Portfolio Management Guide

MITP
v5.1

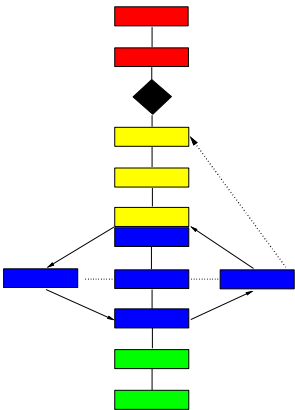Document Number MICG1PFO

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Allturn Group International B.V.
Groenendal 7c
5405 AS Uden (NB) The Netherlands
Email: Info@AllturnGroup.com

Phone: 0031 (0) 6 20 35 67 51

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PREFACE About This Document

When projects are somehow related they form a portfolio. This document describes how to manage a portfolio of projects.

For information about the MITP life cycle, the key techniques, and the support techniques, see the MITP Handbook. A glossary of terms may be found at the back of the MITP Handbook

Who Should Read This Document

Project portfolios are usually managed by someone one step above a Project Manager. This document is for these Portfolio Managers, sometimes referred to as project executives.

How to Use This Document

The table of contents provides a clear roadmap to the main topics outlined in this document.

ISO9000 Control Information

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1 Introduction to Portfolio Management

A portfolio of projects refers to a group of projects which are associated and interdependent upon each other. The dependence between projects may be because they:

- Share common resources
- Are interdependent on activities between projects
- Are all performed by a single supplier for a single client
- Have more than one of these elements.

Subtopics
1.1   Levels of Schedules
1.2   The Role of the Portfolio Manager
1.3   Schedule Management Roles and Responsibilities
1.4   Reporting
1.5   Identification
1.6   Sample Projects

1.1   *Levels of Schedules*

Most large projects have levels of schedules that may reflect project organization to some degree. Generally, each schedule level will reflect a level of project management.

The Project Manager or Executive is responsible for the overall project schedule which includes management of:
- Client-designated events and intervals
- High visibility communications
- Status reviews and summary report roll-ups.

On large projects, Subsystem or Subproject Managers schedules may be required. These schedules are:
- Segmented views of events and intervals
- Reviewed at this level.

Cross-Functional Managers are required in very large projects who manage across schedules to:
- Determine key interdependencies of activities and tasks
- Develop and manage critical path
- Resolve and analyse schedule issues
- Network summaries and reports.

Technical Project Leaders manage the day-to-day activities of both large and small projects. The primary schedule activities includes managing the:
- Needs of each technical work unit (their own)
- Cost plan or work package performance measurement plan
- Detailed schedules
- Assessment of individual unit progress.

Of course if the project is smaller, you may end up doing schedule management both at the management and leader level.

1.2   The Role of the Portfolio Manager

If a set of projects form a portfolio then it is probable that they will suffer a number of conflicts where one project is delayed because of one of the other projects. This may be because there is insufficient resource for all the projects or because a deliverable from one project is required before a second project can be progressed. This situation is likely to be exacerbated when the individual projects are being performed by separate Project Managers for separate clients. When this is the case Project Managers will see their project as being the most important and will not want to release resources, say, for the good of another project.

As a Portfolio Manager, you must analyse the project interdependencies in the light of the priorities of the various clients, establish where bottlenecks may occur, and then to put in place the appropriate mitigating actions. The actions you recommend will be dictated by circumstance and therefore it is impossible to list them all here but the decision must be a balanced business decision that will optimize the performance of all of the projects in the portfolio. You strive to deliver the best possible result to as many of the clients as possible while maximizing the profits of the business owning the projects.

Therefore, irrespective of any specific situation you must prioritize the projects within your portfolio. The criteria for this prioritization will again depend on the specifics of the situation but may be set by:
- Client requirements and priorities
- Required delivery dates of projects
- Relative financial penalties for failure
- Order of dependencies between projects
- Legislation.

You will have a broader view of priorities than any one individual Project Manager, and will be better placed to make the decisions that affect the whole group of projects. When you take a decision, you must inform all the projects managers of that decision so that they may then plan their own projects around that decision.

Above all else, you are responsible for:
- Establishing priorities between the projects in your portfolio
- Resolving conflicts between projects
- Communicating with the Project Managers.

and for these reasons you must be:
- A good communicator
  since you must listen to the needs of the various project managers and understand their requirements while at the same time informing Project Managers and possibly line managers (see below) of the perceived priorities and decisions that you have taken.

- A senior person within the company
  since you must be seen to have clout and may need to call on other senior members of the company on a frequent and informal basis.

- An experienced Project Manager
  since you must be able to talk to project personnel in their own language and to be able to demonstrate your understanding of the tools and techniques used by the Project Managers.

It must be emphasized at this point that you are not responsible for the day-to-day management of the individual projects: this is the job of the Project Managers. You are responsible for resolving conflicts between projects and Project Managers, for setting priorities, and for coordinating projects.

1.3   Schedule Management Roles and Responsibilities

In smaller projects, the Project Manager or project leader assumes all roles in schedule management. However, in the larger projects, where the project organization is divided into smaller projects under the direction of a Project Manager, division of roles is necessary to provide for the volumes of information collected and managed. The following division of responsibility among the project team management is recommended.

1.3.1 Project Manager

The Project Manager has ultimate responsibility for the schedule and communication of that schedule to the client. This communication with the client will include:

- Soliciting client agreement to schedule baseline
- Notification to client of schedule deviations
- Enforcement of agreed to schedule baseline
- Negotiation with client (and project team) for changes to the schedule.

The Project Manager has the following schedule activities:

- Schedule development:
    - Determine priority of schedule
    - Set variance thresholds for each schedule level
    - Establish communication methods for interorganization dependencies
    - Develop problem escalation procedure.
- Operation:
    - Verify commitment to schedule baseline
    - Monitor progress
    - Corrections as required
    - Communicate schedule changes and actions.

1.3.2 Technical and Project Leaders

The Technical and Project Leaders have the day-to-day responsibility for handling the project activities. These individuals will have first hand information regarding schedule activity. In addition, some of the project technical task assignments will be the direct responsibility of these Technical Leaders.

The Technical and Project Leaders have responsibility for the following schedule activities:

- Schedule development:
    - Produce detail schedules that meet project milestones
    - Anticipate problems and develop contingency plans.
- Operation:
    - Report and explain status weekly or monthly
    - Respond to changes as directed by the Project Manager.

1.3.3 Subproject Manager

The Subproject Manager may be present on a large project where management layering is required. The Subproject Manager performs many of the same activities as the Project Manager, with more emphasis on specific functional areas of development.

1.3.4 Cross-Functional Project Manager

Project administration is often provided by either the cross-system Project Manager or a project leader who handles the network schedule responsibility. The primary function for this individual is to ensure schedule integrity on a large project, managing cross-schedule relationships and dependencies. The cross-functional Project Manager also handles team-to-team negotiations regarding schedule impacts and resource sharing.

The cross-functional Project Manager has responsibility for the following schedule activities:

- Schedule management:
    - Provide reporting tools
    - Update schedules
    - Implement tracking and reporting process and procedures
    - Implement supplier schedule reporting process and procedures
    - Verify schedule and cost correlate
    - Provide schedule process training for all managers.
- Operation:
    - Inspect schedules
    - Track status of all activity and milestones
    - Detect and identify problems and issues
    - Coordinate and monitor corrective actions and alternatives
    - Determine alternatives through schedule risk analysis
    - Maintain schedule baseline.

1.4   Reporting

You must report at a level senior enough to allow you to resolve the problems within your projects. Thus, if all the projects within a portfolio are all owned by a single business then you will naturally report to the business manager of that business. If, however, the projects are owned by two or more businesses, or divisions, within the company then you must report at the director level where the reporting lines of the various business managers meet

1.5 Identification

When a project has been identified it should then be determined as to whether it has shared resources with other projects, and if so it should then be managed with them as a portfolio.

Initially, the project may not have such dependencies, but later other projects could be identified that will share resources. In this case the trigger will be the new project, but portfolio management will then commence in the existing project retrospectively. Obviously, as projects are completed they will drop from the portfolio.

1.6 Sample Projects

1.6.1 Projects Driven By End Date

If a construction company was involved in a number of building projects including the construction of an Olympic Stadium for the next Olympic Games, this latter project must be completed before the Games start. To this end, resource from one of the other projects may be diverted onto the Olympic project to ensure that it is completed on time.

Similarly, the setting up of the stands for an exhibition, for example, the Ideal Home Exhibition, is driven by end date and will take priority over other projects.

1.6.2 Projects Driven By Legislation

If the Government announces a new tax then the companies involved need to put in place changes in their accounting and IT organizations to facilitate the collection of that tax. This is likely to divert resources from internal projects.

These projects also illustrate projects that are connected by their use of common resources.

1.6.3 Projects Driven By Financial Penalties

Although it is unpleasant to contemplate failure it is possible that one of the projects within a portfolio could have severe penalties associated with late delivery. If this were the case then it is probable that this project would be given priority over other Contracts with less onerous terms and conditions.

1.6.4 Projects Driven By Interdependent Activities.

The construction of a modern warship involves the prime contractor in many separate contracts for the supply of the vessel, its engines, sensors and weapons. The order of delivery of the individual items and the timing of the supply of specialist contractor support for their installation are the subject of a number of complex interdependencies, for example, the surveillance radar cannot be installed until the mast is built and the cables laid to specification. Frequently the shipyard will not wish to take early delivery of

such equipment because of the difficulty of storing the items and the danger of them being damaged while in storage. Another consideration that may come into play is the possible cash flow difficulties that may result from having to pay the contractor on delivery but not being able to claim a back-to-back payment until, say, the radar is commissioned.

Thus, the Portfolio Manager of the shipbuilding project is likely to try to achieve a just-in-time process where the major subassemblies are delivered by the contractors as they are needed.

2 General Techniques

The techniques you use are similar whatever stage the projects are at. Therefore, these techniques are first explained before showing where they would be used within the project life cycle.

Subtopics
2.1   Project Office Support
2.2   Resources and Scheduling
2.3   Resource Naming
2.4   Work Breakdown Structure Naming
2.5   Activity Interdependencies
2.6   Resource Scheduling
2.7   Communicating
2.8   Resourcing
2.9   Work Breakdown Structures
2.10   Activity Interdependencies
2.11   Lines of Communication
2.12   Risks

2.1   *Project Office Support*

Just as a project needs a project office so you might need some project office support to perform the cross-project scheduling, to prepare portfolio reports, and to maintain the cross-project documentation. One of the existing projects' project offices might be able to provide this support. On the other hand, you might prefer to establish an executive program office (EPO).

2.2   *Resources and Scheduling*

You must develop processes that allow you to predict if, and when, a conflict is likely to occur. The best way to achieve this is to use a popular scheduling tool. Each individual project will be responsible for producing its own project plan and identifying the activities and resources that are required to fulfil all the deliverables. You will then take a copy of all of the individual plans and schedule them as a set of subprojects of a larger superproject.

To enable this higher level of scheduling, a set of standards needs to be defined for, and observed by, the individual projects. These standards must cover

- Resource naming
- Work breakdown structures
- Activity interdependencies.

If, for whatever reason, the projects use different tools for scheduling then you may have to establish a process for importing data from the various tools. This means defining a common data interface that can be satisfied by all the projects and then putting in place a reporting cycle, part of which is the separate extract (export) of data from the contributing projects. Ideally all the projects would use the same tool set.

Notes:
1. Most Portfolio Managers will not have the time to get down to this level of detail. You are advised to set up a resource project office to take care of these details.
2. The process for scheduling resources can also be a tool-independent activity, where you simply make use of major milestones. Moreover, using a tool to coordinate resource codes or names can often prove a hindrance.

2.3   Resource Naming

If, say, a test engineer, Simon Rollitt, is contributing to two projects then he must be identified to both of those projects by the same name. The name used may be S.ROLLITT, or SI, or SRO - the actual name used by the tool is not important: what is important is that if he is recorded as S.ROLLITT for the first project then he must be known as S.ROLLITT to the other project as well. To ensure that Simon's time is correctly scheduled by both projects it will be preferable that you establish and manage his individual calendar (which is defined within the tools). You provide the calendar to the individual projects as a template.

If the company uses a time recording system then you may also be able to extract reports from this system to assist you in predicting if a conflict is likely to occur.

Remember that resources other than human beings may cause a bottleneck. Resources such as computer time or use of specialist test equipment can also cause conflicts between two projects and where these are shared then they should also be identified within the resource plan: the availability of each resource should again be provided to the individual projects.

2.4   Work Breakdown Structure Naming

To allow cross-scheduling between projects you should employ the same type of work breakdown structure (WBS) with resources applied at the same level, for example, task, for each project. However, you must also give each project a unique identifier as a prefix to the WBS number such that task 2.02.03.04 in project 1 is not confused with task 2.02.03.04 in project 2. Where possible the prefix given should indicate to the reader what project it is associated with, so perhaps a project concerned with changes to the tax system may be prefixed with TAX, for example, TAX.2.02.03.04 while that concerned with the accounting may be prefixed ACC. When comparing projects and their requirements these prefixes are far more useful that a single letter or number such as A.2.02.03. The capabilities of the scheduling tool may limit the length of the work breakdown numbering.

2.5   Activity Interdependencies

It is possible that one project is dependent upon a deliverable from another project, for instance the roll-out of Automatic Teller Machines (ATMs) to the XYZ Building Society may depend upon successful completion of a pilot for the ABC Bank, the price of the roll-out having been calculated on the premise of there being no requirement for new development. If this were the case, the bank project will control the progress of the building society project even though they are completely separate projects for separate clients.

In this instance the bank pilot may be thought of as a master project, while the building society project can be thought of as a slave project. In setting up the plan for the building society project you must recognize its dependency on the master project and form an activity link between the two such that, when both projects are scheduled together, they will produce realistic dates for starts and ends of the building society project. Here again,

consistency in the structuring of the WBS will simplify the cross-scheduling of the two, interdependent, projects.

2.6   Resource Scheduling

It is possible for a single resource to be shared by two or more of the projects within a portfolio. Cross-scheduling the projects will help to determine whether this resource is required simultaneously by the projects and if this is the case a number of strategies are open to you to resolve the problem.

2.6.1   Adjusting Resource Availability

All scheduling packages allow the availability of resources to be defined and therefore it is possible to dictate that the resource is only available to each project for a proportion of each week. Thus it is possible to allocate a resource to one project for, say, three days a week and to another project for two days a week. The projects are then rescheduled using available resources to establish what effect the reduced availability has on each of the projects.

It is normally preferable to arrange for the resource to be available at the same time each week, say Monday, Tuesday, and Wednesday each week for one project and Thursday and Friday for the second. This allows other people working on the project to plan their own work around the time when that person, or machine, will be available.

2.6.2   Adjusting Priorities

You may decide that the best utilization of the specific resource is to appoint it full-time to one project, to complete the required work, and then to release it to the next project, again on a full-time basis. This can best be achieved by scheduling the activities in the first project with a higher priority than those in other projects so that the resource will preferentially be allocated to the first project. Using a scheduler to do this will not exclude the possibility of identifying periods when the resource is not actually required by the first project, so that one of the other projects could benefit from an early start on some tasks or activities.

2.6.3   Additional Resources

If the resource is critical to two or more projects, you must consider duplicating the resource. If this resource is a machine, another may be purchased or possibly rented for the required time. However, if the resource in question is a specific person, you must consider providing that person with an assistant to work under his or her supervision. If this latter solution is chosen, you must also make allowance within the person's schedule for training, mentoring, and checking the assistant's work.

2.7   *Communicating*

In all of the sample project listed previously assumptions are implied about priorities and decisions. You are responsible for informing all parties concerned of those decisions and priorities. By doing this, you will set the correct expectations and ensure that all the projects within the portfolio are working to an agreed overall plan.

The range of these communications will be large but at the same time determined by the nature of the projects and their mutual interdependencies. The following shows examples.

2.8   *Resourcing*

Where Simon Rollitt is required to work on the two projects you must:
- Agree with Simon's line manager the total amount of time that Simon will be made available to the portfolio of projects
- Agree with the two Project Managers requiring Simon's time:
   - The priorities of the projects
   - The apportionment of Simon's time between the projects
   - The naming convention to be used for Simon.
- Inform Simon of the relative importance of the two jobs and how he should split his time between them
- Formalize these decisions with a memo to all parties.

2.9   *Work Breakdown Structures*

You must:
- Establish a level of work breakdown that is appropriate to the work being performed by the projects
- Establish naming and numbering conventions for the WBS
- Formalize these decisions with a memo to all parties.

Note: It is probable that one project will already be established before a second comes along requiring a portfolio to be set up. If this is the case then the first project may have developed its own WBS and naming conventions. If possible this WBS should be used as a default to minimize the amount of rework required by the elder project. If this WBS is not capable of fulfilling the requirements of all projects then you should still seek to minimize the changes required by the first project.

2.10   *Activity Interdependencies*

Although there is no contract between the two projects, the first, master, project can be thought of as a supplier to the second, slave, project, as the former has to provide a deliverable which will trigger further work in the slave project. You are therefore responsible for:
- Agreeing between the projects what the deliverable is
- Agreeing the completion and acceptance criteria for the deliverable

- Agreeing a target delivery date for the deliverable
- Establishing a link between the projects on the master plan
- Setting up reporting procedures between the master and the slave
- Formalizing these decisions in a memo to all parties.

In this instance you might have to call on the client of the slave project to apprise it of the dependencies within the project to ensure that the client's expectations and appreciation of the situation are correctly set. Similarly, the account managers will also need to kept be informed of the link between the projects.

2.11   Lines of Communication

From all the above you can see that you have a duty to keep all interested parties appraised of decisions, priorities, and changes within the various projects. The formality and frequency of the communications will depend upon the complexity of the interrelationships between the separate projects but you must strive to:

- Give written notice of decisions or instructions
- Have no surprises.

The people that you communicate with on a regular basis are likely to be:

- The Project Manager of each of the projects within the portfolio
- The business manager for the business owning the projects
- the managers supplying the resources to the projects
- the clients of each of the projects
- Individuals within the project team.

2.12   Risks

When projects are interrelated, as they are within a portfolio, it is inevitable that a risk to one project might also be a risk to one or more of the other projects. The effect of the risk on the first project may be to delay the delivery of the activity upon which the second project depends, or to increase the requirement to use a critical, shared, resource. Both of these would result in a delay to the second project

Part of your responsibility is to review the risks within each of the separate projects and to consider whether they may directly, or indirectly, affect one of the other projects in the portfolio. If a risk has been identified within a project it will be documented in the risk log together with the containments and mitigations seen to be appropriate for that project. In the context of a portfolio, these actions may not be the best for the whole group of projects.

Therefore you must:

- Inform Project Managers of risks in other projects that may impact their project
- Assist in the formulation of containments or mitigations that best serve the whole portfolio
- Ensure that the progress and status of the risks are communicated between projects
- Reassess the relative priorities of projects if the risk occurs.

Note the second of these points. It is possible that a preferred containment for a risk could not be justified by a single project whereas when the whole group of projects is considered it is possible that containment is the most cost effective. If, say, the identified risk was associated with a specific resource then it may be possible, across the whole group of projects, to employ a second one of those resources to prevent the worst effects of that risk occurring.

Suppose Simon Rollitt is identified as being required by two projects but there is a risk that he will have to spend longer than estimated on the first project. In this instance you might be able to find an assistant for Simon to begin the work on the second project. This solution is affordable by two projects (the portfolio) but not necessarily by one by itself.

3   Responsibilities through the Project Life Cycle

This topic outlines the responsibilities of the Portfolio Manager during the four phases of the MITP life cycle.

Subtopics
3.1   Identifying the Project
3.2   Establishing the Project
3.3   Managing the Project
3.4   Ending the Project

3.1 Identifying the Project

When a new project is created it may not be immediately apparent that it is related to another project and thus forms part of a portfolio. Several people are likely to be able to recognize interproject dependencies. The manager of the new project should consult as many of these as possible to establish the status of the new project. The people who should be consulted in the first instance are

- Department managers
- Business managers
- Account managers
- Project managers
- Members of the project team.

If any of these people believe that the new project is related to existing projects then they should inform the Project Manager of the new project. The Project Manager must then determine the nature of the interdependency and, in consultancy with the Project Managers of the other identified projects, decide whether a portfolio should be established together with a Portfolio Manager.

If the degree of overlap is small, or there is only a single dependency then it is unlikely to be necessary to appoint a separate Portfolio Manager but, rather, the two Project Managers working together should be able to resolve their difficulties. If this plan is chosen then it will be necessary to identify an independent person to act as an arbitrator in the event that, at some later date, both projects claim top priority in their claim for some specific resource.

However, if there are sufficient interdependencies and overlap of two or more projects' requirements then a portfolio should be established and a manager appointed. Thereafter you are responsible for:

- Identifying dependencies with other projects
- Identifying common resource requirements and possible resource constraints
- Identifying risks in other projects that may affect the new project
- Liaising with the client and other managers to establish priorities and set expectations.

3.2   *Establishing the Project*

In setting up a project within a portfolio your primary responsibility is to establish the cross-project communications and to document the cross-project dependencies together with your decisions on priorities and resource allocation. This is a period when, as well as setting up the infrastructure of the project, the Project Manager must work closely with you to avoid duplication of work. The Project Manager's assumptions must also be in agreement with those being established by you.

In particular you are responsible for:
- Setting up an Executive Project Office (EPO), if one is required
- Introducing the new project to the EPO
- Establishing and publishing the priorities between the projects within the portfolio
- Establishing standards and naming conventions
- Identifying project activity dependencies, and:
    - Defining the deliverables of the dependencies
    - Defining the acceptance and completion criteria of the deliverables
    - Establishing communications across the dependencies.
- Identifying initial resource constraints and conflicts between the projects, and:
    - Apportioning the resource between the competing projects
    - Examining the case for duplication of resource across the portfolio.
- Identifying and documenting the interproject risks, and:
    - Putting in place plans for containment or mitigation actions for the affected project
    - Examining the possibility of portfolio-wide containments.
- Establishing the reporting cycle between the project and the portfolio
- Establishing the reporting cycle between the portfolio and senior management or the client
- Drawing up, or revising, the organization chart for the portfolio.

It is possible that two or more performing projects may be belatedly recognized as having resource or activity interdependencies and that they therefore form a portfolio. When this happens a portfolio manager must be appointed to retrospectively implement the actions outlined above.

3.3 Managing the Project

It is not your job to manage any of the individual projects within your portfolio. If you try to do this you will demotivate the Project Manager of the project and lose your objectivity. Further, if you do manage one of the projects then your decisions will always be questioned by the other Project Managers who will suspect that you will give preference to the project that you are managing.

Rather, you are responsible for facilitating the work of all your Project Managers. To achieve this the communications between Project Managers and yourself must be well established to ensure:

- No surprises
- Full visibility.

The division of responsibilities therefore becomes:

- Project Manager
  - Inform you of progress against dependent deliverables
  - Inform you on utilization of resources
  - Inform you of changes in scope
  - Inform you of changes in resource requirements
  - Inform you of changes in risks or risk status
  - Negotiate with you and the other Project Managers to establish priorities.
- Portfolio Manager
  - Inform Project Managers of progress against dependent deliverables
  - Inform Project Managers on availability of resources
  - Inform Project Managers of changes in scope of other projects which affect dependencies
  - Inform Project Managers of changes in risks or risk status
  - Negotiate with Project Managers to establish priorities
  - Inform senior management or the client of dependencies and risks.

3.4 Ending the Project

As each project is completed in its own right, so it removes any dependency on other projects and reduces the size of the portfolio. The Project Manager of the completing project will hold a project completion workshop and thereafter produce the project completion report. You should contribute to both the workshop and the report, concentrating on the various interdependencies and how they were handled, the resource scheduling, and the management of common risks. However, there is no requirement for a separate portfolio completion report.

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Readers Comments

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Overall, how satisfied are you with the information in this book?

Legend:
1   Very satisfied
2   Satisfied
3   Neutral
4   Dissatisfied
5   Very dissatisfied

	1	2	3	4	5
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Alturn Group International B.V.
Groenendal 7c
5405 AS Uden (NB) The Netherlands
Email: Info@AlturnGroup.com

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