Dependency Management: are we there yet?

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Overview

This whitepaper explores some of the challenges in dependency management. Readers will take away recommendations as to how they can go about improving dependency management within their projects and programs

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Introduction

Dependencies are not a new concept; we have all been dealing with them in our daily lives, at home and at work. Projects are no exception – it is a fact that to complete some activities, we rely on a string of other activities, people and projects to finish before we can commence. For the purpose of this article, we will focus on dependencies within IT related projects.

Defining Dependencies

A dependency can be explained as being the relationship between products or activities associated with a project[1]. They can be modelled in tools in several forms such as the common Finish to Start (FS), Start to Start (SS), and Finish to Finish (FF) but at the end of the day, a dependency simply highlights reliant activities for a particular activity.

A dependency is usually uni-directional (one cannot function without outside help) where an interdependency is present when two parties depend on one another.[2]

To break dependencies down even further, they can be classified as being internal or external. A Project Manager (PM) has limited control of dependencies internal to the project/program and little to no control of those external to the project/program[1].

Start thinking about where there are dependencies between Work Packages
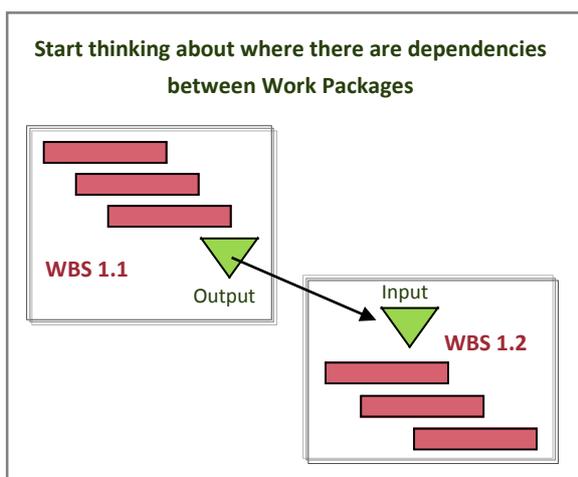
So what's the Problem?

If one asks a Project Manager about dependencies, more often than not, they will get a response that the PM is aware of their project's dependencies and are managing them.

If this is in fact the case, why do dependencies and interdependencies continue to be a pain point for so many projects and large scale programs? Let's look at some of the reasons that create issues amongst interdependencies.

- Dependant activities run late without consideration of the flow on effect through subsequent activities, in most cases causing delay to key project/program milestones.

- Dependencies are not clearly understood, missed or simply not tracked. Does the phrase "I'm not sure where that one came from" sound familiar?

- People who are dependent on a particular activity obtain a forecast delivery date when they plan their schedule and don't check back with the owner to see if the date has moved following months of project progress.

- There is often a lack of communication and visibility for dependencies amongst the project team.

As you can see, it is not just one single point of failure but a chain of events that can lead to poor dependency management.

It is one thing to identify a dependency, another to truly manage it

A recipe for Success

Like all processes, there is not one set way to guarantee success. After looking over a number of projects and programs, successful dependency management can be seen to rely heavily on the following:

1. **Standard Approach**: It is very important to clearly define the approach that the project/program will adopt and ensure the team are adequately trained. This ensures that all parties including the PMs, Project Office (PO), Planners/Schedulers and committees are aware of the measures and expectations in place.

2. **Clear definition**: It needs to be made very clear exactly how a dependency is defined in the context of the project/program. Without clear guidelines, there is the risk control of the dependencies may be lost due to anything and everything being identified as a dependency. "Nice to have" or "possible dependencies" cloud the issue and should be parked to the side – only identify those dependencies with a clear purpose and requirement.

3. **Ownership**: It is asking for trouble identifying dependencies (even more so for interdependencies) without allocating an owner. The role of the owner is to be able to explain the dependency to peers, report on the progress of the dependency and if a delay emerges from the delivering activity, the owner will be asked to assess the flow on impact to the project/program.

4. **Communication**: Where would the world be without communication? An important part of dependency management is for the owners of delivering and receiving activities to discuss the dependency. This ensures the status is clearly understood and the impact of delay is articulated and managed.

5. **Tracking and Visibility**: It is one thing to identify a dependency, another to truly manage it. In order to manage a dependency, it should be tracked and the forecast completion date made visible to the recipient. The tracking is not a performance measurement tool for PMs, it is simply an early warning technique which forms part of the scheduling for the project/program. PMs track progress of project activities, they should focus more on dependencies.

6. **Support**: Like all processes within a project environment, if the process does not have the support from the Project Board or Steering Committee, Project Management and Team Leads of the project/program, successful dependency management will

be elusive. Reports and corrective action plans that are generated as part of the dependency management process should be expected by the PMs and more importantly, acted upon where required.

The Role of the Project Office

Involvement with a project/PO assumes that dependencies are being tracked either at the portfolio level (for independent projects) or Program level (for aligned projects). For either arrangement, the aim for the PO should be to produce clear, concise visibility of dependencies for the various layers of management and relevant parties. For simplicity the following will be based on a PO setup to service a large program of work, keep in mind that the fundamentals remain the same no matter the application.

Where would the world be without communication?

Reporting

Think back to a project status meeting you have attended, chances are, the chair of the meeting had a project status report that had been created by the PO and this formed the basis of the agenda for the meeting. Risks, Issues, Change Requests, Schedule deliverables and milestones, Budget etc. There is one element missing from this list of agenda items: Dependencies. Although it is not yet recognised by many, the tracking of dependencies and their visibility in project status meetings is just as important as reviewing some of the risks and issues.

In order for the PO to be effective in the management of dependencies, exception reporting is the key. All dependencies need not be discussed in every status meeting, just where a dependency exceeds agreed delivery timeframes. The Project Management team must be made aware so that corrective actions can be formulated and acted upon.

It is up to the PO, along with the PM to raise the visibility of dependencies within the project. Reporting is an obvious and effective way but in order to generate the reporting, dependencies must be tracked and made visible to the PO. A schedule is generally seen as the best way to track dependencies but they may be tracked by other means. When the reports are presented, they must be backed up with action from the Project Management team where required. This will highlight poorly managed dependencies and begin to shape the behaviour of team members with respect to dependencies.

Standardising an Approach

As we move through the various levels of dependencies and reporting, it becomes more and more clear just how important it is to have a clear dependency management approach or standard defined.

It is important to remember that even if the project follows an internal or external methodology based on PRINCE2 or PMI's PMBOK, successful dependency management is not guaranteed.

The best way for dependencies to become visible within a project is to map them in a schedule. Each project/program should have a standardised approach defined. A subset of this should be dedicated to Dependency Management.

In respect to the structure of the schedule, it should be decided if the preferred approach is to actually link dependencies or if dependency dates are passed through but not linked. Depending on the application and maturity of the project, both approaches can be very effective.

There are various methods for tracking dependencies. The aim of the project should be to ensure an appropriate method is clearly defined and that the project team is thoroughly trained in how to use the process.

Conclusion

Dependency Management seems to be one of the components of a project or program that people see as being trivial and easy to do. In practical terms it probably is but unfortunately, many projects and larger programs seem to be adversely impacted by poor dependency management.

Dependency Management seems to suffer mostly from poor communication, a lack of knowledge, accountability and consequence.

By clearly defining an approach for managing dependencies and emphasising ownership, dependencies should become more visible. By utilising exception reporting and raising the awareness through project status meetings, the management of dependencies should increase.

So now you can see common downfalls of dependency management within projects. Make sure it does not happen to your project, create an approach, increase visibility, add accountability and get everyone talking… No excuses just do it!

References

OGC. (2009). Managing Successful Programmes with PRINCE2

The difference between dependence independence and interdependence?, http://wiki.answers.com/Q/The_difference_betwe en_dependence_independence_and_interdepende nce