



A Motion Picture...

Matt Danby discusses the benefits of **producing dynamic project schedules** compared to static, non-logic linked project schedules.

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Someone once said to me 'Are you here to produce another picture for us?'. Not quite...

Static schedules (or programmes) are created when activities are drawn on the schedule and produce 'fixed bars' with no logic links.

Dynamic schedules are produced when activities are logic linked, and all relationships between tasks have been correctly modelled, and the number of constraints are minimised to the contracted completion or key dates.

The Nature of Projects

Projects of all natures, Construction, Civil or Infrastructure, typically experience changes during the lifespan of the project.

Therefore, to keep an accurate and realistic schedule up to date, changes must be made to the schedule to allow the project team to accurately report on key dates and progress achieved.

Uses of Static Schedules

Static schedules do have their uses, such as high-level schedules where few activities are required or only limited or no interdependencies between activities.

Problems with Static Schedules

The key issue with static schedules is the level of effort required to update a programme in the event of a change.

Any bar/activity requiring a change needs to be manually moved and the rest of the sequence of activities checked for any further movement that may be required.

Multiply this task by 20 changes and you're looking at a lengthy process.

Some people might say at this point that static schedules are quicker to produce in the short term. Yes, I suppose they are. However, the time-saving and foresight that a dynamic schedule will give you will outweigh the initial additional time spent producing a dynamic schedule.

Benefits of Dynamic Schedules

The key benefit of producing and using a dynamic schedule is the time-saving capabilities it offers during the project.

The ability to make changes to a dynamic schedule and model the effects of other scenarios provides a quicker, more realistic and accurate representation of events taking place on site in comparison to a manually updated static schedule.

To make a change in a dynamic schedule only the activity being altered has to be manually changed, for example a change in start date. Then, once you have made the necessary change, you can re-schedule the programme and see the results immediately as the programming software will simply use the pre-determined logic already set when producing the dynamic schedule. The software will also automatically highlight any changes that have been made as a consequence of the change.



Other key benefits of a dynamic schedule include;

- **Critical path and float** – a dynamic schedule by default will allow you to establish the critical path and amount of float for each activity. When used as a management tool this information will assist the control of the works.
- **Foresight and planning** – producing a logic-linked schedule forces the creator to critically analyse the sequence of activities and the interdependencies from the outset. This activity can be carried out collaboratively with the wider project team and will help focus everyone's mind on the goals of the project.
- **Time Saving During the Project** – during the lifecycle of the project the Project Manager is unlikely to have the ability to spend time manually changing activities and checking the remaining sequence of activities for any further changes. Doing so will most likely result in errors being made, items being missed that could be critical or just a long period of time wasted that could have been better spent elsewhere. Whereas, using a dynamic schedule, where the logic has already been set, results in any changes being automatically rescheduled giving the Project Manager an instant update.
- **Producing Progress Updates** – updating progress on a dynamic schedule and re-scheduling the programme once complete can provide the project team and Client with a quick and accurate representation of how the works are progressing.

Using Dynamic Schedules

If you do not intend to keep the programme up to date, many of the benefits of a dynamic schedule will be lost.

Therefore, the key input to the success of a dynamic schedule is its ability to be kept up to date easily by the Project Manager / Planner.

The ease of impacting the effects of events happening on site, such as changes, delays, disruption, etc. shows the main benefit of using dynamic schedules.

There are a multitude of benefits of producing dynamic schedules from the outset as part of your tender submission. Time spent early on during the tender phase by your pre-construction or bid team may identify resourcing or sequencing issues that would have later arisen on site and caused you delays.

The inclusion of a dynamic schedule as part of your tender submission also shows to the Client that you have considered the sequencing and interdependencies of the works required and will give them confidence that they are using a competent contractor.

Conclusion;

1. Spend time as a project team creating logic linked dynamic schedules. Analyse the programme when it's produced, test it for different scenarios.
2. Keep it up to date. An out of date programme will do no one any favours. You will not know where you are against your contract programme. Your Client will lose confidence in you and key dates or completion dates may be missed.
3. Producing an effective and realistic dynamic schedule from the outset will save the time of your key project team members. Time that can be used elsewhere managing yours and your Client's interests to improve the financial performance of both organisations.

Should you require any assistance with the preparation of your programmes, MBM has a team of planners trained across a multitude of software packages with industry knowledge and experience across many sectors so please get in touch.