Master-Class in Managing Projects with Microsoft® Project and Earned Value

by Simon Harris, IPMA-D, PMP®, CGEIT, Ex PRINCE2® examiner

Editor's Note: Simon is a frequent contributor to *asapm's* newsletter and website, and this article introduces a free self-study workshop that he has developed, and is offering for free for personal use (and modest terms for pre-agreed commercial use - arrangement details are within the .pdf). Simon is giving us his full four-day instructor led class course materials. Simon is from the UK, thus some of his favoured spelling and terminology may be less familiar to you.☺
Thank you Simon!

Microsoft Project (MSPJ) is a tough thing to use well! When well used it's a great asset. Many is the time I've sworn in exasperation at the screen as something I didn't understand, nor could see happen wrecked the last hour's work. So I taught myself to use it, and then later when I had to show a client how to use it I wrote a training course for others in the situation I had been in.

I explain my start point for the course by analogy with the instruction book that comes with a new car. It tells how to turn on the lights, the right pressure for the tires but nothing remotely useful for teaching me how to go and get my weekly groceries (well it explains how to open the boot – Stacy, that's 'trunk' to you folks, OK? – as if I needed that piece of advice!). Every thousand page book on MSPJ I've looked at is at about that same level.

I run projects and to do them, I use flip-charts, yellow sticky notes, breakdown structures, critical path analysis, Monte Carlo simulations, body language, Earned Value Management, one-to-one meetings, stakeholder mapping and MSPJ. Each has their place. MSPJ can not, repeat CANNOT plan a project, but it is very handy for calculating the budgeted cost of the work scheduled (BCWS) for the third time based on the boss' latest update on who is or isn't available to join the team. (BCWS is also known as PV depending on whether you use the vocabulary of MSPJ or PMBoK® [1] Guide).

Planning Is a Non-Software Activity

As I've written for *asapm* before: Planning is a social activity in which groups of people develop a shared understanding of an endpoint. The first social group is the 'sponsoring, left with the results' group who must do their best to say what impact on yesterday's way of doing business is wanted and its acceptance criteria plus their risk attitude. The second group must do their best to translate that "What" into tasks that define "How" in a way that meets acceptance criteria.

"How" includes tasks, dependencies, materials needed and effort to be expended. Often functional managers are a third group who constrain who will do the tasks when. Properly deployed, MSPJ is a great documentation aid: it is purpose-built to record task-over-time, dependency between tasks and resource-available-over-time. It is also a great calculation engine. All that power is a killer if unleashed without comprehension of the interacting nature of project variables of time cost scope risk quality resources.

---
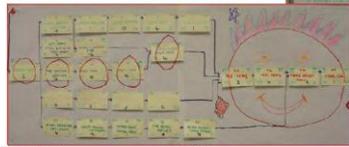
[1] PMP and PMBOK are registered marks of Project Management Institute in the USA and other countries.

Course Construction

To put the course together I first of all structured it around the idea that planning is people based. E.g.: Scope is built in workshops, with white-boards and then transcribed to the software. I also took a fairly complex case-study as the core to create a baseline for. Then I lead you through tracking it over 7 months of "things not going to plan." Examples include events such as when people claim progress they haven't made, then quit. Or when, people need to be borrowed from task to task; and when finance changes the charge rates between budget approval and resource acquisition: I hope this lot sounds familiar as I would hate to think its only me that gets 'messy projects'! ☺

The Whole Story (minus the details) First

The course's journey actually runs a couple of 'projects' from start to end. The first has 5 tasks (T1-T5) and one resource (Simon) at one charge rate (£10/hr); it takes only about 20 steps to set-up, track to completion and examine the EV. It's the whole journey but in microcosm and ignoring hundreds of options. Even that is not something we can embark upon until the basics of what the elements of screen layout are or how the data related to time, task and resource are held internally. Nor is it realistic to 'manage' this project before knowing how to select a task, move a task, add a task (or resource). A later session even covers replacing a resource who is half-way through work on various tasks with a replacement person or changing the resources calendar from European weekends to Middle Eastern (I'm writing this while waiting for a flight out of Riyadh KSA).

Here is a brief Course overview as a full description of the contents would be quiet long. The course is a demanding four days when instructor led. Since the whole course is available as a freebie for personal development it is easier for me if you just download it to see its full contents. My only restriction is if you use it for commercial purposes then tell me and we will negotiate a deal (and I'll supply animated slides, exercise templates and more).this story:

Eight Chapters

There are eight chapters: The first covers the conceptual model or internal 'sparse' data structure of tasks linked to resources and timeline, and the external one of screen rows and columns. It doesn't start out light weight as I also cover assigning repetitive tasks as macros to buttons on a new toolbar (setting my preferred

project view of weeks numbered from 1 is a pain. I like it on a one-click toolbar button!). We also cover how to laser into the help-system for indicator and field reference guide and discuss so much power needs standards to be followed if it isn't to create problems.
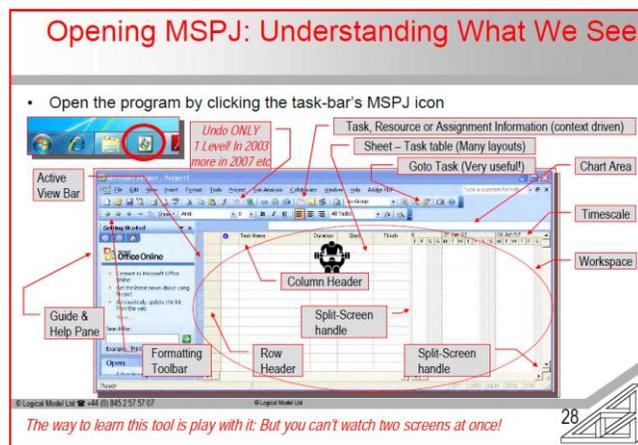
With the context established, each chapter settles into a routine of the non-software elements of the various stages of baseline creating and maintenance being briefly covered before a "how to do it in MSPJ" walks you step by step with hundreds of screen shots (animated .ppt slides build the picture, the .pdf numbers the steps). Chapter two does the three slide 20 step overview before chapter three works through project set-up with calendars, working hours and entry of workshop outputs of product breakdown structure and work breakdown. In this session we learn how to move, delete and insert tasks and use outlining codes.

Two Chapters To Build the Schedule

The next two chapters transcribe those workshop sessions that share understanding of task dependencies on each other and on available resources into the network diagram (which thankfully MSPJ has stopped mislabelling as a PERT chart), resource sheets and task assignments. As well as handling things like Hammock tasks that MSPJ isn't naturally built for but can cope with very easily.

We take the first deep dive in to the horrors of effort driven versus fixed duration, units and work to discover it isn't so scary once understood. As long as you DON'T use MSPJ as designed but use it as projects should be planned it works fine! The resource angle deals with directly assigned resources or using resource pools. At this point our case-study is ready for resource levelling.

After (exhaustively) exploring what happens when the (effort/ resource) = duration relationship is triggered by an update to each of the terms for each of the task types we use manual and automated levelling. For a long time I shied clear of even basics such as adding resources to the picture drawing use I made, so using auto-levelling was a revelation when I discovered it actually works well. I guess 15 or 20 years of MSPJ not being industrial strength meant I had missed the point at which it had changed from joke to capable. Having calculated critical path including showing one Monte-Carlo add-in, updated the display to show float (slack) and balanced everything now we can baseline. At this point Earned Value is instantly available without extra effort – WOW! All there is left to do now is track the project through trials and tribulations, change everything that 'yesterday' we intended to do 'tomorrow' but isn't now going to happen as planned because of the way the project is turning out.

Actually That "All" Is A Big-Deal

It takes a lot of step, step, step to guide you through the realities of updates across various task-types that generate status reports with some veracity (in this case I know they are right because I checked it all in a spreadsheet –MSPJ's only wrinkle is it can't handle fractions of a percent of entered Physical % Complete). With mastery of the contents you won't need to check your project's results separately in a spreadsheet. We mention, if not exhaustively analyse all the built-in reports. Since many views can also be used as reports we also cover how you can explore (and tailor) everything yourself.

Towards the end we investigate some useful capabilities like running the estimating database in Excel™ and DDE linking it to MSPJ's effort column where the scheduling engine uses resources and calendars to determine dates which are DDE linked back to the Excel (and also simple import/ export of various things like EV or the WBS from spreadsheets and text files). Its rather satisfying to add another 1,000 meters of cable installation to a warehouse lighting system and see the effort figures rise by 14 staff hours and the duration for the team change from ending Friday to Monday.☺

I Left Stuff Out

I haven't covered projects with sub-projects, nor using Project Server, nor MS Access, nor writing VBA from scratch, nor setting up RAG indicators, nor using web-access. Since my copy of MSPJ is paid out of my small company's pocket it is version 2003. Many organisations don't upgrade just because MS changes the year number on the box. 2003 is in my opinion as smart as later versions, hasn't been dumbed down, has the macro recorder (hurrah) and doesn't get side-tracked into 'pretty printing' frippery and the instructions are upward compatible.

IMHO you get the best MSPJ course I've seen and if for self-development you get it for free - I hope you agree that it is worth your time to take a look. If you have positive comments, suggestions for improvements or find errors please let me know, feel free to pass the link on to others, feel free to ask about consulting and instructor led events – thanks and best regards.

How To Get A Copy of "Master-Class in Managing Projects with Microsoft® Project and Earned Value"

To download the Master-Class (pdf format) visit http://www.logicalmodel.net and register an ID which then gives free access to the Down-Loads section and just help-yourself.

About the Author

Simon Harris, PMP®, CGEIT MOR, P2, IPMA-D speaks, consults, mentors and trains on governance of change.

Simon helps client's boards with ownership of benefits enablement from "light-bulb" to harvesting.

Simon helps PMs match controls to project uncertainty, complexity and board risk appetite.

He can be contacted at Simon@Logical-Model.Net and at +44 77 68 215 335.

Editor's note: Simon is also nearing completion of a book, **PRINCE2 For Real**, to be published soon. Written with the same combination of deep insights and freewheeling irreverence as this article, a quick look at his draft shows this to be a good one!