE WILFULNESS

Much of the wilfulness of MSP relates to the defaults and the 'normal' start point. MSP 's default is that tasks are effort-driven. Most people start entry with tasks and durations. Indeed, MSP expects the duration in the absence of effort and resource data and responds as expected UNTIL task duration, effort and resource are assigned. Now, silently, a new factor is introduced: 'task type (fixed units or fixed duration or fixed work)' to decide how to recalculate effort, duration or resource percentage to maintain the originally entered product of Duration ★ Resources = Effort or Effort / Resources = Work or Work%.

Once understood, the behaviour is useful. Above I suggested pasting a link from XL based on duration. A better mechanism might be that you use XL to calculate resources (people and provision) per task, paste-link into MSP and allow MSP to derive duration based on actual assignments and task type.

FURTHER EXPLORATION

Much of the 'oh my! What did it just do?' experience, prevents people from using a fraction of MSPs capabilities; eg, to calculate cumulative costs (even if only in hours) or capabilities beyond that such as Earned Value! (be sure to set tasks to 'Physical % Complete' if using EV!)
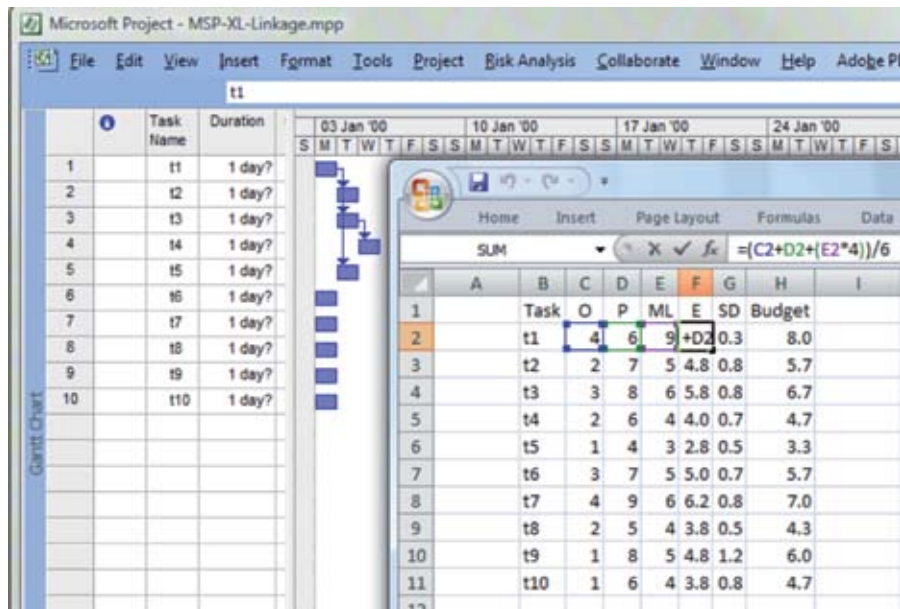
Good luck exploring, and feel free to contact me if you would like more help.

About the Author

Simon Harris, PMP, CGEIT is a trainer, speaker and consultant on governance of change via project planning, tracking and control competencies. Simon's approach is to de-mystify project management. PM's place is as a normal part of any manager's abilities (like driving a car). Simon provides the PM specialists with industrial strength tools and insights into 'common sense' approaches to project management.
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