



White Paper 2021-04

How to Approach Project Portfolio Management

Project portfolio management is a concern for organisations that manage a set of projects sharing common resources. This situation requires a specific portfolio-level approach. However, different grades of inter-dependencies between projects will call for different approaches. This White Paper exposes the specifics of portfolio management and what are the best ways to manage this situation.

What is a project portfolio and what the different grades of interdependencies are

Portfolio vs program

A project portfolio is not the same as a program. In a program the set of projects all contribute to a single goal, while in a portfolio the set of projects each aim at a different objective, but they share certain resources and constraints. For example, developing a new aircraft of defence system is often referred to as a program, composed of multiple projects or sub-programs that have to converge toward a single objective; however, an owner or a contractor manages a portfolio of projects for various purposes or on various locations that share certain human and equipment resources.

In reality, there is some grey area between the concept of portfolio and program, when projects in a portfolio become very inter-dependent.

Considering a set of projects as a portfolio is only meaningful when several projects use shared resources or are interlinked in a way that may greatly influence their individual performance, so that they cannot be considered on their own.

Projects in a portfolio are often a very different stages of development, from concept to delivery.

Different grades of interdependencies in portfolios

Interdependencies between projects in a portfolio can be of different natures and of various grades of intensity.

The basic interdependencies between projects relate to certain rare resources, that have limited capacity and cannot be easily duplicated or sourced in an alternative manner. These key resources are often specialised disciplines or trades; or specialised equipment. Common examples are certain expert resources, specific qualification laboratories or analysis equipment, or specialised construction or transportation equipment.

The basic interdependency is when a limited number of scarce resources is required on one single occasion to progress a project. A higher grade of interdependency exists when many scarce shared resources will have to be used multiple times across several projects during their execution, creating multiple possible pinch points and waiting stages.

Different approaches to project portfolio management

Approaches to portfolio management will greatly depend on the grade of interdependency.

For limited interdependency (limited number of well identified scarce resources used across the portfolio), developing and updating a specific schedule for those scarce resources will generally be sufficient. Individual projects will then be informed about the actual availability of those scarce resources for their project and will organise themselves accordingly around those constraints. This approach is used for example by contractors using their own specific specialised construction equipment (ex: offshore construction vessels, specific heavy lift transportation ships, high load or specialised cranes,

etc); or by owners having portfolios of maintenance activities requiring specialised equipment and skills across a portfolio of assets (ex: maintenance and overhaul program for powerplants or turbines). The development and maintenance of the schedule for those scarce resources is a very strategic activity as it will drive a significant part of the business performance. For contractors and owners alike, it is also generally kept confidential as it is an essential part of competitiveness and would be an interesting information for competitors.

For higher grades of interdependency there is no other solution than to develop an integrated schedule of the entire portfolio, covering all projects and identifying specifically the activities linked to the shared scarce resources and using resourcing techniques to optimise their usage over time. Such a schedule does not need to have the same level of detail as each individual project schedule but needs to model the constraints and linkages linked to the scarce resource. The development and maintenance of that integrated schedule, although it can be alleviated by modern technology, is a substantial investment. However, in situations of high interdependency it is absolutely mandatory. Without such an approach utilisation “on demand” of the scarce resources can be expected to be significantly sub-optimal leading to much poorer performance of the organisation as a whole.

When scarce resources are needed across various projects, proper project portfolio management can have a substantial impact on the overall performance of projects and the organisation.

Useful portfolio management rules

Irrespective of the level of portfolio interdependency, there are certain rules that appear to apply. They are derived from the critical chain theory.

First, it is much better to have a portfolio that is very diverse in terms of project progress stages. A portfolio that only consists of projects at similar development stages will necessarily create more problems as projects will seek to mobilise similar resources at the same time, and therefore will be necessarily more interdependent and constrained.

Second, the best way to enhance individual project performance and lead time in a portfolio is to strictly limit the start of new projects, based on the critical capacity of the organisation. Beyond a certain inflow of new projects, overall performance will diminish dramatically across the portfolio. Therefore, there needs to be a strong governance that limits or at least regulates this inflow of new projects and associated delivery schedules.

Finally, the throughput of the portfolio will generally be limited by a critical resource. Once it has been properly identified through analysis, it needs to be managed to that it is used to its maximum capacity. In real life, much capacity can be gained just by making sure the critical resource is utilised on what it is unavoidable for, and that all non-critical activities are distributed elsewhere. Therefore, it is good practice to nominate a manager specifically in charge of making sure this critical resource is properly maintained, available, productive and that it is used to its maximum capacity with minimum downtime. Debottlenecking approaches are often recommended to draw the maximum throughput out of the critical resource.

Implementing adequate and adapted portfolio governance

The more interdependent projects are in a portfolio, the stronger the overall coordination and governance needs to be with respect to the individual project managers.

For low grades of interdependence, portfolio governance can be limited to maintaining a critical resources schedule, designating managers in charge of optimising performance of those critical resources, and a high-level coordination of resource availability for individual projects.

For higher interdependency grades, a much stronger portfolio-level governance must be implemented.

A portfolio director needs to be nominated with a higher authority on the individual projects (typically, authority over the Project Managers) as individual projects will have

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to account much more for portfolio-level constraints. Individual projects should use a standard breakdown structure and schedule structure so that information can be combined at the portfolio level. Common tools must be imposed (typically a server-based schedule system that allows to have all projects' data in a single location and combine them, and powerful BI tools across the portfolio).

Summary

When scarce resources are needed across various projects, proper project portfolio management can have a substantial impact on the overall performance of projects and the organisation. It is important to understand the grade of interdependency – how portfolio level issues may affect individual projects' performance – as it will inform what is the adequate portfolio-level governance, tools and processes. Solutions are different for low and high interdependency. In all cases a proper grasp of portfolio-level issues is required to effectively drive the entire organisation performance.



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