

Module 6

The Project Management Process Model

Introduction

This module examines project management from a process perspective—initiating, planning, executing, controlling and closing. In a previous module we provided an overview of these processes.

Project initiation involves committing the organisation to begin a project or to continue on to the next phase of a project. Project planning entails devising and maintaining a workable scheme to accomplish the business need that the project was undertaken to address. Project execution involves coordinating people and other resources to carry out the project plans and to produce the products or deliverables of the project. Project control includes those activities and actions required to ensure that the project objectives are met on time and within budget. Project closing involves formalising acceptance of the project or phase and bringing it to an orderly end.

Upon completion of this module you will be able to:

- *define* the five processes that a project undergoes.
- *discuss* the activities in each of the five processes.
- *align* the supporting functions to the project planning processes.
- *apply* the Balanced Scorecard evaluation tool.
- *conduct* a post-project evaluation.
- *propose* the key factors for consideration when refining the project management processes in the post-project evaluation.



Outcomes



Terminology

Project management process model:

The model which comprises of five groups of key processes; initiating, planning, executing, controlling and closing.

Initiation process:

Realisation that a business need has to be fulfilled through a project. Committing an organisation to begin a project, evaluating several project options and selecting one for implementation.



Planning process:	Developing and maintaining a workable approach to accomplish the project. Identifying risks and resources, mitigating risks and securing resources.
Execution process:	Coordinating people and resources to carry out the project plans. Outputs are the products or the project deliverables.
Controlling process:	Measuring progress towards project objectives and monitoring deviation from the project plan. Taking corrective action to ensure the project conforms to quality standards mandated, stays on schedule and within budget to achieve the scope planned. Scope creep may occur and change control is part of this process.
Closing process:	Verification that all of the deliverables have been completed via a formal project closing audit. Settlement of payment and disputes with contractors. Re-assign staff in a matrix structure. Gain stakeholder and customer acceptance and approval of the final project with a formal commissioning of the project. Also applicable for a key phase of a project.
The Balanced Scorecard:	A management tool that measures organisation performance on the basis of four perspective; financial, customer, business process, and learning and growth/innovation. This differs from the traditional method of performance measurement which is heavily reliant on financial performance only.

The project management process model

So far in this course we have looked at project management in terms of functions. In this module we will examine project management from a process perspective. A process can be thought of as a series of actions directed towards a particular result. Project management is an integrative endeavour – an action, or failure to take action, in one area will usually affect other areas. The interactions may be straightforward and well-understood, or they may be subtle and uncertain. These interactions often require trade-offs among project objectives – performance in one area may be enhanced only by sacrificing performance in another.

Project processes are performed by people and generally fall into one of two major categories:

1. **Project management processes** are concerned with describing and organising the work of the project.
2. **Product-oriented processes** are concerned with specifying and creating the project product. Product-oriented processes are

typically defined by the project lifecycle and vary by application area.

Project management processes and product-oriented processes overlap and interact throughout the project. For example, the scope of the project cannot be defined in the absence of some basic understanding of how to create the product.

Project management processes can be organised into five groups of one or more processes each:

1. **Initiating processes** – recognising that a project or phase should begin and committing to do so.
2. **Planning processes** – devising and maintaining a workable scheme to accomplish the business need that the project was undertaken to address.
3. **Executing processes** – coordinating people and other resources to carry out the plan.
4. **Controlling processes** – ensuring that project objectives are met by monitoring and measuring progress and taking corrective action when necessary.
5. **Closing processes** – formalising acceptance of the project or phase and bringing it to an orderly end.

Project initiation

Project initiation is about committing an organisation to begin a project or to continue to the next phase of a project. Thus initiating processes are actions to commit to begin or end projects and project phases. The precursor to project initiation is evaluating and selecting projects for implementation.

Initiation is the process of formally recognising that a new project exists or that an existing project should continue into its next phase. This formal initiation links the project to the on-going work of the performing organisation. In some organisations, a project is not formally initiated until after completion of a feasibility study, a preliminary plan, or some other equivalent form of analysis. Some types of projects, especially internal service projects and new product development projects, are initiated informally and some limited amount of work is done in order to secure the approvals needed for formal initiation. Projects are typically authorised as a result of one or more of the following:

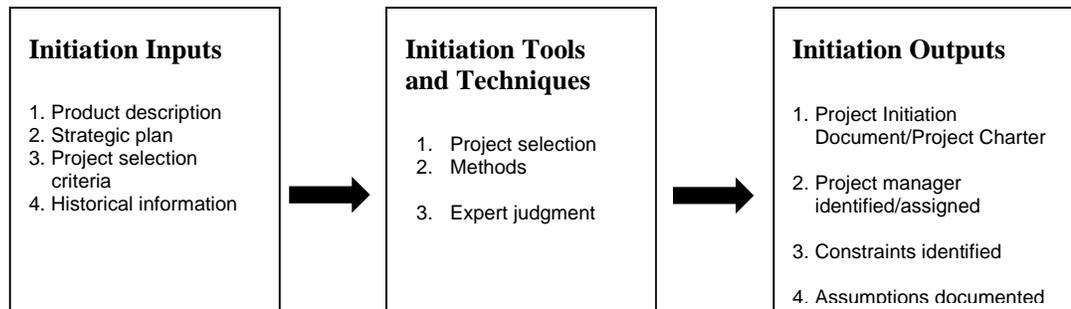
- market demand
- internal business need
- customer's specific request
- technological advancement
- legal requirement.

These stimuli may also be called problems, opportunities, or business

requirements.

The central theme of all these terms is that management generally must make a decision about how to respond.

Project Initiation Inputs, Tools and Outputs



Source: A Guide to the Project Management Body of Knowledge, Project Management Institute, 2000

Project initiation documents

Project success depends on a clear statement of purpose at the outset, captured in a form that can be reviewed and agreed upon. In many organisations, particularly government organisations, initiating a project involves defining a need or opportunity and estimating resource and budget requirements through what is known as a Project Initiation Document (PID) and obtaining senior management approval.

A Project Initiation Document (PID) is a formal statement of the proposed project. It provides a high-level business definition of the project and a high-level budget estimate to support the project initiation approval process. The business definition includes:

- project purpose and scope
- business benefits
- consequences of inaction
- project risks
- the project's impact on other business areas and/or functions
- senior management evaluation criteria met by the project.

The PID has several important functions:

- provides a high level understanding of the project and its estimated cost
- establishes an agreement between the business and systems
- provides the basis for senior management approval to proceed with detailed project planning
- provides a frame of reference for the planning stage.

The process of producing a PID, with the correct representation by

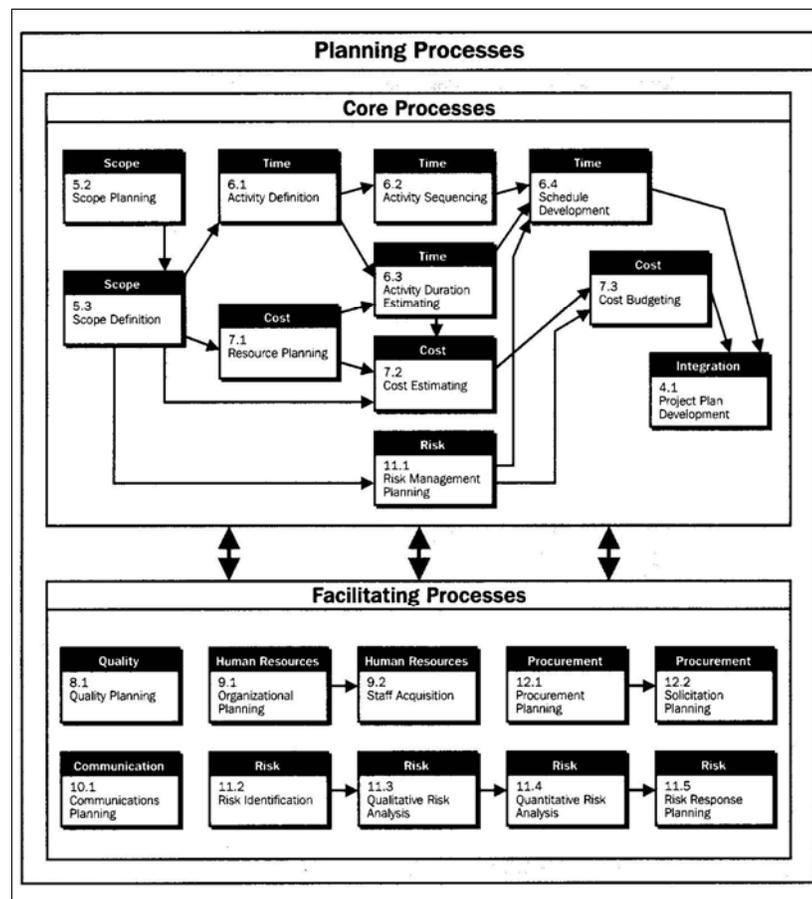
stakeholders, clarifies scope requirements, sets appropriate expectations, and garners necessary support for the work to be undertaken. The business area is responsible for preparing the PID and working with other groups such as the systems area to prepare a high-level analysis and budget estimates. The high-level analysis supports management decision making. Once approved, the PID serves as an agreement between the various business area stakeholders, the Project Steering Committee that the project will be planned and executed to meet the documented objectives. As the major deliverable of the project initiation phase, the approved PID is a reference source for the project manager.

Project planning

Project planning involves developing and maintaining a workable approach to accomplish the business need(s) the project was undertaken to address.

Planning is of major importance to a project because the project involves doing something that has not been done before. If you fail to plan...you plan to fail. As a result, there are relatively more processes in this section. However, the number of processes does not mean that project management is primarily planning - the amount of planning performed should be commensurate with the scope, risk and complexity of the project and the importance to the organisational strategic direction.

The relationships among the project planning processes are shown in the figure below.



Source: A Guide to the Project Management Body of Knowledge, Project Management Institute, 2000

These processes are subject to frequent iterations prior to completing the plan. For example, if the initial completion date is unacceptable, project resources, cost, or even scope may need to be redefined. In addition, planning is not an exact science - two different teams could generate very different plans for the same project.

Core processes

Some planning processes have clear dependencies that require them to be performed in essentially the same order on most projects. For example, activities must be defined before they can be scheduled or costed. These core planning processes may be iterated several times during any one phase of a project. They include:

- **Scope Planning** – developing a written scope statement as the basis for future project decisions.
- **Scope Definition** – subdividing the major project deliverables into smaller, more manageable components.
- **Activity Definition** – identifying the specific activities that must be performed to produce the various project deliverables.

- **Activity Sequencing** – identifying and documenting interactivity dependencies.
- **Activity Duration Estimating** – estimating the number of work periods, be needed to complete individual activities.
- **Schedule Development** – analysing activity sequences, activity durations, and resource requirements to create the project schedule.
- **Resource Planning** – determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.
- **Cost Estimating** – developing an approximation (estimate) of the costs of the resources needed to complete project activities.
- **Cost Budgeting** – allocating the overall cost estimate to individual work items.
- **Project Plan Development** – taking the results of other planning processes and putting them into a consistent, coherent document.

Facilitating processes

Interactions among the other planning processes are more dependent on the nature of the project. For example, on some projects there may be little or no identifiable risk until after most of the planning has been done and the team recognises that the cost and schedule targets are extremely aggressive and thus involve considerable risk. Although these facilitating processes are performed intermittently and as needed during project planning, they are not optional. They include:

- **Quality Planning** – identifying which quality standards are relevant to the project and determining how to satisfy them.
- **Organisational Planning** – identifying, documenting, and assigning project roles, responsibilities, and reporting relationships.
- **Staff Acquisition** – getting the human resources needed assigned to and working on the project.
- **Communications Planning** – determining the information and communications needs of the stakeholders: who needs what information, when will they need it, and how will it be given to them.
- **Risk Identification** – determining which risks are likely to affect the project and documenting the characteristics of each.
- **Risk Quantification** – evaluating risks and risk interactions to assess the range of possible project outcomes.
- **Risk Response Development** – defining enhancement steps for opportunities and responses to threats.
- **Procurement Planning** – determining what to procure and when.



- **Solicitation Planning** – documenting product requirements and identifying potential sources.

The main purpose of project plan is to guide project execution. To do this, the plan must be realistic and useful. Project plans are created to define each knowledge area as it relates to the project at that point in time. To account for changing conditions on the project and in the organisation, plans are often revised during each phase of the project life cycle.

Project charters

The major project management deliverable of the planning process is the project charter. Setting up for project planning means understanding the key components of the charter and its content requirements. The purpose of the project charter is to ensure that all project stakeholders have a clear understanding of:

- **Deliverables** – what will be produced
- **Resources** – who will produce it
- **Budget** – how much it will cost
- **Work plan** – when it will be produced.

The Project Charter for some organisations is developed in two sections – The Business Definition and the Project Charter Workbook.

The Charter's **Business Definition** provides a common vision of the project based on the information provided by the Project Initiation Document. At the preliminary planning meeting, participants from the project team and IT operational areas are invited to share their IT experience to continue to define the project's planning parameters:

- links and dependencies
- issues and constraints
- the development approach
- assumptions
- major deliverables
- project review and completion criteria.

The **Project Charter Workbook** is a living document that is updated throughout the project. The Workbook details the management plans that will control and manage the execution of the project. The management plans reflect standards and procedures for:

- risk assessment and mitigation
- internal and external project communications and expectations
- change, issue, documentation, and review management
- quality assurance
- project organisation, roles and responsibilities

- resource and work planning
- budget and procurement management
- configuration and infrastructure management.

All project team members, clients, steering committees, and sponsors, should be involved in developing and reviewing the document as set out in the project's Responsibility Matrix.

The type of project and the project management level of significance rating, determine the degree of rigour to which each section of the project charter is completed. Low significance projects may require only a minimum of comprehensiveness, while projects rated highly significant may require thorough adherence to all project management standards.

The project manager works with the business sponsor and project team through the following steps to complete the planning phase:

- Conduct a preliminary planning meeting
- Define the project
- Develop the Project Workbook
- Assemble and receive approval of the project charter.

Preliminary Planning Meetings

The objectives of the preliminary planning meeting are to define:

- **deliverables** – what will be produced?
- **resources** – who will produce it?
- **budget** – how much will it cost?
- **work plan** – when can it be produced?

All key players should attend the preliminary planning meeting.

Identifying Participants

Each stakeholder should have a knowledgeable representative at the meeting who is either empowered to make decisions, or has clear access to the person who can make decisions. First consider all the relevant organisation functions (audit, security, privacy, data administration and standards), and then identify a representative from each area. Invite specific resources identified by stakeholders. Each participant needs some background on the project so they know why they are being invited to the planning meeting and so they clearly understand who (or what) they are representing. Provide them with a copy of the Project Initiation Document if they have not already seen it.

Preliminary Planning Meeting Objectives

- Define project documentation deliverables including purpose, format, and content.



- Identify resources and include personnel, facilities, materials, equipment, tools, and supplies.
- Develop a realistic budget. Include contingency for effort, project management (520 per cent), personnel costs, and administrative overhead.

Use a work breakdown structure to depict the work plan, and identify deliverables that have inter-dependence with other projects. All key players should agree on overall planning parameters. Document the minutes of the meeting, and use these minutes to draft the Project Charter and Workbook. Review and revise as necessary to reflect information obtained during development of the Project Workbook.

Charter Business Definition

The Charter's **Business Definition** provides a common vision of the project based on information provided by the Project Initiation Document, planning analysis, and the Preliminary Planning Meeting.

The Business Definition defines:

- Purpose
- Background
- Business Benefits
- Objectives
- Scope
- Project Stakeholders
- Links and Dependencies
- Issues and Constraints
- Assumptions
- Project Approach
- Deliverables
- Milestones
- Organisational Structure, Roles and Responsibilities
- Project Review and Completion Criteria.

Project Purpose

This is a concise statement of the project's goal. See the PID.

Background

Provide a brief discussion of the business need for the project, its customers or users, their interest in its completion, and the opportunity that has made the project necessary or viable. Include relevant historical background information; why the project is needed (e.g., to address a corporate objective); who will use the product, how it will be used, and

what the expected life-span of the product will be.

Business Benefits

Document how the project deliverables will benefit the business. Business benefits may include:

- new programme delivery
- increased service delivery
- improved service delivery
- staff time saving
- operational direct dollar savings
- new corporate direction
- new technology or phase out of old technology
- enhanced accountability and reporting.

Objectives

Identify the organisation's strategic objectives supported by the project. State the strategic objectives of the programme area with regard to the project. Be succinct and focus on how the project will make a difference. Objectives should be **S.M.A.R.T:** Specific, Measurable, Attainable, Recorded, Time-Sensitive. Include Critical Success Factors.

Scope

Use the Work Breakdown Structure performed in the Planning Phase to detail project boundaries in terms of:

- project activities
- the team's role and responsibilities to the clients or users
- project goals and objectives
- the work to be undertaken
- the processes to be used
- the product(s) to be delivered.

Address any constraints that may affect the project's scope. Clarify items as beyond the scope if they could be misconstrued to be within scope.

Project Stakeholders

List internal and external project stakeholders and their interests in the project. Identify stakeholders (such as data administration, security, etc.) by organisational area to minimize the impact of personnel changes. The Business Sponsor and/or Project Manager are responsible for:

- identifying project stakeholders
- selecting the project steering committee from the available



stakeholders

- establishing a meeting schedule for the steering committee
- ensuring that all stakeholders have a copy of the approved PID.

Links and Dependencies

Describe other projects or initiatives that will affect the outcome of project deliverables or work plan. Identify other projects that depend on the output of this project, and describe the nature of the relationship.

Issues and Constraints

Describe any potential issues or constraints that could have an impact on the success of the project. List barriers to the project as well as activities and deadlines that must be met to ensure its success. Areas of constraint could include:

- budget
- resource availability
- technology
- current applications
- client willingness and readiness
- schedule
- policies
- organisation
- external factors.

Assumptions

Document all assumptions, including those used to build the Project Charter and project work plan. Typical assumptions might be:

- the use of tried and true technology versus an off-the-shelf solution
- availability of key people
- that a related project will complete its contribution to this project's work, access to funding, etc.

Note that any change in assumptions will probably result in a change to the work plan and possibly the Project Charter. Assumptions are used to develop the risk management plan.

Project Approach

The approach is a high level summary of the direction being taken and activities that will be performed to achieve the project's objectives. This includes:

- who will manage the project – business owner defined

- methodologies that will be followed
- the phases of development: Phased implementation such as implement a new business process region by region.

This will describe the approach to:

- contract management
- pilots
- training
- sub-projects, etc.

Project Deliverables

Use the work plan to summarise major project deliverables. Provide a detailed list of the project management and system development documents that will be produced to meet the project's objectives.

Milestones

Milestones mark the completion of deliverables, or phases. List high-level project milestones from the baseline work plan and their target completion dates, (or link or insert the MS Project Milestone view of the work plan). When milestones change (i.e., are approved via the Change Management process), and a new version of the work plan is developed, the milestones documented in the Project Charter must be updated. Record actual milestone completion dates for reference during Project completion.

Organisational Structure, Roles and Responsibilities

Project organisation includes:

- documenting the membership of people on the steering or advisory committees and other groups involved in the project
- defining roles, responsibilities and reporting relationships
- creating a project organisation chart to illustrate formal lines of communication and authority
- identifying all project participants and document roles.

Project Review & Completion Criteria

Develop the completion criteria with the client, stakeholders and team members early in the project so that everyone will know when the project is complete. For a long project, periodic interim project reviews should be held. Consider using an exit-survey for each project team member to provide input to the project review process, rather than leaving it all to the end of the project.

A Post-Implementation Review should be held three to six months after implementation to assess the system in full production. The project can be deemed successful when all the objectives have been met. The project can be deemed complete when:



- all tasks in the project work plan have been completed
- all project documents are complete and signed off by the project sponsor
- all project issues have been addressed
- the project evaluation has been completed
- the post implementation review has been scheduled
- all project staff and physical resource release activities have been completed
- all project-related contract finalisation activities have been completed
- all project files are completed and documentation archived.

Charter Project Workbook

The Project Workbook is the living part of the Project Charter. The project manager uses the workbook to document the management plans required to successfully see the project to completion. The degree of comprehensiveness required of the management plans developed in the Project Workbook depends on the project management level of significance rating.

The Project Workbook is developed to reflect the project's Project Management Level of Significance rating. The following management plans are standard for all types of projects:

- Work plan
- Budget Plan
- Quality Assurance
- Risk Management Plan
- Change Management Plan
- Issue Management Plan
- Communication Plan (Communication Activities Summary)
- Documentation Management Plan (Responsibility Matrix)
- Human Resource Management Plan
- Procurement Management Plan
- Configuration Management Procedures
- Infrastructure Management Procedures.

Project Charter Assembly and Approval

At this stage in the planning process detailed information has been drafted in the sections of the Project Charter. Ensure that each section of the Project Charter is complete.

1. Complete the project Charter

2. Proof the document and conduct an internal review
3. Distribute for approval

Attach a Deliverable Acceptance form and distribute the complete, proofread document to the stakeholders and/or Steering Committee members identified on the Responsibility Matrix as approvers.

Project execution

Project execution involves taking the actions necessary to ensure that activities in the project plan are completed. Thus, executing processes include coordinating people and other resources to carry out the project plans and to produce the products or the deliverables of the project.

Project Execution Knowledge Areas

Because the results of the project are produced in the executing phase, this is usually when the most resources are needed and all nine bodies of knowledge areas are used:

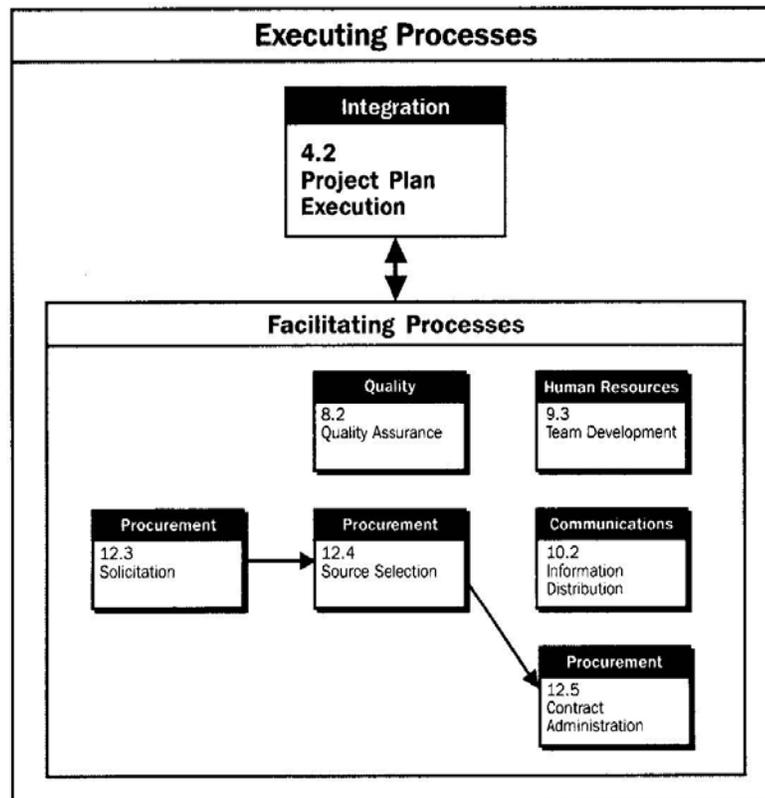
1. Integration
2. Risk
3. Time
4. Cost
5. Scope
6. Quality
7. Human Resources
8. Communications
9. Procurement.

Project Execution Processes

The executing processes include core processes and facilitating processes. The figure below illustrates how the following processes interact:

- **Project Plan Execution** – carrying out the project plan by performing the activities included therein.
- **Scope Verification** – formalising acceptance of the project scope.
- **Quality Assurance** – evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.
- **Team Development** – developing individual and group skills to enhance project performance.
- **Information Distribution** – making needed information available to project stakeholders in a timely manner.
- **Solicitation** – obtaining quotations, bids, offers, or proposals as appropriate.

- **Source Selection** – choosing from among potential sellers.
- **Contract Administration** – managing the relationship with the seller.



Source: A Guide to the Project Management Body of Knowledge, Project Management Institute, 2000

Project execution outputs

The key outputs of the project execution phase include:

- Work results
- Change requests
- Quality improvement
- Procurement items.

Project execution critical success factors

There are several factors that can contribute to project successful project execution. These include:

- Having clear goals
- Making the project fun
- Sticking to schedules
- Strong leadership

- Team development, cohesion and cooperation
- Scope confirmation and verification
- Quality assurance
- Clear communication and information dissemination
- Strong user involvement.

Project controlling processes

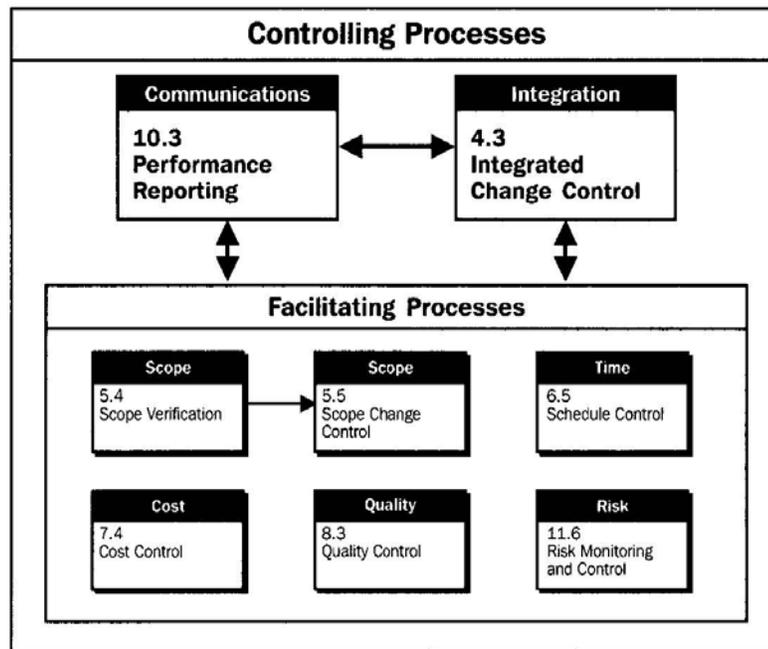
Project control is the process of measuring progress towards project objectives, monitoring deviation from the project plan, and taking corrective action to ensure the project stays on plan, on schedule and on budget. The following matrix summarises the project management knowledge areas involved in project control and the outputs from each knowledge area that contribute to project control.

Controlling Processes and Key Outputs

Project Management Knowledge Area	Control Process	Control Output or Contribution
Project Integration	Integrated Change Control	Updates to the project plan, corrective actions and lessons learned
Project Scope Management	Scope Change Control	Scope Changes
Project Time Management	Schedule Control	Schedule Updates
Project Cost Management	Cost Control	Revised cost estimates, budget updates, estimates at completion
Project Quality Management	Quality Control	Quality improvements, acceptance decisions, rework, completed checklists and process adjustments
Project Communications Management	Performance Reporting	Performance reports and change requests
Project Risk Management	Risk Response	Updates to the risk management plan

Project performance must be measured regularly to identify variances from the plan. Variances are fed into the control processes in the various knowledge areas. To the extent that significant variances are observed (those that jeopardise the project objectives), adjustments to the plan are made by repeating the appropriate project planning processes. For example, a missed activity finish date may require adjustments to the current staffing plan, reliance on overtime, or trade-offs between budget and schedule objectives. Controlling also includes taking preventive action in anticipation of possible problems.

The figure below illustrates how the various control processes interact.



Source: A Guide to the Project Management Body of Knowledge, Project Management Institute 2000

Once a project is underway it takes on a life of its own. The project manager's key responsibility is to keep the project on time and within budget. Below are some guidelines for using reports and communications that can contribute to positive project control⁸:

1. Use the project plan as the primary guide for coordinating your project
2. Consistently monitor and update the plan
3. Remember that quality communication is a key to project control
4. Monitor progress on the project against the plan on a regular basis
5. Get Involved (spend time with key team members)
6. Adapt the project schedule, budget and work plan as necessary to keep the project on track
7. Document project progress and changes and communicate them to team members.

What to monitor?

Regardless of size or complexity, the following things should be monitored on every project:

⁸Baker, S and Baker, K, (1998) *The Complete Idiot's Guide to Project Management*, Alpha Books, Simon and Schuster Macmillan Company, New York.

- Status of work being performed compared to the plan
- Volume of work being completed
- Quality of work being performed
- Costs and Expenditures compared to plan (Earned value analysis)
- Attitudes of people working on the project and other project stakeholders including customers and management (Motivation Levels)
- Cohesiveness and cooperation of team members.

The goals of monitoring and control

The tasks, milestones and budget contained in the project plan are the starting points for project coordination and control. These form the checkpoints to be used to monitor progress. Whether formal or informal, project monitoring should serve one or more of the following basic functions:

- Communication of project status and changes to other project team members
- Informing managers and other key project stakeholders about project status
- Providing the justification for making project adjustments
- Documenting current project plans compared to the original project plan.

Tools and techniques of project control

The key tools and techniques of project control are:

- Status reports
- Project Review meetings
- Variance Reports – Schedule and Cost
- Project Audits (usually for large projects only).

Project control requires knowledge of the project status, and since status is constantly changing, it is necessary to monitor the project and compare it to the plan on a constant basis. If the project plan is kept up to date to reflect project changes and adjustments, current project status can be more accurately determined at any given time. Reports are good tools for synthesising information, but informal discussions often reveal a more accurate picture of the project. Always ask the project team for suggestions when things are off track. If the project is in trouble it is important to acknowledge it and seek expert advice before it's too late.

Scope creep and change control

The original plan for a project is almost certain to be changed before the project is completed. These changes result from some primary causes:



1. Poorly defined requirements and / or poorly defined scope
2. Increase in the knowledge base or sophistication of the client
“fast pace of change”
3. A modification to the rules applying to the process of carrying out the project or to its output.

The most common changes are due to the natural tendency of the project and team members to improve the product or service. Often new demands and performance requirements become apparent to the client, which were not realised at project initiation. It is important to note that **the later the changes are made to a project, the more difficult and costly they are to complete.**

To effectively manage scope, organisations should use a formal change control or configuration management system. The purpose of a formal change control system is to:

- review all requested changes to the project
- identify all tasks impacted
- translate these impacts into project performance, cost and schedule
- evaluate the benefits and costs of the proposed changes
- identify alternatives that might accomplish the same result
- accept or reject the changes
- communicate changes to all stakeholders
- ensure the changes are properly implemented
- prepare monthly reports that summarise all changes to date and their project impacts.

The following are guidelines for effective change control procedures⁹:

1. All project contracts or agreements must include a description of how requests for a change in the project’s plan, budget, schedule, and/or deliverables, will be introduced and processed.
2. Any change in a project will be in the form of a change order or change request that will include a description of the agreed-upon change together with any changes in the plan, budget, schedule and/or deliverables that result from the change.
3. Changes must be approved, in writing, by the project sponsor as well as by an appropriate representative of senior management of the firm responsible for carrying out the project
4. The project manager must be consulted on all desired changes

⁹ Meredith, Jack R. and Mantel, Samuel J., (2000), *Project Management – A Managerial Approach*, John Wiley and Sons, New York, pp. 492-493

prior to preparation and approval of the change order. The project manager's approval, however, is not required.

5. Once the change order has been completed and approved, the project master plan should be amended to reflect the change and the change order becomes part of the master plan.

During project execution, the project manager coordinates people and other resources to carry out the work plan. Project managers continually measure and assess what is actually occurring on the project. The project manager then evaluates this measurement information to determine the impact of current progress on the entire project against the management plans. To successfully execute the project work plan, the project manager must both control and lead the project. These roles must balance each other. If emphasis is placed on one role at the expense of the other, the project manager loses credibility with the team, key players, and stakeholders. Balancing these activities requires undertaking them in parallel.

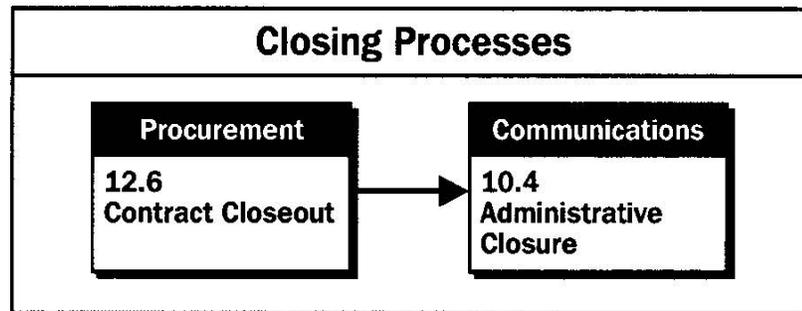
Project closing processes

The closing processes involve gaining stakeholder and customer acceptance and approval of the final product and bring the project (or a project phase) to an orderly end. This includes verifying that all of the deliverables have been completed and often includes a project audit.

It is also important to provide a smooth transition from "project status" into the normal everyday operations of the company. Most projects produce products or results that are integrated into the existing organisational structure. Other projects may result in the addition of new organisational structures to manage new products or services.

When information technology projects are cancelled before completion, it is still important to formally close them and reflect on what can be learned to improve future projects. There are two ways to cancel projects – through extinction or starvation (i.e., reducing or eliminating the financial and human resources required for project success).

During the final closing of any project, project team members should take time to communicate project results by documenting the project and sharing lessons learned. If goods or services were procured during the project, the project team must formally complete or close out all contracts.



Source: A Guide to the Project Management Body of Knowledge, Project Management Institute, 2000

The following table summarises the main knowledge areas, processes and outputs of project closing.

Project Closing Knowledge Areas, Processes and Outputs

Project Knowledge Area	Process	Outputs
Communications	Administrative Closure	Project Archives Formal Acceptance Lessons Learned
Procurement	Contract Close-out	Contract File Formal Acceptance and Closure

Administrative closure involves verifying and documenting project results to formalise stakeholders' acceptance of the product(s) of the project. It includes:

- collecting project records
- ensuring that the products meet final specifications
- analysing whether the project was successful and effective
- archiving project information for future use.

Another aspect of project closing is transferring project personnel back into other parts of the organisation.

Project wrap-up

The ending of a project is just as important as the initiation or execution. Several important steps are required to ensure a smooth and successful conclusion to the project:

1. Deliver the final results of the project
2. Address any outstanding issues
3. De-assign all resources
4. Tidy up the project environment

5. Conduct a post project evaluation.

Deliver the Final Results

The key players have been involved all along in developing the end results. However, the end results will also have to be formally introduced and accepted at the project's conclusion. The extent that this is formalised depends on the level of significance of the project. There are several ways to present the end results:

- memo
- final report
- formal meeting
- presentation
- actual use of the end results.

Most of these are discussed in detail in previous sections. Formal acceptance may be needed from:

- project sponsor
- steering committee
- stakeholders.

No matter how the end results are implemented, plan for it in advance. That is, create an implementation plan that describes:

- **Deliverables** – what will be done
- **Tasks** – how it will be done
- **Resources** – people involved
- **Effort** – time needed for each individual
- **Work plan** – when it will be done.

Address Outstanding Issues

Even when a project has been very successful, there will usually be at least a few outstanding issues. These issues are not directly related to the project, but they are issues identified as a result of the project. It is the project leader's responsibility to hand them over to the appropriate person who is responsible for them. To accomplish this, the project leader will:

- document each issue following the normal issue management process
- analyse each to determine who is responsible
- hand over each issue to person responsible (don't forget to give the person all documentation)
- follow up if necessary to make sure the issue is being addressed.



De-assign project resources

A crucial step in completing the project is releasing resources - human and other. If it does not go smoothly, people may remember the difficulties here more than the success of the project.

People

The release of people from the project can be difficult. In the case where the project is a huge success, there will be a tendency for the team to want to stay in the limelight for as long as they can. Where a project has encountered difficulties, the team may expect that they be given the opportunity to work until the end results are perfect. When a person leaves the project, make sure that:

- he/she understands the reason(s) why they are no longer needed
- the person's work is actually completed
- others still on the project no longer need the advice or support of the individual
- all documentation, including valuable working papers, are filed in the project library
- the person has advance notice of the date when he/she will be available to work on other projects
- the person's administrative manager is also aware of the individual's availability.

The last person to leave is the project leader. Many of the items listed above also apply when the project leader leaves.

Other

The following, which may have been borrowed, will have to be returned:

- facilities
- equipment
- tools.

Tidy up the Project Environment

A number of small but important items need to be looked after.

- Return all leftover supplies.
- Bring all project files (hardcopy and electronic) up to date and transfer them to a central filing or library or Project Management Office.
- Return all borrowed manuals and other documentation.
- Cancel special accounts, user id's, keys and access cards.
- Pay all invoices.
- Terminate all contracts.

Conduct a post-project evaluation

A post-project evaluation should be conducted in order to:

- compare reality to commitment
- identify lessons learned
- refine the project management process.

Comparing reality to commitment

The achievements (end results) of a project should be compared to the commitments (original/revised project proposal), keeping the following points in mind:

1. Have all of the objectives been met?
2. Are the end results within scope?
3. Was the project under/on/over budget?
4. Did the project finish ahead of/on/behind schedule?
5. Do the end results meet everyone's expectations with respect to quality?
6. Have or will the benefits be realised for the costs incurred?

Review project files to identify the reason(s) for any differences between what you expected to happen and what actually occurred.

1. Were there any change forms for change requests that were not approved?
2. Were there any issue forms for problems that affected progress?
3. Was the method of estimating accurate?
4. Were assumptions and constraints in project proposal valid? Were the objectives reasonable, and the cost/benefit analysis realistic?
5. Is there any other information to be gleaned from presentations, minutes of meetings and memos?

Summarise and document any differences and the reason(s) for them, then review the findings with the team members, the project sponsor, the working group, the key players, and the PMO. Add any additional documentation that may arise from this project to the project files.

Identify lessons learned

Depending on the nature of the discussions, plan combined, separate or individual meetings with the team members, the project sponsor, the working group, the key players, and the PMO to identify and discuss:

- what went right and why
- what went wrong and why
- areas for improvement and reason(s) why.



Summarise your conclusions and include this document in the project files.

Most systems development life cycle methodologies include a post-implementation review. One approach to post-implementation reviews is to use the 'Balanced Scorecard' approach.

The Balanced Scorecard

The Balanced Scorecard was developed by Robert S. Kaplan and David Norton of the Harvard Business School in 1992¹⁰. The Balanced Scorecard management philosophy provides a framework for defining, implementing and managing strategy at all levels of an organisation by linking objectives, initiatives, and measures to an organisation's strategy. The scorecard goes beyond traditional historical methods of measuring performance to include future value indicators to project future performance. The Balanced Scorecard philosophy boiled down to simplest terms requires an organisation to address four performance perspectives to maximise organisational performance today and also in the future. The four perspectives are:

1. **Financial perspective:** Return on investment, operating margins, economic value added measure, etc. to measure the organisation's value added.
2. **Customer perspective:** Customer satisfaction, customer retention, customer profitability, corporate citizenship, etc. to measure the quality of the organisation's outputs.
3. **Business process perspective:** New process identification, cycle times, processing cost, product/service quality, safety, environmental performance, etc. to project future operational performance.
4. **Learning and Growth/Innovation Perspective:** Investments in people, information technology and organisational procedures to prepare the organisation for success in the future.

Structuring the post implementation review and report around these four strategic areas provides a meaningful post-implementation analytical framework that both team members and managers can relate to. For more information of the balanced scorecard visit the following website:
<http://www.balancedscorecard.org>.

Refine the project management process

One of the purposes of the post-implementation review and post-project evaluation is to refine the process for next time. Here are just a few areas to consider when thinking of ways to use post evaluation feedback to improve project management:

¹⁰Kaplan, R. S. and Norton, D. (1997) *Translating Strategy Into Action - The Balanced Scorecard*, Boston, MA, HBS Press.

- what to include as standard sections in an opportunity statement, feasibility study or project proposal
- requirements and procedures for getting project approval
- criteria used to determine the project management level of significance
- the approach for planning the project, including estimating
- how to organise a project
- what else needs to be set up in the project environment
- standard procedures for change, issue and library management, and reporting
- methods for tracking a project, including performance indicators
- expectations management
- managing the day to day operations
- team work
- communication techniques
- resource de-allocation
- post evaluation
- standard forms and format and content for each.

The important questions to ask as a project manager are: “What did I learn?” “What would I do differently next time?”

Project inspiration

After managing several projects, the project management role may become somewhat routine. However, most projects contain enough twists and changes to provide a constant source of challenge. Part of your job as project manager is to make sure that the project is fun and enjoyable as well as challenging.

A good book to keep on your desktop to provide ideas and inspiration is *The Project 50 (Reinventing Work): Fifty Ways to Transform Every “Task” into a Project That Matters!* by Tom Peters¹¹. Stressing the importance of following a project from start to finish, Peters talks about creating the WOW Project (also known as the “Way Cool” project) by breaking it into four stages – create, sell, implement, and exit. He provides 50 lists of suggestions for creating WOW projects. For example, No. 24 (titled “Work on BUZZ ... all the time!”) recommends making a stir about the WOW-worthy project, showing off your team’s success

¹¹Peters, Thomas J.(September 1999), *The Project 50 (Reinventing Work): Fifty Ways to Transform Every “Task” into a Project That Matters!*, Knopf.



with buttons, mugs, and T-shirts. Shameless? Perhaps. But if the project is truly worthy, then “parading your team’s spunk is a matchless sales/marketing – not to mention morale-building – ploy”.

Module summary



Summary

In this module you learned the five phases (initiating, planning, executing, controlling and closing) in the Project Management Process Model. We started with the impetus or needs for the project. We ended with the evaluation of whether the needs are met by conducting the post-implementation review. The suggested tool for the post-implementation review is the Balanced Scorecard, so called because it measures the present (financial and customer perspectives) and gives an indication of the future (business processes, and learning and growth/innovation perspectives).

Of the five phases in the Model, the Planning phase is the longest and contains the most discussion material. This is because the Planning phase sets the foundation and tone for the Execution phase which will incur the highest costs among all the phases. The intensity of planning performed should be in accordance with the scope, risk and complexity of the project and the importance to the organisational strategic direction. This is denoted by the Level of Significance rating.

The completion of the project yields valuable lessons learnt. These should be documented and serve to refine the project processes for the next project, thus giving the next project a head start. The old saying “There is no need to re-invent the wheel” applies.

Assignment



Assignment

1. In which of the five processes in the Project Management Process Model would the following be the most critical:-
 - a. Risk assessment
 - b. Resource levelling
 - c. Quality control.

A different process may be applicable for each of the three areas stated above.

2. Construct a Balanced Scorecard for a project that you have undertaken. Apart from the four perspectives mentioned in the scorecard model proposed by Norton and Kaplan, suggest a perspective relevant to your organisation.

Assessment



Assessment

1. Why would an organization adopt a project management process model?
2. In Project Planning, define what is meant by Core Processes and Facilitating Processes and how are they related?
3. What is the Project Charter and what is its main usefulness?
4. Identify and describe the key elements of the Execution Process?

Assessment answers

1. Why would an organisation adopt a project management process model?

The project management process model provides a logical series of processes or phases of actions directed towards the successful completion of the project. Organisations are advised to adopt the model for the following reason:

Project management is an integrative endeavour involving a network of inter-connected activities. An action, or failure to take action, in one area will usually affect other areas. The process model provides the framework for the project team to systematically link and manage the project processes and activities. Hence the process model is a tool that helps to minimise the probability of the project not meeting the client's objectives.

2. In Project Planning, define what is meant by Core Processes and Facilitating Processes and how are they related?

Project planning involves developing and maintaining a workable approach to accomplish the business needs of the project. The planning processes can be divided into two types:

Core processes

Core processes are the processes that have clear dependencies that require them to be performed in essentially the same order on most projects. For example, activities must be defined before they can be scheduled or assigned resources. Core processes are the key processes that drive the project forward towards successful completion.

Facilitating processes

Interactions among the other planning processes are more dependent on the nature of the project. For example, on some projects there may be little or no identifiable risk until most of the planning has been done and the team recognises that the cost and schedule targets are extremely aggressive thus incurring considerable risk. Facilitating processes are functional in nature, for example, risk management, communication management, procurement management. Although these facilitating processes are performed intermittently and as needed during project planning, they are not optional.

Relationship between core processes and facilitating processes

The facilitating processes provide the functional support to facilitate the core processes to be carried out. While the core processes flow sequentially from one process to another, facilitating processes are active in more than one of the core processes. The following table illustrates this point.

Core Processes	Facilitating Process	Procurement Activities
Resource Planning	Procurement Planning	What resources to procure
Activity Definition		What resources to allocate to the activity
Activity Scheduling		When to procure

3. What is the Project Charter and what is its main usefulness?

The project planning process's main deliverable is the Project Charter which is a high-level document providing an overview of the project and the salient points. The purpose of the Project Charter is to ensure that all project stakeholders have a clear understanding of the:

- **Deliverables** – what will be produced to meet the client's requirements
- **Resources** – what is needed and from whom
- **Budget** – how much it will cost
- **Work plan** – what will be produced and when

The Project Charter serves as the guide for all the stakeholders to execute the planning process in accordance to the requirements of the Charter. The Charter is divided into two portions:-

The **Business Definition** provides a common vision of the project based on the information provided by the Project Initiation Document. At the preliminary planning meeting, participants from the project team and relevant operational areas are invited to share their experiences to continue to define the project's planning parameters. Thus the Business Definition provides the high-level vision of the project.

The **Project Workbook** is a living document that is updated throughout the project. The Workbook details the management plans that will control and manage the execution of the project. The management plans reflect standards and procedure. Thus the Project Workbook provides the operational part to complement the Business Definition.

4. Identify and describe the key elements of the Execution Process?

The key elements of the Project Execution Process are described below:

- **Project Plan Execution** – carrying out the project plan by performing the activities included therein.
- **Quality Assurance** – evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.
- **Team Development** – developing individual and group skills to enhance project performance.



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- **Information Distribution** – making needed information available to project stakeholders in a timely manner.
 - **Solicitation** – obtaining quotations, bids, offers, or proposals as appropriate.
 - **Source Selection** - choosing from among potential sellers.
 - **Contract Administration** – managing the relationship with the seller.

Module 7

Portfolio Management

Introduction

This module will provide an overview of Portfolio Management to provide you with an understanding of how the process can assist an organisation to establish processes to manage multiple projects, using timelines and balancing/managing resources. Organisations that use portfolio management are able to track resources across projects and to manage “surprise” projects and emergencies more effectively. The material will present several perspectives about Portfolio Management and how to apply this concept in an organisation.

At the end of this module you will be given an assignment that has several questions that will provide you with direction in developing an essay on this topic.

Upon completion of this module you will be able to:



Outcomes

- *define* Portfolio Management.
- *describe* the importance of portfolio management.
- *construct* portfolio buckets made up of the types of projects that you have identified.
- *categorise* projects in relation and in alignment to the organisation’s strategic plan.
- *develop* a matrix to prioritise projects.
- *apply* the project portfolio management tools and techniques to maximise the utilisation of resources of the organisation.



Terminology

Project portfolio management:	A portfolio is made up of a collection of individual projects undertaken by the same organisation. These individual projects, should they share the same key characteristics, can be lumped together under a common group or bucket. For example, the Innovation Bucket contains projects which require innovative applications or technology, or produce innovative products. Thus a project portfolio may contain several buckets of projects.
Independent project portfolio:	These are projects which are not directly connected to one another in the sense that should one project fail or even not start at all, the other projects within the portfolio are not affected.
Interdependent project portfolio:	These are projects within a portfolio which are closely connected to each other. The failure of any one project affects the other projects resulting in the overall failure of the entire portfolio.
Portfolio buckets:	Each bucket contains projects which share the same key characteristics which causes these projects to be lumped together within the same bucket. For example, the Operational Bucket will contain projects which are focused on improving operational performances of the organisation. These projects are usually about staff training/upgrading, automation, reducing the number of steps in a process and other core business processes.

Portfolio management

Portfolio management is the application of knowledge, skills, tools and techniques to a collection of projects to meet the organisation's strategic investment. Portfolios are made up of a collection of projects such as innovative projects where a company may want to invest in new products and services, or key operational projects to upgrade the environment to pave the way for new initiatives, or, in the case of government a programme or portfolio would be a collection of projects under one umbrella.

While project management itself focuses on “doing projects right”, portfolio management focuses on “doing the right projects”. Many organisations' existing portfolios suffer from:

- too many projects and not enough resources available to complete them
- ineffective project prioritisation
- projects cancelled without solid information

- too many minor projects in the portfolio.

The end result of this in most cases is poor performance. Projects take too long to get to market with higher than acceptable failure rates.

The purpose of portfolio management is to provide a mechanism or tool to choose the right projects for the organisation to provide maximum return on investments. In the simplest terms portfolio management involves establishing a continual and integrated process within an organisation to choose and execute new projects to focus on those that bring the highest value to the organisation with the least amount of risk.

Michael S. Dobson in *The Juggler's Guide to Managing Multiple Projects* has defined three types of project portfolios:

1. **Task Oriented Project Portfolio** – small in amount of work and time, person managing these usually has a full time job and is “juggling” multiple small projects
2. **Independent Project Portfolio** – projects not directly connected to one another, if one fails or succeeds it does not directly affect the other projects in the portfolio
3. **Interdependent Project Portfolio** – the most challenging and the one that we will focus on, projects are connected to each other and the success of the entire portfolio depends on the success of all projects under that umbrella.

In large organisations you will often find multiple interdependent portfolios. The challenge this creates is enormous. Resources for the projects are cross organisational and all projects and portfolios are normally competing for the same resources. This creates a nightmare in terms of managing the most critical asset within an organisation “resources”. For the most part organisations decide to implement portfolio management to assist them to gain control of this critical resource and understand from an organisational perspective where resources are under or over allocated. Once a cross organisation view is obtained relating to resources then key decisions can be made to more effectively manage the internal resources and to provide supporting outsourced resources where it is most appropriate.

Implementing a portfolio management process is one solution to the issues identified. In order to effectively manage portfolios it is necessary to define and implement a systematic process for selecting which projects to do in the organisation, how to integrate new projects into the process during the course of the year, and how to effectively manage the projects in progress by the use of a firm gating or go/no go process. Resource capacity analysis is another extremely important feature of any portfolio management process that must be included to reap the most rewards.

To begin the process of establishing portfolios the organisation must define the projects that are managed in the organisation. The first step is to identify the types of projects managed in the organisation, and secondly categorise these projects to determine relative size, complexity,



and the relation of the projects back to the strategic plan in the organisation. The following is an example of how an organisation might define the types of projects managed to form “portfolio buckets”:

<p>Strategic: Market Focused</p> <p>Essential to current business strategy and provides a competitive edge.</p>	<p>Innovative: Change Focused</p> <p>New products or services to support business strategy</p>
<p>Operational: Performance Focused</p> <p>Improves core processes for the long term and avoids business risks and increases performance</p>	<p>Support: Cost Focused</p> <p>Improves productivity/efficiency and saves money or reduces costs</p>

Diagram used with permission Enterprise Project Management Ltd.

The second step to establishing portfolio management is to categorise projects to determine, size, complexity and relation to the organisation’s strategic plan. The following diagram is an example of how an organisation might categorise projects:

Criteria	Category 1	Category 2	Category 3
1. Project types	<ul style="list-style-type: none"> ▪ Strategic ▪ Operational 	<ul style="list-style-type: none"> ▪ Operational ▪ Innovative 	Support projects
2. Average # of Team members	>50 – 100 person-months	>10 – 50 person-months	2–10 person-months
3. Project cost	> \$2 million	\$500,000 – \$1 million	< \$500,000
4. Planning complexity	Very high cross functional team, specialised expertise	High, cross functional team	Medium to low, functional
5. Risk	Significant	High	Medium to low
6. Stakeholder Environment	Multiple external and internal stakeholders multiple locations	Multiple customers and multiple sites	Internal customers, some external customers
7. Solution complexity	Integration, global, very high	Integration, multiple locations	No integration, local

Diagram used with permission Enterprise Project Management Ltd.

Once an organisation has defined the project types, these can become portfolios, and once the categories of projects are established and agreed to, the processes can be put in place to develop a portfolio management process for the organisation.

Portfolio management focuses on doing the right projects. The challenge is in keeping the portfolios manageable. To do this an organisation must