Module Title	121905000-KM-02, Project Integration Management
NQF Level	L05
Notional hours	40
Credit(s)	Cr4
PRIMARY OR DELEGATED QUALITY ASSURANCE FUNCTIONARY	QCTO - Quality Council for Trades and Occupations
ORIGINATOR	Services Seta
QUALIFICATION TYPE	Occupational Certificate

Learnership Registration Number: 32Q320065282405

Learnership Title: Occupational Certificate: Project Manager

KNOWLEDGE MODULE 2 - Project Integration Management

LEARNER GUIDE

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Contents

Welcome and introduction

Welcome to this learning programme.

The guide leads you through the content to be covered. You will also complete a number of class activities that will form part of your formative assessment. This gives you the opportunity to practise and explore your new skills in a safe environment. You should take the opportunity to gather as much information as you can to use during your workplace learning and self-study.

In some cases, you may be required to do research and complete the tasks in your own time.

Take notes and share information with your colleagues. Important and relevant information and skills are transferred by sharing!

Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to build an understanding of the integration of the various processes in a project

The learning will enable learners to demonstrate an understanding of:

- KM-02-KT01: Project charters (10%)
- KM-02-KT02: Project management plan (20%)
- KM-02-KT03: Direct and manage project work (20%)
- KM-02-KT04: Monitor and control project work (20%)
- KM-02-KT05: Integrated change control (20%)
- KM-02-KT06: Project close out (10%)

Outcome 1

Guidelines for Topics

KM-02-KT01: Project charters

Topic elements to be covered include:

- KT0101 Project charter development concepts and flow of data
- KT0102 The importance and benefits of a project charter
- KT0103 Project charter development inputs (Project statement of work [Business need, Project scope description, Strategic plan], Business case, Agreements, Enterprise environmental factors, Organisational process assets)
- KT0104 Project charter development tools and techniques (Expert judgement, Facilitation techniques)
- KT0105 Structure and scope of a project charter
- KT0106 Governance of a project charter

Internal Assessment Criteria and Weight

- IAC0101 Project charter concepts and the flow of data can be explained
- IAC0102 The importance and benefits of project charter can be explained
- IAC0103 Project charter documents can be identified, the application explained, evaluated for completeness, gaps identified, and improvement measures motivated

Weight: 10%

KM-02-KT01:

Project charters

Topic elements to be covered include:

1.1 Project charter development concepts and flow of data (KT0101)

1.2 The importance and benefits of a project charter (KT0102)

1.3 Project charter development inputs (Project statement of work [Business need, Project scope description, Strategic plan], Business case, Agreements, Enterprise environmental factors, Organisational process assets) (KT0103)

1.4 Project charter development tools and techniques (Expert judgement, Facilitation techniques) (KT0104)

1.5 Structure and scope of a project charter (KT0105)

1.6 Governance of a project charter (KT0106)

1.1 Project charter development concepts and flow of data (KT0101) (IAC0101)

The project charter is a document that establishes the need for a project and authorises the project manager to assign company resources to project activities. The project charter links organisational objectives with the project. The development of the project charter can be performed once or at various predefined stages of the project. The following diagram demonstrates the flow of data during the development of the project charter.
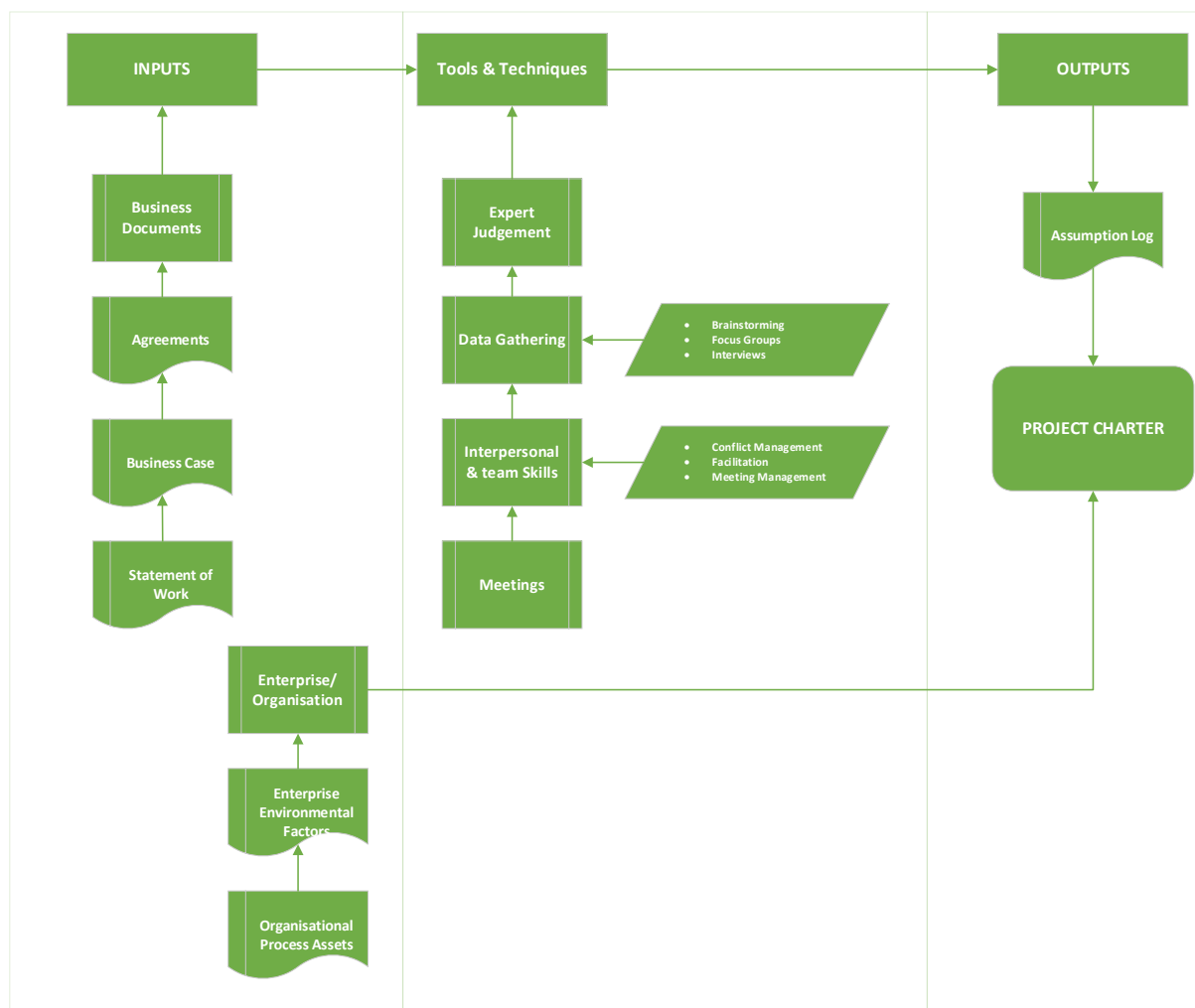
1.1.1 Determine the key requirements and needs of the project

The success of the project is directly related to effectively determining, documenting, and managing the requirements of the customer, stakeholders or sponsor. These requirements need to be analysed and recorded in detail to form a scope for measurement once the project has begun. Cost, timelines, quality checking and resource allocation all form part of the requirements.

1.1.1.1 Identify and describe the requirements or needs that must be realized to meet the objectives of the business case

The process of identifying, documenting, and managing the stakeholder requirements and needs to meet the objectives, is known as the Collect Requirements process. This process provides the basis for the project scope and can be performed once or at multiple points of the project.

Inputs required for the Collect Requirements process are:

- **Project Charter** – High-level requirements.
- **Project Management Plan** – The components include but are not limited to:
  - **Scope management plan** – Information on how the project scope will be developed.
  - **Requirements management plan** - Information on how the requirements will be collected, analysed, and documented.
  - **Stakeholder engagement plan** – Understanding the stakeholder communication requirements.
- **Project Documents** – These include but are not limited to:
  - **Assumption log** – Assumption about the stakeholders, project, product or environment.
  - **Lessons learned register** – Information on effective requirements collection techniques.
  - **Stakeholder Register** – The stakeholders that can provide the information on the requirements.
- **Business documents** - The business case describes the required, desired, and optional criteria.
- **Agreements** – These can contain information on the requirements.
- **Enterprise Environmental Factors** – Factors that can influence this process are:
  - The organisation's culture
  - Infrastructure
  - Personnel administration
  - Marketplace conditions

- **Organisational Process Assets** – These include but are not limited to:
  - Policies and procedures
  - Historical information
  - Previous projects' lessons learned repository.

1.1.1.2 Identify, describe, and record the major deliverables to deliver the requirements and needs

Project Scope Management[1] includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. Project scope management is primarily concerned with defining and controlling what is and is not included in the project.

The project management team documents these scope management decisions in the project scope management plan.

The project scope management plan is a planning tool describing how the team will:

- Define the project scope

- Develop the detailed project scope statement

- Define and develop the work breakdown structure (WBS)

- Verify the project scope, and

- Control the project scope.

The project scope management plan provides guidance on how project scope will be defined, documented, verified, managed, and controlled by the project management team. The components of a project scope management plan include:

- A process to prepare a detailed project scope statement based upon the preliminary project scope statement

- A process that enables the creation of the WBS from the detailed project scope statement, and establishes how the WBS will be maintained and approved

- A process that specifies how formal verification and acceptance of the completed project deliverables will be obtained

- A process to control how requests for changes to the detailed project scope statement will be processed. A project scope management plan is contained in, or is a subsidiary of, the project management plan. The project scope management plan can be informal and broadly framed, or formal and highly detailed, based on the needs of the project.

The preparation of a detailed project scope statement is critical to project success and builds upon the major deliverables, assumptions, and constraints that are documented during project initiation in the preliminary project scope statement.

During planning, the project scope is defined and described with greater specificity because more information about the project is known. Stakeholder needs, wants, and expectations are analysed and converted into requirements. The assumptions and constraints are analysed for completeness, with additional assumptions and constraints added as necessary.

1.1.1.3 Identify and document the major resource groupings to deliver the project requirements and needs

Major resource groupings include but are not limited to project team members, contracting groups, equipment, and materials, money, space, and time.

- Project team members – Resources involved in the project. They are not always engaged during the entire project duration and their involvement level varies.
- Contracting groups – The in-house team might lack some expertise for certain tasks and so the hiring of third parties is required.
- Equipment – Computers, monitors, servers, telephones are a requirement for any company to be able to deliver projects, and they also have an effective life-span. Is the equipment too old for the completion of the project?
- Materials – Also known as consumable resources. Some projects will not require these resources, but some may.
- Money – Money is required to purchase and maintain the other resources.
- Space – Space needs to be available to ensure that resources can deliver their tasks.

- Time – Time is offset against other resources. Additional resources can reduce the time to complete the tasks and vice versa.

1.1.1.4 Identify and document inclusions and exclusions from the project in support of project scope clarification agreements

We need to identify and record the objectives that, if all else fails, we must meet and/or those that we must meet for the project to be deemed successful.

Key Success Criteria (KSC): Project success factors

From the list of objectives, select those that are critical or key to the success of the project. These are the items that are critical to those who will benefit from the project and those with the responsibilities for judging success criteria (Managers, Customers, Members, Shareholders, Stakeholders, etc.).

The purpose of this is twofold:

- Firstly, to clarify in the minds of the project team and managers what the essential benefits are that the project will deliver and manage their *expectations*.

- Secondly, if circumstances change within the life of the project, then it is often extremely useful to see what the agreed success criteria were at the start of the project.

The project may then be replanned to ensure the KSC are met, or the KSC may be formally changed (by Senior Managers in the light of changed circumstances) and the project redefined and replanned to ensure they are met.

Assumptions

An assumption is something that we cannot establish as being true now but is likely to be/become true.

In a project, there is always a high degree of unknown. If we waited until all information were available, we would probably never start; for example, we assume that resources will be

available, and that funding will not be withdrawn. These are risks for which we can prepare contingency plans.

We need to identify, quantify, and make contingency plans to deal with project risks.

The constraints on a project are one form of risk. The project may well have specific constraints that lead to identifiable risks.

What do we mean by project risk? A risk is anything that will have a negative impact on any one or all the primary project constraints, namely time, resources, and Performance Criteria**.**

1.1.1.5 Compile and document an initial project schedule to determine the initial overall timeline of the project.

The initial project schedule consists of key project milestones e.g., key milestone chart and a Gantt chart.

- Example of a (1) milestone chart, a (2) summary schedule as a bar chart, and a (3) project schedule as a linked bar chart.

	Milestone Schedule						
Activity Identifier	Activity Description	Calendar units	Project Schedule Time Frame				
			Period 1	Period 2	Period 3	Period 4	Period 5
1.1.MB	Begin New Product Z	0	◇				
1.1.1.M1	Complete Component 1	0			◇		
1.1.2.M1	Complete Component 2	0			◇		
1.1.3.M1	Complete Integration of Components 1 & 2	0				◇	
1.1.3.MF	Finish New Product Z	0					◇

◀— Data Date

	Summary Schedule						
Activity Identifier	Activity Description	Calendar units	Project Schedule Time Frame				
			Period 1	Period 2	Period 3	Period 4	Period 5
1.1	Develop and Deliver New Product Z	120					
1.1.1	Work Package 1: Component 1	67					
1.1.2	Work Package 2: Component 2	53					
1.1.3	Work Package 3: Integrated Components 1 and 2	53					

Detailed Schedule

Activity Identifier	Activity Description	Calendar units	Project Schedule Time Frame
1.1.MB	Begin New Product Z	0	
1.1	Develop and Deliver Product Z	120	
1.1.1	Work Package 1: Component 1	67	
1.1.1.D	Design Component 1	20	
1.1.1.B	Build Component 1	33	
1.1.1.T	Test Component 1	14	
1.1.1.M1	Complete Component 1	0	
1.1.2	Work Package 2: Component 2	53	
1.1.2.D	Design Component 2	14	
1.1.2.B	Build Component 2	28	
1.1.2.T	Test Component 2	11	
1.1.2.M1	Complete Component 2	0	
1.1.3	Work Package 3: Integrated Components 1 and 2	53	
1.1.3.G	Integrate Components 1 and 2 as Product Z	14	
1.1.3.T	Complete Integration of Components 1 and 2	32	
1.1.3.M1	Test Integrated Components as Product Z	0	
1.1.3.P	Deliver Product Z	7	
1.1.3.MF	Finish New Product Z	0	

Project Schedule Time Frame: Period 1, Period 2, Period 3, Period 4, Period 5

Data Date

- Example of a Gantt chart.

PROJECT TITLE

Company Name
Project Lead

SIMPLE GANTT CHART by Vertex42.com
https://www.vertex42.com/ExcelTemplates/simple-gantt-chart.html
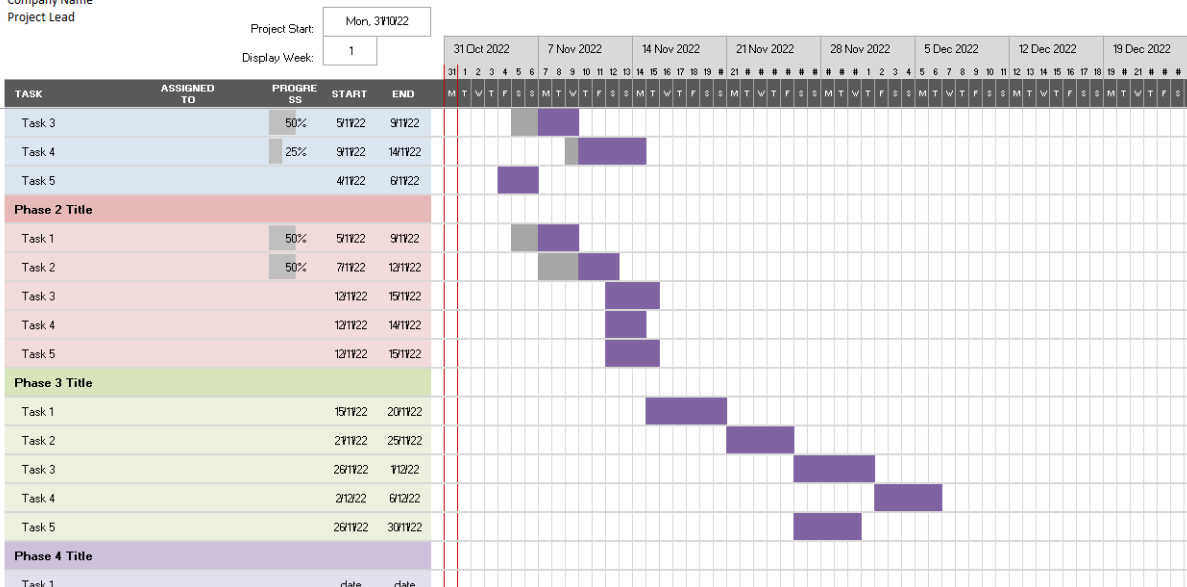
- Example of a network diagram

Example of a Project Schedule Network Diagram

Project-Management.info
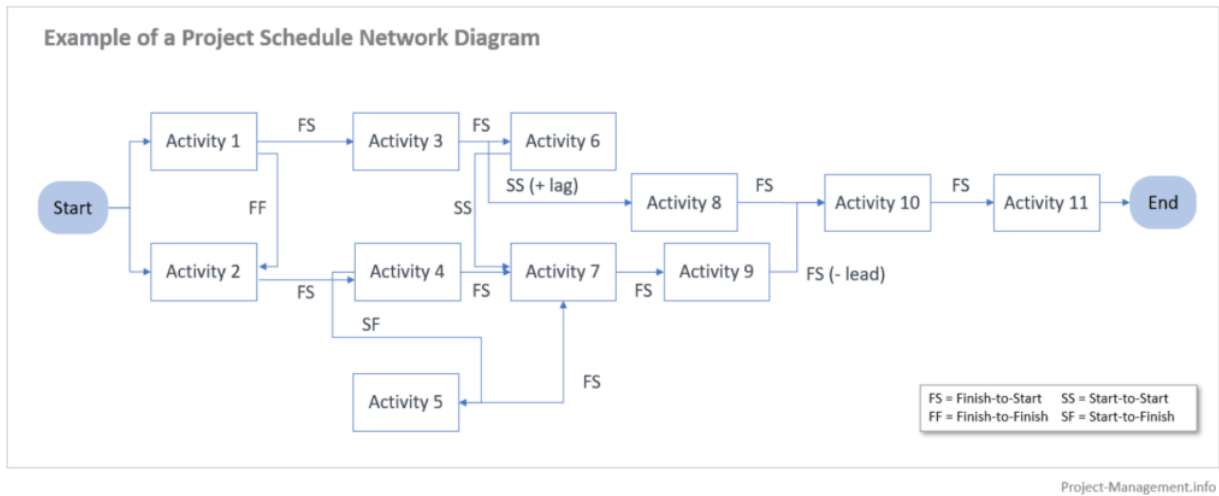
1.1.1.6 Compile and document an initial project budget using a top-down approach

Budgets are prepared to reflect the feasibility of the project. A project budget contains all the funds authorised to execute the project.

A top-down approach starts with the project total and is then broken up into smaller portions. This is typically used when you have a set budget for the project.

The key to success with a top-down budget approach is to have a clear understanding of how each of the separate tasks in the scope affects the total budget allocated to the project.

- Example of a project budget

[Company Name]		Project Budget		
INCOME		**Budget**	**Actual**	**Difference**
Internal Funding				
	Department Budget			-
	Customer Billing/Invoicing			-
	Existing Revenue Streams			-
	Other			-
	Total Internal Income	-	-	-

		Budget	Actual	Difference
External Funding/Other				
	Government Grants			-
	Foundation Grants			-
	Donations			-
	Other			-
	Total External Income	-	-	-
Total INCOME		-	-	-
EXPENSES		**Budget**	**Actual**	**Difference**
[Category Name]				
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	Subtotal	-	-	-
[Category Name]				
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-

	[itemized expense]			-
	Subtotal	-	-	-
[Category Name]				
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	[itemized expense]			-
	Subtotal	-	-	-
Total EXPENSES		-	-	-
NET (Income - Expenses)		-	-	-

Formative Activity 1: Project charter development concepts and flow of data (KT0101) (IAC0101)

Complete the following Formative Activity as per the instructions from the facilitator

1.2 The importance and benefits of a project charter (KT0102) (IAC0102)

The project charter is a document which formalises the need for a project. Without a project charter it would be very difficult to keep track of the different aspects of the project.

The project charter serves as an agreement between the project manager, sponsor, and key stakeholders. We use it to define the scope, objectives, and deliverables of the project. Very importantly, the charter also outlines the roles and responsibilities of each team member. Other benefits include:

- An approved project charter authorises the project manager to apply organisational resources to project activities.

- The project charter provides the link between the project and the organisational objectives.

- A project charter is a formal record of a project and demonstrates commitment to the project by the organisation.

- The project charter interprets and describes the reasons for undertaking the project

Formative Activity 2: The importance and benefits of a project charter (KT0102) (IAC0102)

Complete the following Formative Activity as per the instructions from the facilitator

1.3 Project charter development inputs (KT0103) (IAC0103)

The project charter should be created at the beginning of the project planning process. Only once the charter is approved by all stakeholders should the work begin. There are several inputs for the development of a project charter:

- **Business Case** – Identifies the business needs for the project and links the high-level goals of the organisation to the project.

- **Agreements** – Signatures of the project sponsors, project manager and stakeholders provide confirmation that all agree to the description, deliverables and outcomes of the project.

- **Statement of Work** – A description of the services or products which will be delivered by the project.

- **Enterprise Environmental Factors** – Industry standards, legal and regulatory constraints, marketplace conditions, organisational culture and governance and stakeholders' expectations all influence the development of the project charter.

- **Organisational Process Assets** – Policies and procedures, previous project information (lessons learned), monitoring and reporting methods and templates to be used also influence the development of the project charter.

Keep in mind that the project charter and project plan are two critical documents for any project manager. Both documents are important in their own right, but they should be developed together for the following reasons:

- It is easier to align the objectives of the two documents when they are developed at the same time.
- It helps ensure that the project stays within its scope.
- It allows the project manager to create a more accurate timeline for the project.

Formative Activity 3: Project charter development inputs (KT0103) (IAC0103)

Complete the following Formative Activity as per the instructions from the facilitator

1.4 Project charter development tools and techniques (KT0104)

Charter development tools and techniques can be broken down into four main categories:

Expert Judgement – Project managers "frequently rely on expert judgment to perform well." Expert judgment is a technique in the project planning process that refers to making a judgment based on skill, expertise, or specialized knowledge in a particular area. The expertise can be based on an individual's training or educational background, career experience, or knowledge of the product/market. Provided by any person or group based on expertise in a specific area or discipline:

- Organisational strategy
- Benefits management
- Technical know-how
- Budget estimations and duration
- Identifiable risk

Data Gathering – Data is very important for project management. Data serves as the backbone for all decisions to be made by the project manager. Project managers must collect, organise and present data clearly so that all stakeholders will understand the status of the project. Techniques used include:

- Benchmarking - The practice of comparing actual or planned project practices or the project's quality standards to those of comparable projects to identify best practices, generate ideas for improvement, and provide a basis for measuring performance.
- Brainstorming - Technique is used to generate or identify a list of ideas within a short period of time. This best suited in a group setting environment and is normally led by a trained facilitator.
- Check sheets - Forms to collect data. Also known as tally sheets if used to collect quantitative data. Can be used to capture data in a way that will facilitate the effective collection of useful data about a potential quality problem.
- Checklists - A list of items, actions, or points to be considered. It is often used as a reminder.

- Focus groups - Focus groups gathers prequalified stakeholders and subject matter experts to learn about their expectations and attitudes about a proposed product, service, or result.

- Interviews - A formal or informal approach to elicit information from stakeholders by talking to them directly. It is typically performed by asking prepared and spontaneous questions and recording the responses.

- Market research - Examination of industry and specific seller capabilities. Use information gained at conferences, online reviews, and a variety of sources to identify market capabilities.

- Questionnaires and surveys - Written sets of questions designed to quickly accumulate information from a large number of respondents.

- Statistical sampling - Involves choosing part of a population of interest for inspection (for example, selecting 10 engineering drawings at random from a list of 75). The sample is taken to measure controls and verify quality.

Interpersonal and Team Skills:

- Conflict management
- Facilitation

Meetings - Meetings with stakeholders to identify the following criteria:

- Project objectives
- Success criteria
- Deliverables
- Requirements
- Milestones

Formative Activity 4: Project charter development tools and techniques (Expert judgement, Facilitation techniques) (KT0104)

Complete the following Formative Activity as per the instructions from the facilitator

1.5 Structure and scope of a project charter (KT0105)

A project charter should clarify the '**what, why, who, when and what' cost** aspects of the project. The following sections should form part of a project charter to address these aspects:

- **Project Information** – Project name, ID, project manager name, project owner name and a brief project description.

- **Business need, problem, or opportunity** – Context as to why the project exists.

- **Project objectives and benefits** – Achievable goals.

- **Project organisation** – People, roles and responsibilities.

- **Project scope** – High-level scope which outlines the project deliverables as well as deliverables that are out of scope for the project.

- **Project timescale** – High-level indication of the various stages and milestones for the project as well as estimated duration each of these will take to complete.

- **Project budget** – High-level budget requirements.

- **Key assumptions** – Main assumptions taken as well as impact on the project if assumptions were incorrect.

- **Project risks** – Identify unavoidable risks as well as possible risks which will have an impact on the project.

- **Success criteria** – Key goals that will determine if the project is successful or not. These outcomes must be acceptable to the end-user, customer, and stakeholders alike.

1.5.1 Develop the Project Management approach

The Project Management approach is compiled to best suit the specific project and the stakeholder requirements

The project management approach includes but is not limited to project phases, project management processes and specific strategies regarding key project aspects

The project manager may feel the need to tailor the processes to suit the project. The following considerations need to be considered:

- **Project life cycle** – What phases to apply to the project life cycle.

- **Development life cycle** – Predictive or adaptive approach or even a hybrid approach.

- **Management approaches** – Based on the organisational culture.

- **Knowledge management** – How to manage the knowledge transfer between the various groups.

- **Change** – Change management control.

- **Governance** – What committees and stakeholders are part of the project? What are the status reporting requirements?

- **Lessons learned** – How will information gathered during this project be made available for future projects?

- **Benefits** – when and how should the benefits be reported - at the end of each phase or at the end of the project?

1.5.1.1 Identify and document the major project assumptions and constraints

Project assumptions and constraints are identified at the start of the project. Throughout the project life cycle, they will be refined and re-analysed.

Outline the project's assumptions and constraints in the project scope statement.

An assumption is what we believe to be true. These are expected events or circumstances during the project's life cycle. We make assumptions based on our experience or the information available on hand. Assumptions may be false and may negatively affect our project, adding risk to it.

The PMBOK Guide recognises six project constraints including:

- Scope

- Quality

- Schedule

- Budget

- Resources

- Risk

The following diagram shows how it will be documented in the Project Charter

1 Project Charter Template

Project Charter: [Name of Project]	Date

Background [Why is the project being undertaken? Describe an opportunity or problem that the project is to address.] **Goals**

- [specific & measurable goal 1]
- [specific & measurable goal 2]
- [specific & measurable goal 3]

Scope [What will be the end result of the project? Describe what phases of work will be undertaken. It's also important to mention what activities will not be included in this project.] **Key Stakeholders**

Client	[name]
Sponsor	[name]
Project manager	[name]
Project team members	[name], [name], [name], [name].

Project Milestones [Identify the significant project milestones: start date, end date and invoicing dates to the client.]

Project Budget [Describe the main project expenses: non-recurring & monthly recurring.]

Constraints, Assumptions, Risks and Dependencies

Constraints	[Describe here potential factors that will impact the delivery of the project]
Assumptions	[Describe here conditions or situations that you are relying on in order to achieve project goals]
Risks and Dependencies	[What are the most significant risks? What things must happen before the project is delivered?]

Approval Signatures

[Name], Project Client		[Name], Project Sponsor		[Name], Project Manager

1.5.1.2 Identify and describe project strategies in the context of project objectives and practicality requirements

A project strategy refers to the overall goals and direction of the project, especially as it relates to project execution. A project's strategy addresses topics such as the following:

- Methods and processes used for execution,
- Technical direction,
- Resourcing and staffing strategy methods,
- Validation and Verification Testing,
- Program governance and decision-making framework

- Reporting

- etc.

Project strategies include but are not limited to management strategies for:

- Scope

- Schedule

- Cost

- Quality

- Risk

- Communication

Project strategies need to continuously be aligned with project objectives. The project's objectives must be stated clearly, as these will impact every decision in the project lifecycle.

Project objectives must be measurable and contain key performance indicators that will be used to assess a project's overall success. These indicators will often include criteria such as budget, quality, and time to completion.

SMART objectives are goals outlined using the SMART goal system. In this framework, SMART stands for Specific, Measurable, Achievable, Relevant, Time-bound. When documenting the project objectives, make sure to tie them into the bigger picture of the project and the business as a whole.

SMART objectives should be short, realistic, and specific statements that tie into the overall goals of the project or business

Example

Process 30% more client requests per quarter by using a project management solution.

- **Specific:** Adopt a project management software that allows us to process more client requests

- **Measurable**: Compare our target KPI's from previous quarters to this one

- **Attainable:** Identifying bottlenecks and inefficiencies will help streamline our old processes and receive more client requests

- **Relevant:** This will help with client satisfaction, retention, and acquisition — all essential to the business

- **Time-bound:** This objective should be ready to assess at the end of the quarter

At the core of practical project management is an ability for keeping things simple. Good project management practice is still necessary; it is about keeping it lean and mean.

1.5.1.3 Determine and document project controls required to govern the project

Project controls are a set of tools, processes and people skills that are used together to help project managers have the right information, at the right time, to make the right decision. Project controls include but are not limited to policies, procedures, standards, and guidelines required to govern the project:

Additional factors that need to be taken into consideration are:

- Monitoring and reporting methods.

- Issue identification and resolution management procedures.

- Budget control procedures methodology

- Defect control identification and resolution.

Project controls can be seen as the mechanism that keeps a project on schedule when planning and executing, keeping costs within budget. Project control is applied throughout the entire life cycle of a project. In project management, project controls address the following:

- Project strategy

- Methodology

- Schedule

- Cost estimates

- Risk management

- Project documentation

- General oversight

- Quality

- Resources

The following processes define project controls.

Project Planning	One of the important steps in which controllers and project managers work together. Be it creating project plans, schedules, work-breakdown structures or cost estimates, planning gives the project team a baseline to work with throughout the project.
Budgeting	Combining the budgeting process into project activities is crucial to calculate costs accurately and to understand when and why variances occur. By time-phasing budgets and refining the numbers, a transparent model is available for senior managers and team members alike. This model serves as a benchmark throughout the project to understand vitally important cash flows
Risk Management	Project controls provide a detailed approach to managing risk. By pre-emptively identifying risks, monitoring risk constantly, and developing contingency plans to address and mitigate issues, it becomes possible to reduce impact on budget and schedule. It also helps prevent some risks from happening in the future.
Change Management	By tracking changes and understanding their impact, while following a clear process for evaluation, approval, and accountability, assists projects to stay on their charted trajectory.
Forecasting	By increasing the accuracy of estimates-at-complete, project controllers and managers understand the current drivers of cost and schedule overruns. Good progress measurement is essential input to the forecasting process. It serves as the comparison against actual and committed costs that enable project controllers to extrapolate a forecast using a combination of standard forecasting methods and formulas. Regular, timely updates

	enabling faster response and corrective action to when a project starts to get off track.
Performance Management	Defining and using key performance indicators (KPIs) to monitor project health and forecast trends is important to take corrective actions. Organisations that use performance information to manage projects achieves a higher success rate, compared to the success rate for projects that don't leverage this data.
Project Administration	This process involves establishing processes and systems that can help team members communicate and collaborate with each other. The goal is to track status updates, capture meeting minutes and lessons learned, and manage workflows seamlessly so teams can focus on actual execution rather than routine tasks.

1.5.1.4 Identify and explain project performance measures and acceptance criteria

Project Acceptance criteria are criteria that include performance requirements and essential conditions, which must be met before project deliverables are accepted (PMBOK® Guide). They set out the specific circumstances under which the user will accept the final output of the project. They are criteria that we can measure, achieve, and prove to our clients that our work is complete.

Project performance measures and acceptance criteria support the achievement of project objectives.

Project performance metrics for scope, schedule, budget, and completions are defined in the project plan.

Performance data is collected during the project and compared to the plan and the project documents to determine how the project is performing.

Project Acceptance Criteria Examples

1. Backup and Restore testing have been completed successfully.

2. User acceptance testing (UAT) has been completed, and the Senior User/Project Executive has signed off on user acceptance testing.

3. All requirements have been formally approved.

4. Business Continuity Plan (BCP) is in place to be used in situations where the IT system is unavailable, for whatever reason.

According to the PMBOK® Guide, 4th edition, the acceptance criteria are documented in the requirements document and the Project scope statement. Acceptance criteria are often also considered an important part of contractual agreements on external projects.

Formative Activity 5: Structure and scope of a project charter (KT0105)

Complete the following Formative Activity as per the instructions from the facilitator

1.6 Governance of a project charter (KT0106)

Project charter governance refers to the mechanisms and processes by which the project is executed, monitored, and managed.

- The governance framework for the project needs to be detailed within the project charter.

- Roles and responsibilities must be clearly defined.

- Stakeholder engagement and communication detailed.

- Risk and issue management addressed.

- Meetings to be agreed and defined for the duration of the project life cycle.

- Reporting in the agreed format needs to be constant.

The following article provides some insight on how to use the project charter to for project governance:

How to Use a Project Charter for Project Governance

When your project management office (PMO) starts the process of kicking off a project, creating a project charter will be one of the first tasks it supports. It's a document that should be used throughout the project, so we're going to look at *how to use the project charter in project governance.*

When you think of a project charter as a deal or agreement between the project manager and project stakeholders, it's easy to understand how it can be used to govern a project.

To help your PMO build the project charter into your project governance framework, we're going to look at:

- The governance structures you can derive from a project charter
- Using your project charter to start creating KPIs
- Using the project charter for accountability for different project elements

What governance elements are part of a project charter?

With the main components of a project charter laid out, you will have a range of information that will govern the success of a project. Within the project charter, you will have an outline of:

- The project timeline
- The project budget
- What success looks like
- How the project fits with the business strategy

This information will be explored deeper in other documentation, such as in the project schedule, but the project charter will still be the guiding document.

Having this clearly laid out in a high-level document can make governance easier in that your PMO will have one place to check the information that has been signed off by everyone involved in the project.

A good project charter will also have milestones. You need to make sure the project manager returns to the charter to check off these milestones as a way to check the project is on track based on the initial plans.

It's important that the project charter also gets updated when plans change. There should be a process to sign-off on changes, and this should include updates to the project charter – giving your PMO data to see how accurate time and budget predictions at the beginning of a project are.

How do I use a project charter for project governance?

There are different ways that a project can use its charter to guide and inform the governance and success of a project. The governance can be relevant to different people who are involved in a project.

Project governance for the project manager

A project charter is written by the project manager, usually in conjunction with the project team. They will be defining what their project is going to look like and what will constitute a properly completed project.

You can use the KPIs outlined in the charter to make sure the KPIs for individuals on the project will bring about success. The timeline and budget that is laid out will also be the starting point when you're making sure the project hits these vital targets.

Project governance for the project sponsor

The project sponsor isn't usually responsible for project delivery, but they need to have a handle on what is going on in the project.

Your PMO can ensure the project sponsor is monitoring the project and checking off milestones. The sponsor can also use it to make sure the project is meeting their expectations. The sponsor should be checking in on the project to report to the stakeholders and C-suite as well.

Project governance for project stakeholders

Project stakeholders may not be very deeply involved with a project, whether due to limited expertise or limited time, for example. Because the project charter is high-level and doesn't contain too much detail, it can be used by stakeholders for accountability.

The project charter can be used to form the basis of reports made to stakeholders. They will also have a copy of the charter which they signed off on, to refer to and ask any questions – hopefully giving more buy-in and engagement.

Source: https://www.pmmajik.com/how-to-use-a-project-charter-for-project-governance

Formative Activity 6: Governance of a project charter (KT0106)

Complete the following Formative Activity as per the instructions from the facilitator

Outcome 2

Guidelines for Topics

KM-02-KT02: Project management plan

Topic elements to be covered include:

- KT0201 Project management plan concepts and flow of data

- KT0202 The importance and benefits of a project management plan

- KT0203 Project management plan development inputs (Project charter, Enterprise environmental factors, Organisational process assets)

- KT0204 Project management plan development tools and techniques (Expert judgement, Facilitation techniques)

- KT0205 Scope and structure of a project management plan

- KT0206 Project management planning principles

- KT0207 Project life cycle

- KT0208 Elements of a project management plan

Internal Assessment Criteria and Weight

- IAC0201 Project management planning concepts and the flow of data can be explained

- IAC0202 The importance and benefits of project management plan can be explained

- IAC0203 Project management planning documents can be identified, the application explained, evaluated for completeness, gaps identified, and improvement areas motivated

Weight: 20%

KM-02-KT02:

Project management plan

Topic elements to be covered include:

2.1   Project management plan concepts and flow of data (KT0201)

2.2   The importance and benefits of a project management plan (KT0202)

2.3   Project management plan development inputs (Project charter, Enterprise environmental factors, Organisational process assets) (KT0203)

2.4   Project management plan development tools and techniques (Expert judgement, Facilitation techniques) (KT0204)

2.5   Scope and structure of a project management plan (KT0205)

2.6   Project management planning principles (KT0206)

2.7   Project life cycle (KT0207)

2.8   Elements of a project management plan (KT0208)

2.1 Project management plan concepts and flow of data (KT0201) (IAC0201)

The project management plan (PMP) documents the actions required to define, prepare, integrate and coordinate the various planning activities. The PMP clearly defines how the project is executed, monitored and controlled, and closed.

A project management plan needs to be baselined. Scope, time and cost define the baseline so that the project can be measured against the baseline. Once the baseline is defined, it can only be changed via a change control process. The following diagram shows the flow of data during the development of the Project management plan
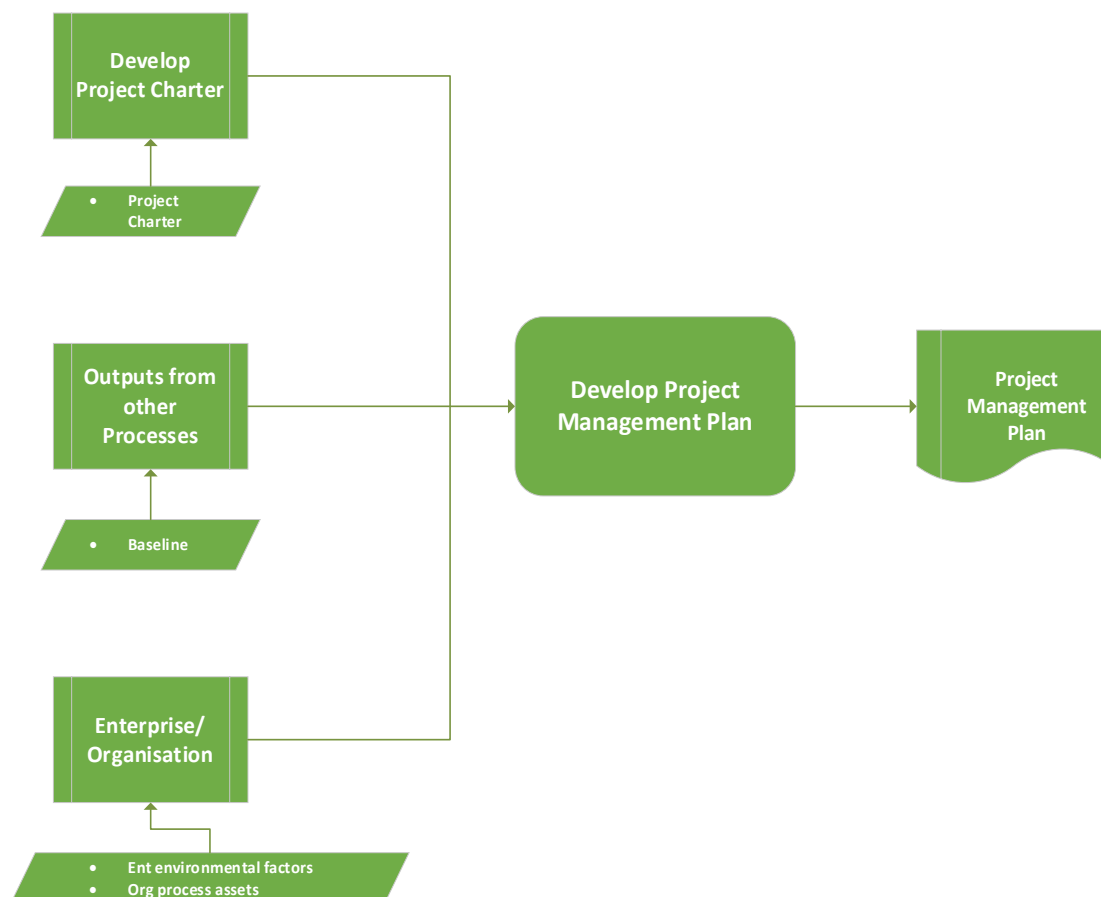
The inputs of the Project Management Plan will include project charter, project scope, enterprise environmental factors, etc. The main objective aligns with the feasibility and project scope to determine the efficacy of the potential project.

The project charter sets out detailed project goals, roles, and responsibilities, identify the primary stakeholders, and the level of authority of a project manager.

Other planning processes that will be used to plan the project includes outputs from all subsidiary plans that incorporate the details of various factors involved in the formal management plan. (e.g., Scope Management, Cost Management, HR Management, Quality Management).

Internal and external factors should also be considered while developing a Project Charter and producing a Project Management Plan.

Internal Factors include:

- Organisational Structure

- Organisation's Culture

- Working Style

- Organisation Policies

- Reviews And Training Records

External Factors include:

- Government Regulations

- Market Conditions

- Political Situations

- Weather Conditions

- Infrastructure

The project manager uses expert judgment to analyse technical and management information to implement them into the plan.

Formative Activity 7: Project management plan concepts and flow of data (KT0201) (IAC0201)

Complete the following Formative Activity as per the instructions from the facilitator

2.2 The importance and benefits of a project management plan (KT0202) (IAC0202)

A project management plan defines how a project is executed, monitored, controlled, and closed. A well-structured project plan gives project managers the visibility and flexibility to make those adjustments.

A good project management plan is an essential guidebook for the project team. It clearly defines the scope of the project, the processes and procedures involved in delivery, and the desired outcomes. For each activity in the schedule, it should seek to define the answers to questions like 'What is being done?', 'When is it happening?', 'Who is going to do it?', 'Where on the project will it occur?', and 'How much will it cost?'

The following are some benefits of a project management plan:

- A detailed definition of the project.

- Establishes the scope and defines the deliverables.

- Identifies the stakeholders and the project team.

- Indicates the milestones and the project schedule.

- Establishes the cost and baseline schedule.

- Provides a tracking mechanism.

- Assists with performance reporting

- Identifies the communication channels and requirements.

- Highlights risks and response mechanisms.

- Establishes a process for changes to the scope, schedule, cost, quality, and risk.

- Improves monitoring and control of activities.

- Identifies resources required.

- Provides budget requirements.

The project management plan is, in essence, a communications tool. It's the reference point for delivery, and as such, needs to communicate how the project team will achieve the desired end goal

The project plan is the master plan for delivery. Taking the time to create a comprehensive, realistic plan is a critical step in project management, as is communicating and gaining buy-in to that plan from sponsors and stakeholders.

> ### Formative Activity 8: The importance and benefits of a project management plan (KT0202) (IAC0202)
>
> Complete the following Formative Activity as per the instructions from the facilitator

2.3 Project management plan development inputs (KT0203)

In this section we will look at the inputs needed to create the PMP.

The **Project Charter** will incorporate the project documents including the project scope statement which outlines the characteristics and boundaries of the project and methods of acceptance and control.

Enterprise environmental factors outline government and industry standards, quality standards, existing facilities and resources, risk tolerances etc.

Organisational process assets indicate the health and safety policies, quality assurance, templates, guidelines change control procedures, documentation policy and project closure guidelines.

2.3.1 Identify project management planning documents, explain the application, evaluate for completeness, identify gaps, and motivate improvement areas (IAC0203)

"The project management plan is the document that describes how the project will be executed, monitored and controlled. It integrates and consolidates all of the subsidiary plans and baselines from the planning processes." PMBOK 5; p. 76

The Project Plan is developed at the conclusion of the Planning phase of the project. It is a detailed document comprising:

- Scope definition (items from the WBS listed with functionality under the headings of the key deliverables plus exclusions)

- Schedule (including project milestones)

- Budget

- Risk schedule (major project risks and management strategy)

- Project organisation structure (reporting and approval pathways)

- Roles and responsibilities (project team and key stakeholders)

- Quality system (procedure and standards)

- Procurement schedule (human resources; goods and services)

- Communications strategy (protocols, templates, reporting schedule)

- Change management procedure

For the planning phase of the project you will need:

- **Project management plan** - The project plan is the most comprehensive of all project management documents because it compiles the project documents that are created during the project planning phase.

- **Work breakdown structure -** The WBS is used to organize the work into manageable sections, often measured in time, for example, two weeks.

  The list starts with the required deliverables. This goal is further broken down into work packages and tasks needed to reach this objective.

- **Project budget** - The project budget is a critical project management document. To create one, you'll need to estimate your project costs, which include labour, materials, equipment and anything that's needed to execute the project

- **Project schedule** - The project schedule determines what work needs to be done and when. It is the timeframe for the project. A Gantt chart is the perfect tool for creating a detailed project schedule.

- **Change management plan** - This document is used to track formal additions or alterations to the agreed-upon deliverables during project execution.

- **Scope management plan** - A scope management plan is all the processes that are in place to make sure that the project includes all the necessary tasks. The plan is primarily concerned with defining how the scope is explained, developed, structured and verified.

- **Risk management plan** - A log of all risks and issues the project may encounter. Follow a standard logging format, for example, Issue name or ID, description, impact, probability, proposed mitigation, and owner or person accountable.

Once the project plan is created and approved, you cannot just make changes at will. Any gaps that are identified in the project must be addressed with a formal request.

A **change request** is a formal proposal to modify any document, deliverable, or baseline and may result in an update to other parts of the project management plan. When issues are found while project work is being performed, change requests are submitted, which may modify project policies or procedures,

project scope, project cost or budget, project schedule, or project quality. Other change requests cover the needed preventative or corrective actions to forestall negative impact later in the project. Requests for a change can be direct or indirect, externally or internally initiated, and can be optional or legally/contractually mandated, and may include:

- Corrective action- An intentional activity that realigns the performance of the project work with the project management plan.

- Preventative action- An intentional activity that ensures the future performance of the project work is aligned with the project management plan

- Defect repair- An intentional activity to modify a non-conforming product or product component

- Updates- Changes to formally controlled project documents, plans, etc, to reflect modified or additional ideas or content" page 85

"Approved Change Requests: approved change requests are an output of the Performed Integrated Change Control process, and include those requests reviewed and approved for implementation by the change control board (CCB). The approved change request may be a corrective action, a preventative action, or a defect repair. Approved change requests are schedules and implemented by the project team, and can impact any area of the project or project management plan. The approved change requests can also modify the policies, project management plan, procedures, costs, or budgets or revise the schedules. Approved change requests may require implementation of preventative or corrective actions." PMBOK 5; p. 82

> ### *Formative Activity 9: Project management plan development inputs (KT0203)*
> Complete the following Formative Activity as per the instructions from the facilitator

2.4 Project management plan development tools and techniques (Expert judgement, Facilitation techniques) (KT0204)

There are no project management tools and techniques that are standard or fool proof and that we can use in every project of every organisation. The decision about which one to choose should arise from the project specifics that the brief contained, the complexity level that the project boasts, the nature and qualification of the team involved in the development, and countless other factors.

Most of the project management tools and techniques can be used in various fields, but there are techniques that are natively designed for specific activities and these activities or projects really cannot function properly if they don't have the foundation of those tools. Let us take a look at some of these tools and techniques

Expert Judgement:

- Customising the project management process to meet the needs of the project.
- Adding additional components to the plan if required.
- Determining the correct tools and techniques to use.
- Identifying the resources and skills required to perform the activities.
- Prioritising the activities to ensure the resources are allocated to the tasks at the right time.

Data Gathering Techniques:

- Brainstorming between the project team and subject matter experts.
- Checklists are sometimes used to facilitate the development of the plan.
- Focus groups can be used to discuss integration between components.
- Interviews with the stakeholders to develop the plan.

Interpersonal and team skills:

- Conflict management may be necessary to align the stakeholders with the plan.
- Facilitation ensures that all contributions from the participants are taken into consideration.
- Meeting management is required to ensure that meetings are well run.

Meetings:

- Meetings are used to discuss the project approach and how tasks will be executed.

- The project kick-off meeting is performed once the planning has been done and the project is ready for execution.

> *Formative Activity 10: Project management plan development tools and techniques (Expert judgement, Facilitation techniques) (KT0204)*
>
> Complete the following Formative Activity as per the instructions from the facilitator

2.5 Scope and structure of a project management plan (KT0205)

The project management plan is the document that describes how the project will be executed, monitored, and controlled. It integrates and consolidates all of the subsidiary plans and baselines from the planning processes.

The Project Plan is developed at the conclusion of the Planning phase of the project. It is a detailed document comprising:

- Scope definition (items from the WBS listed with functionality under the headings of the key deliverables plus exclusions)

- Schedule (including project milestones)

- Budget

- Risk schedule (major project risks and management strategy)

- Project organisation structure (reporting and approval pathways)

- Roles and responsibilities (project team and key stakeholders)

- Quality system (procedure and standards)

- Procurement schedule (human resources; goods and services)

- Communications strategy (protocols, templates, reporting schedule)

- Change management procedure

2.5.1 Compile a project scope statement

A project scope statement is the description of the entire project scope, deliverables in detail, assumptions, and constraints.

It also provides explicit scope exclusions which assists with managing the stakeholder expectations.

It enables the project team to plan efficiently, guides the project team during execution of the project and provides the baseline to determine whether changes are within or outside the project's boundaries.

The projects scope statement includes the following:

- **Product scope description** – describes the characteristics of the product, service or result described in the project charter.

- **Deliverables** – any verifiable product, result, or capability to perform a service.

- **Acceptance criteria** – conditions that are required to be met.

- **Project exclusions** – identifies what is excluded from the project

The project charter contains high-level information while the project scope statement contains a detailed description of the scope components.

2.5.1.1 Scope and content of a project charter or brief

All documented reports are accurate and compiled in the required format

The scope statements are cohesive, balances all requirements and assures alignment to the project charter

Governance criteria are practicable, cohesive, and complete.

Example of a project charter:

Project Charter: [Name of Project]	Date

Background [Why is the project being undertaken? Describe an opportunity or problem that the project is to address.] **Goals**

- [specific & measurable goal 1]
- [specific & measurable goal 2]
- [specific & measurable goal 3]

Scope [What will be the result of the project? Describe what phases of work will be undertaken. It's also important to mention what activities will not be included in this project.] **Key Stakeholders**

Client	[name]
Sponsor	[name]
Project manager	[name]
Project team members	[name], [name], [name], [name].

Project Milestones [Identify the significant project milestones: start date, end date and invoicing dates to the client.] **Project Budget** [Describe the main project expenses: non-recurring & monthly recurring.] **Constraints, Assumptions, Risks and Dependencies**

Constraints	[Describe here potential factors that will impact the delivery of the project]
Assumptions	[Describe here conditions or situations that you are relying on in order to achieve project goals]
Risks and Dependencies	[What are the most significant risks? What things must happen before the project is delivered?]

Approval Signatures

[Name], Project Client		[Name], Project Sponsor		[Name], Project Manager	

Formative Activity 11: Scope and structure of a project management plan (KT0205)

Complete the following Formative Activity as per the instructions from the facilitator

2.6 Project management planning principles (KT0206)

The following project management principles cover the major areas when managing a project:

- **Organisation structure** – Define a project organisation chart that specifies the roles and hierarchy of all the team members. Consider the procedures and guidelines that they will need to follow.

- **Project goals and objectives** – Define the expected benefits of the project as goals and the project objectives are the steps that will be taken to achieve them.

- **Communication Plan** - There must be a communication plan to regulate the communications to the various participants. This is the only way to ensure effective implementation of decisions. The communications plan ensures a singular way to disseminate the information for effective administration of the project.

- **Roles and responsibilities** - A project must have well-defined roles, policies, and procedures in place. One must know how to manage the scope of work, ensure the quality of the project, define the schedule and cost etc.

- **Risk Management Plan** – Risk is a part of any project. Identifying the risks before the project starts ensures that proper and effective management of these risks is possible. A resolution plan needs to be attached to each risk to maintain the project progress.

- **Project performance baseline** – This is key to ensure measurability of the project and create accountability for the team. Accountability gives you the means to be able to identify key players as well as resources that need additional training or direction.

- **Change management plan** – This is a way to keep track of changes and establishing an approval process. It is critical to try to avoid scope creep. If changes are required it must follow the change management process and create, file, and approve a change.

- **Value delivery** – Focus on your client's expectations to meet the project requirements. One needs to ensure that project goals and objectives are realistic.

> *Formative Activity 12: Project management planning principles (KT0206)*
>
> Complete the following Formative Activity as per the instructions from the facilitator

2.7 Project life cycle (KT0207)

The **collective activities** associated with building the project deliverables are referred to as the **project life cycle.**

The project life cycle can be defined as "the complete set of time periods through which a project passes sequentially in a logical and orderly manner".

PMBOK 6 defines a project life cycle as:

"the series of phases that a project passes through from its initiation to its closure. The phases are generally sequential, and their names and numbers are determined by the management and control needs of the organisation or organisations involved in the project, the nature of the project itself, and its area of application. The project life cycle can be determined or shaped by the unique aspects of the organisation, industry or technology employed." (p. 38)

While there are many different versions of the project life cycle, all essentially contain the steps of:

- Germination of the idea

- Proposal and initiation

- Design and appraisal

- Mobilisation of the team

- Execution and control

- Integration of the team and their work

- Testing

- Handover of the project's product

- Closeout of the work.

"A project may be divided into any number of phases. A project phase is a collection of logically related project activities that culminates in the completion of one or more deliverables" (PMBOK 6).

In its simplest form the life cycle consists of **four major periods or phases**:

- **Concept** (the project concept as a need solution is selected and defined)

- **Development/ Definition** (the concept is verified and developed into a workable plan for implementation)

- **Implementation** (the implementation plan is carried out)

- **Closeout** (the project process is completed and documented, and the finished product is transferred to the care, custody, and control of the owner)

This model provides a basic outline that can be used on any project. You start off understanding the requirement of the solution, designing a solution, building and testing a solution and then implementing the solution. Each of these major areas of focus is called a phase.

The figure below[2] shows a typical project life cycle separated into its generally accepted **four fundamental phases**.

The figure also lists the **activities** to be expected in each phase.

The phase separations correspond to **key decision points** for purposes of executive level control.

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[2] Adams, J. R. and Barndt, S. E. "*Organizational Life Cycle Implications for Major Projects*." Project Management Quarterly, Vol. IX, No. 4, Dec. 1978
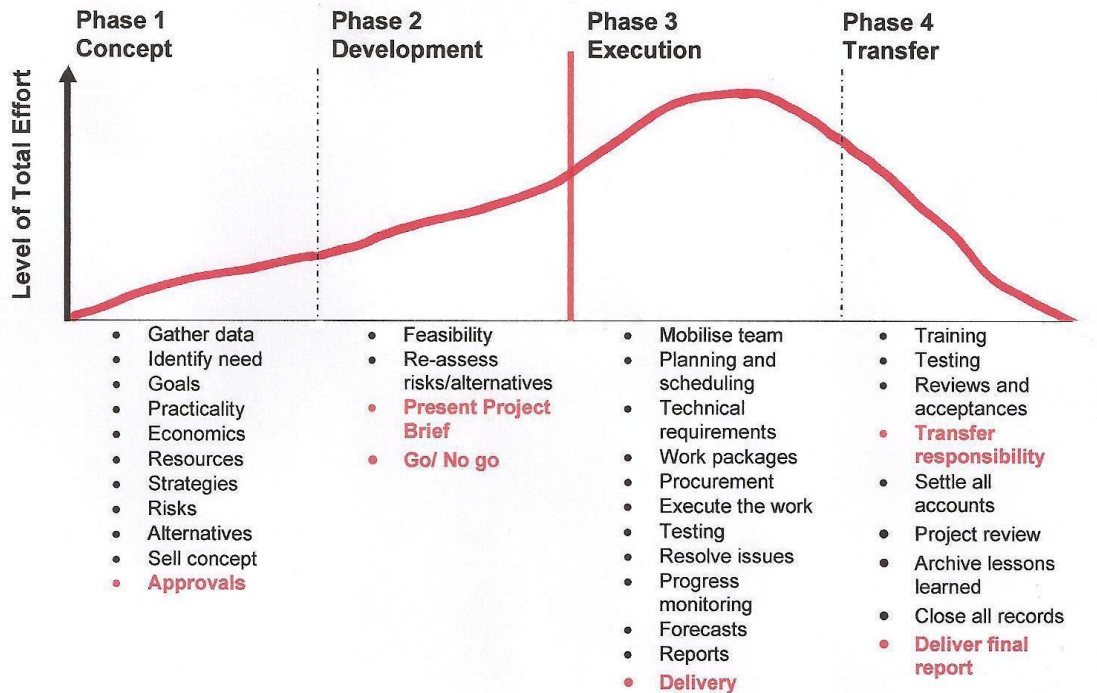
Not all projects, of course, conform exactly to the stages shown and the activities within each may vary somewhat. However, poor project performance and lack of control can frequently be traced back to significant departures from the division of activities as shown.

The simple model described above can be applied to all projects.

Even if you have a small project, you still have to go through these basic steps, although some of them may only be a mental exercise:

- When you receive some type of service request, it describes the work required (analysis and requirements)

- You take the requirements and mentally map them into the work to be performed (design)

- You then make the changes required and test (test) and implement them (construct, test, implement).

This approach is the life cycle model you would probably end up with, even if you knew nothing about methodology and just had to build a project work plan from scratch.

The important point is that a common, scalable project management process can be used effectively on all your projects. The detailed work to build your deliverables is referred to as the "project life cycle".

The following diagram offers a visual view of the project life cycle

INITIATING	PLANNING	EXECUTING	MONITORING & CONTROLLING	CLOSING
Project Charter	Project Management Plan	Direct and Manage Project Work	Perform Change Control	Close Project or Phase
Identify Stakeholders	Define Scope	Manage Quality	Control Scope	
	Develop Schedule	Manage Teams	Control Schedule	
	Estimate Costs	Manage Communication	Control Costs	
	Quality Management	Implement Risk Responses	Control Quality	
	Resource Management		Control Resources	
	Communication Plan		Monitor Communication	
	Risk Management Plan		Monitor Risks	

Formative Activity 13: Project life cycle (KT0207)

Complete the following Formative Activity as per the instructions from the facilitator

2.8 Elements of a project management plan (KT0208)

The key to a successful project lies in the planning. The first thing you should do when undertaking any project is create a project plan.

Unfortunately, project planning is often ignored in favour of "getting on with the work". However, the value of a project plan is that, if done properly, it will save time, money and prevent many problems.

The project management plan or project specification should be an accurate description of:

- What the project aims to achieve

- Criteria and flexibilities involved

- Parameters

- Scope

- Range

- Outputs

- Sources

- Participants

- Budgets

- Timescales.

The most successful projects begin the planning process with the members of the project team. The project team should be constituted prior to the project planning process so that their inputs can be included at the start. This promotes buy-in, and commitment and it ensures that the entire team understands the project prior to implementation. A project plan details the steps needed to bring the project to fruition. This includes activities and tasks required in the appropriate order and workflow.

In the project plan it is laid out what activities and tasks will be required, resources needed, from human resources to equipment and financing, as well as where the aforementioned can be acquired. Furthermore, the project planning must factor in risk and how to manage it, including contingency plans and a detailed communication strategy to keep all the stakeholders up to date.

- Example of a Project management plan

ID	ⓘ	Task Name	Duration	Start	Finish	Predecessors	Resource Names	F	S	S	M	T
1		**Initiating**	**1 day?**	**Mon 10/31/05**	**Mon 10/31/05**							
2		Obtain sign-off of contract	1 day?	Mon 10/31/05	Mon 10/31/05							
3		**Planning**	**1 day?**	**Mon 10/31/05**	**Mon 10/31/05**							
4		Scope planning - develop a written scope statement	1 day?	Mon 10/31/05	Mon 10/31/05							
5		Scope definition - Sub-divide major project deliverables into smaller components	1 day?	Mon 10/31/05	Mon 10/31/05							
6		Activity definition - Identify the specific activities that must be performed to produce the various project deliverables	1 day?	Mon 10/31/05	Mon 10/31/05							
7		Activity sequencing - Identify and document dependencies	1 day?	Mon 10/31/05	Mon 10/31/05							
8		Activity duration estimating - Estimate number of work periods needed to complete activities	1 day?	Mon 10/31/05	Mon 10/31/05							
9		Schedule development - Analyse activity sequences, duration and resources to create the project schedule	1 day?	Mon 10/31/05	Mon 10/31/05							
10		Resource planning - Determine what resources and quantities should be used	1 day?	Mon 10/31/05	Mon 10/31/05							
11		Cost estimating - Develop an estimate of costs and resources to complete the activities	1 day?	Mon 10/31/05	Mon 10/31/05							
12		Cost budgeting - Allocate cost estimates to individual work items	1 day?	Mon 10/31/05	Mon 10/31/05							
13		Project plan development - Take results of planning processes and create coherent document	1 day?	Mon 10/31/05	Mon 10/31/05							
14		**Executing**	**1 day?**	**Mon 10/31/05**	**Mon 10/31/05**							
15		Project plan execution	1 day?	Mon 10/31/05	Mon 10/31/05							
16		Scope verification - Formalise the acceptance of the project scope	1 day?	Mon 10/31/05	Mon 10/31/05							
17		Quality assurance - evaluate overall project performance regularly	1 day?	Mon 10/31/05	Mon 10/31/05							
18		Team development	1 day?	Mon 10/31/05	Mon 10/31/05							
19		Information distribution - Make information available to stakeholders in a timely manner	1 day?	Mon 10/31/05	Mon 10/31/05							
20		Solicitation - Obtain quotes, bids, offers as required	1 day?	Mon 10/31/05	Mon 10/31/05							
21		Source selection - Choose appropriate service providers	1 day?	Mon 10/31/05	Mon 10/31/05							
22		Contract administration - Manage the relationship with the service provider	1 day?	Mon 10/31/05	Mon 10/31/05							
23		**Controlling**	**1 day?**	**Mon 10/31/05**	**Mon 10/31/05**							
24		Change control	1 day?	Mon 10/31/05	Mon 10/31/05							
25		Scope change control	1 day?	Mon 10/31/05	Mon 10/31/05							
26		Schedule control	1 day?	Mon 10/31/05	Mon 10/31/05							
27		Cost control	1 day?	Mon 10/31/05	Mon 10/31/05							

Formative Activity 14: Elements of a project management plan (KT0208)

Complete the following Formative Activity as per the instructions from the facilitator

Outcome 3

Guidelines for Topics

KM-02-KT03: Direct and manage project work

Topic elements to be covered include:

- KT0301 Concepts and flow of data related to directing and managing project work

- KT0302 The importance and benefits of a directing and managing project work

- KT0303 Project deliverable

- KT0304 Work performance data

- KT0305 Change requests

- KT0306 Document updates

- KT0307 Inputs related to directing and managing project work

- KT0308 Tools and techniques for directing and managing project work

Internal Assessment Criteria and Weight

- IAC0301 Concepts and the flow of data related to directing and management project work can be explained

- IAC0302 The importance and benefits of managing and directing project work can be explained

- IAC0303 Documents related to directing and managing project work can be identified, the application explained, evaluated for completeness, gaps identified, and corrective measures motivated

Weight: 20%

KM-02-KT03:

Direct and manage project work

Topic elements to be covered include:

3.1   Concepts and flow of data related to directing and managing project work (KT0301)

3.2   The importance and benefits of a directing and managing project work (KT0302)

3.3   Project deliverable (KT0303)

3.4   Work performance data (KT0304)

3.5   Change requests (KT0305)

3.6   Document updates (KT0306)

3.7   Inputs related to directing and managing project work (KT0307)

3.8   Tools and techniques for directing and managing project work (KT0308)

3.1 Concepts and flow of data related to directing and managing project work (KT0301) (IAC0301)

Directing and managing project work is the process of guiding and executing the work detailed in the project management plan. This is also includes implementing approved changes to achieving the project's objectives. This process provides overall management of the project deliverables an improves the project success probability. The process is followed throughout the project.
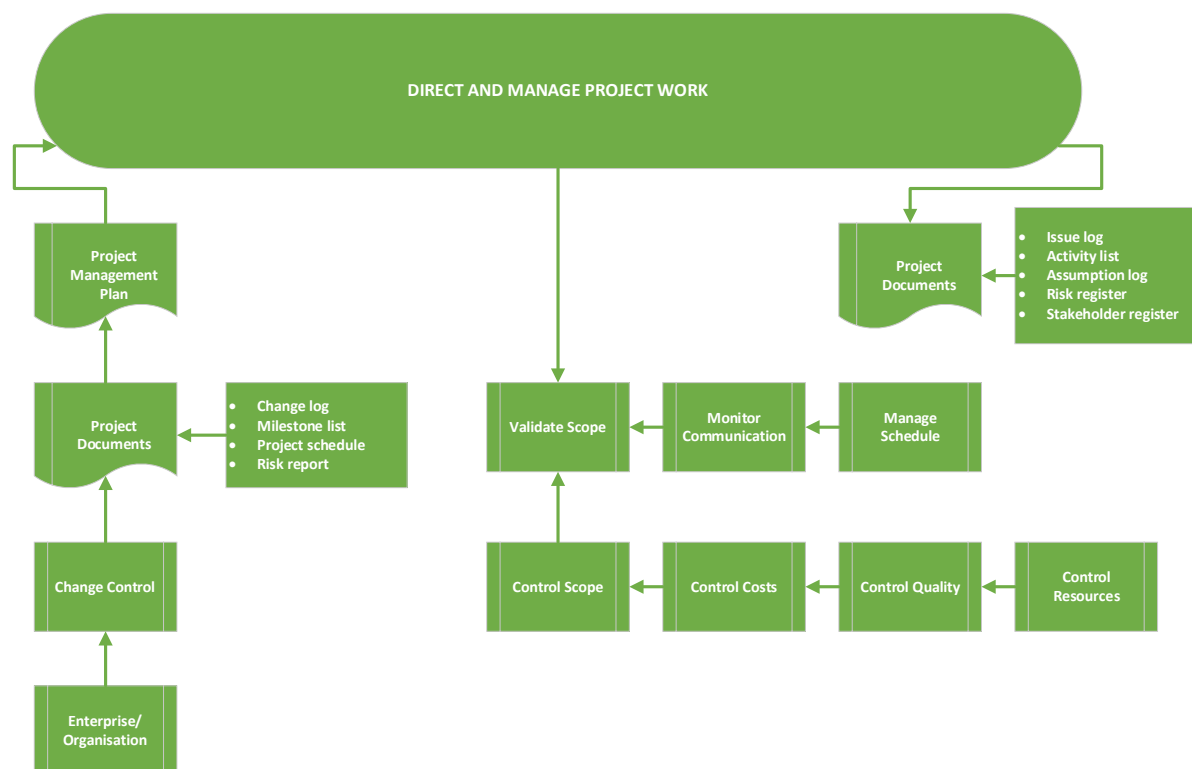
In the course of executing the project, a project manager performs the following:

- **Save a baseline plan for comparison**   To get good tracking information, keep a copy of certain project plan information on hand so you can compare your plan to actual progress as the project moves along.

- **Monitor the resources as they carry out their assigned tasks**   As the project manager, you keep an eye on their progress in completing their tasks.

- **Track task progress**   You can track progress in terms of:
  - Percent complete
  - How long a task takes from beginning to end
  - How many hours a resource spends on a task.

As you gather this information, you can see whether tasks and milestones will finish on time. You can also gather information about costs of resources, tasks, and the project as a whole. While your project team is executing the tasks, you need to be making sure that the project stays within the prescribed deadline and budget while maintaining the scope outlined in the project goals.

In project management, this process is referred to as "controlling the project." In the controlling process, you monitor all task activities, compare the plan to actual progress, and make adjustments as needed. To control the project, you do the following:

- **Analyse project information**
  - Analyse the information you are gathering and use this analysis to solve problems and make decisions.
    - Often, you need to decide how to recover a slipped schedule or a budget overrun.
    - Sometimes, you are in the unusual position of deciding what to do with extra time or money.

- **Communicate and report**
  - Throughout the execution of the project, you will be in constant communication with your team members and other stakeholders.
  - You need to keep management, customers, and other stakeholders informed of any potential problems, new decisions, and your overall progress.

Formative Activity 15: Concepts and flow of data related to directing and managing project work (KT0301) (IAC0301)

Complete the following Formative Activity as per the instructions from the facilitator

3.2 The importance and benefits of directing and managing project work (KT0302) (IAC0302)

The Direct and Manage Project Work process executes the project activities in the plan to complete the project deliverables and accomplish the project objectives. Resource allocation occurs, and these resources are managed efficiently and any changes necessary due to performance metrics are carried out. The outputs from the Direct and Manage Project Work process are stemmed from the delivery of the project work as planned and scheduled within the project management plan.

The project management team manages the project activities and the various technical/organisational interfaces in the project. All project changes, corrective action, preventative action, and repair, as well as their implementation needs to be reviewed for their impact on the project.

Performance data is collected and shared for analysis during project execution. This provides the required information about the status of the deliverables and other relevant details about the project performance. The Monitoring and Controlling Process Group will use the performance data to improve the performance of future projects.

The importance and benefits of directing and managing project work includes:

- **Project managers are able to track each deliverable**. This provides control and the ability to optimise resources by reallocate unused resources to other sub-plans. Tracking deliverables allow the project manager to verify that each deliverable aligns with the project objectives and the overall plan.
- **Prepare team members to apply changes.** Project managers who direct and manage projects are able to respond quickly to changes. This will assist team members by providing guidelines and standards they can follow when the client introduces unexpected changes. Team members may feel confident and prepared to handle these changes and produce a quality deliverable.
- **Ensure quality.** During the process of directing and managing of project work, the project managers will rely on quality assurance procedures that will assist and guide team members on how to execute their activities without sacrificing quality.
- **Helps other project managers within the organisation.** During this process the project manager will register all the project details, providing other project managers with a

log they can use to learn from the project's experience and the way the team reached success. It can also help them make decisions and establish criteria for their own projects.

Formative Activity 16: The importance and benefits of a directing and managing project work (KT0302) (IAC0302)

Complete the following Formative Activity as per the instructions from the facilitator

3.3 Project deliverable (KT0303)

Project deliverables are agreed upon by the project management team and stakeholders during the project planning phase. Projects deliverables are the results of project activities. For example, a project deliverable can be either a product or service, or it can also be the documentation that is part of the project closure. Project deliverables can be big or small, and their number can also vary depending on the project.

It is good project management practice, to identify in advance all the anticipated deliverables. For each deliverable, you should identify:

- Nature, description, and purpose of the deliverable

- Quality standard

- Dependencies (what must be completed prior and what further deliverables depend upon this one)

- Date required

- Author/creator

- Who must review it?

- Who must approve it?

- Who should receive it for information or use (but who do not get the opportunity to review or approve)?

- Additional distribution (e.g., third parties, auditors, publishing, filing)

- Security/secrecy requirements – i.e., who cannot see or use it

- Currency of information (e.g., must be maintained, updateable, one-off, temporary, final project deliverable)

3.3.1 Develop a Work Breakdown Structure

In project management, a **Work Breakdown Structure** (**WBS**) is an exhaustive, hierarchical (from general to specific) tree structure of deliverables and tasks that need to be performed to complete a project.

Its hierarchical arrangement allows for easy identification of the terminal elements (the actual items to be done in a project).

Being an exhaustive document of the project scope, the WBS serves as the basis for much of project planning. All the work to be done in a project must trace its origin from one or more WBS entries. The Work Breakdown Structure is a very common and critical project management tool.

Creating a WBS (Work Breakdown Structure) is the process of expanding the project deliverables into smaller, more manageable components. It is beneficial to follow this process as it provides a framework of what needs to be delivered. This process is performed once or at various stages of the project. The following diagram graphically demonstrates how to create a Work Breakdown Structure
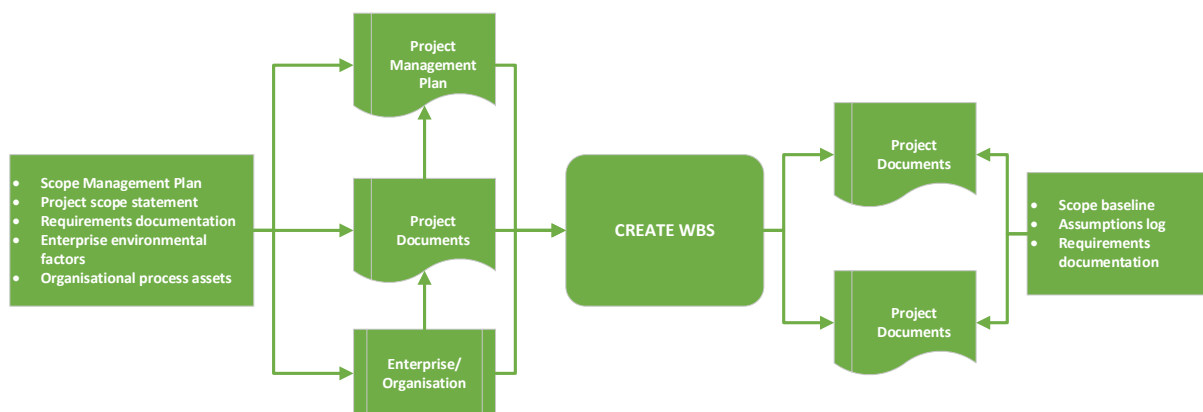
The WBS is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team, to accomplish the project objectives and create the required deliverables.

- The WBS organises and defines the total scope of the project.
- The WBS subdivides the project work into smaller, more manageable pieces of work, with each descending level of the WBS representing an increasingly detailed definition of the project work.

The planned work contained within the lowest-level WBS components, which are called work packages, can be scheduled, cost estimated, monitored, and controlled.

The WBS represents the work specified in the current approved project scope statement. Components comprising the WBS assist the stakeholders in viewing the deliverables of the project.

Although each project is unique, a WBS from a previous project can often be used as a template for a new project, since some projects will resemble another prior project to some extent. For example, most projects within a given organisation will have the same or similar project life cycles and, therefore, have the same or similar deliverables required from each phase. Many application areas or performing organisations have standard WBS templates.

WBS Completion checklist

Appropriate level of detail: Continue to break the work down until a task list is developed which meets the following criteria:	✓ / ✗
One (and only one) owner can be assigned to each of the lowest level tasks	
Clearly defined outputs are evident for each task	
Quality can be monitored through performance criteria associated with each output	
The tasks communicate the work to be accomplished to the person who is accountable	
The likelihood that a task is omitted, or workflow forgotten is minimized	
Each task is well enough defined and small enough so that estimates of duration are credible	
The project is broken down to the level at which you want to track	
As a rule, the lowest level tasks should have durations between two and twenty days and effort that equates to not more than 1 person week	
No forgotten tasks: Project delays are often caused by forgotten tasks, rather than inaccurate estimates. Ensure you have included tasks for:	✓ / ✗
Planning the project	
Approval cycles	
Key project meetings	

Management/customer interfaces	
Quality inspections/fixing defects	
Training	
Management	
Test planning, development, and execution	
Project reviews and project closing	
Signature		**Date**	

The following article provides the steps to create a Work Breakdown Structure:

How to create a Work Breakdown Structure

The best way to produce a WBS involves post-its and a blank wall.

Get your team together and ask them to spend 10 – 15 mins listing out all of the project tasks that they can think of.

If you have a large project it may help to split the work into work streams or groups.

To get things moving ask team members to focus on their tasks or their departments tasks.

Write out your own project management tasks as well.

When you can see plenty of post-its and people are starting to slow down, Write the end product of the project and place it at the top of the wall or white board. Underneath the final product put up post its representing the key deliverables or work streams.

For example; the key deliverables of a software implementation Work Breakdown Structure might look like this.
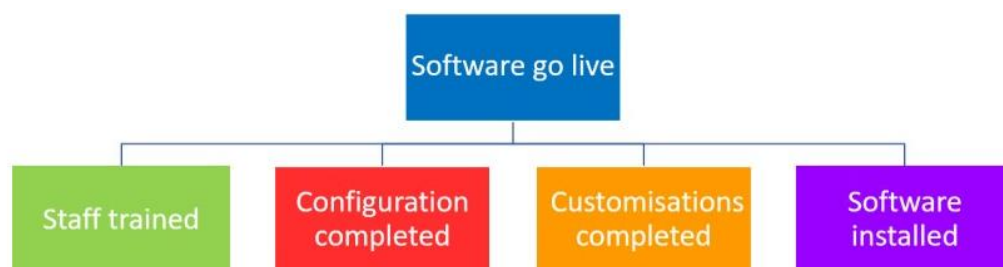
Once you have the key deliverables, ask your team to add their tasks beneath each main deliverable. You will have a mix of products, sub-products and tasks. Organise the products in a hierarchy so that each product is broken down into its component parts. Using the software project example you might have something like this:

Example Work Breakdown Structure

Source: Work Breakdown Structure (WBS) https://www.stakeholdermap.com/plan-project/plan-project-stage1.html
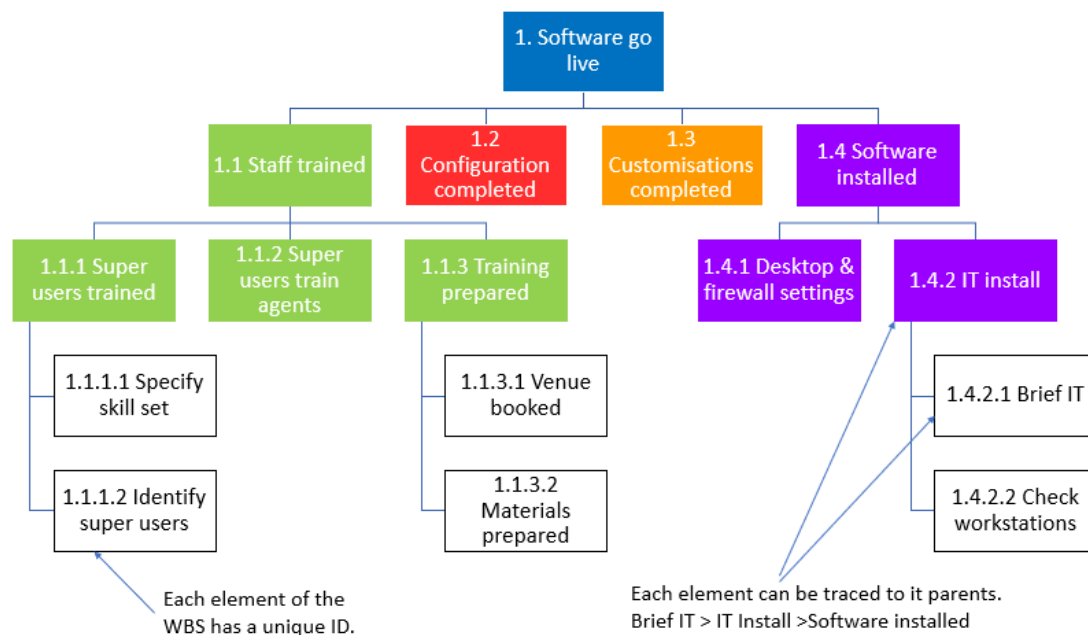
3.3.1.1 Project schedule techniques

The cornerstone of any well-managed project is the schedule, which is a tool that identifies and organises project tasks into a sequence of events that then form a project management plan.

The process of building the schedule:

- Enables the project manager to identify the risk points

- Helps the project team to understand the proper linkage of events

- Assists in resource planning

- Allows the project manager to establish goals for the team and the project

The benefits of a well-constructed schedule are numerous:

- It becomes the framework by which the Project Team is organised to strive towards common goals

- It provides the project manager with the tool to manage to a desired outcome

- It provides a means to measure the performance of the Team

All projects struggle with resource limits: time, personnel, budget, and materials; which is why a project manager should be proactive and in control of the project by implementing cost and schedule management. To do so, s/he will need to establish the performance measurement baseline (PMB), compare actual work accomplished against established plans and identify early warning indicators which point to potential risk areas and take the necessary corrective action to keep the project in control.

Managing and maintaining the schedule proactively is the best way to assure the project comes in on time.

To be proactive about the schedule control tools and techniques process there are some inputs that the project manager needs to understand. These inputs are:

- **The Schedule Baseline**

  o The Schedule Baseline is the current approved version of the project schedule which provides a basis for comparing and reporting on the project performance.

  o The project schedule details the planned start and end dates for the activities.

- **Performance Reports**

  o Performance Reports are first and foremost a communication mechanism to list what work has been performed by whom.

  o A good performance report should show the planned and actual dates and duration of work activities

- **Schedule Management Plan**

  o The Schedule Management Plan details how changes to the schedule can be made and under which conditions such changes are allowed.

- o The project manager, project sponsors and functional managers should adhere to the scheduling guidelines explained within the schedule management plan.

- **Approved Change Requests**

  - o Approved schedule Change Requests are an input because the schedule needs to be revised to reflect the approved changes to the project schedule.

Once all the inputs have been obtained, there are tools and techniques that can be used to review the schedule. If a situation occurs where project performance differs from the schedule, these tools and techniques can be used to correct the situation.

The project manager will evaluate how much work has been completed compared with actual performance versus planned performance data. If s/he uncovers a schedule variance, the project manager should analyse the variance's severity.

The tools and techniques commonly employed in controlling the schedule are:

- **Progress reporting**

  - o A report is created detailing the actual start and finish dates of activities and the remaining duration of unfinished activities. The progress report may include:

    - ▪ Actual start and finish dates

    - ▪ Remaining durations for unfinished or in-progress activities

    - ▪ Percentage completion of in-progress activities

- **Variance Analysis**

  - o VA compares planning data with actual performance to discover delays or variations in the project schedule.

    - ▪ For example, the planned start, duration, and anticipated completion date would be compared with the actual start date, duration, and completion date for that activity.

- **Performance Measurement**

- Performance measurement assesses the severity of delays and other deviations by measuring project performance compared to the project plan.

- This comparison helps the project manager determine if corrective or proactive actions are needed for this project.

The process of controlling the schedule creates several different types of outputs as follows:

- **Performance measurements**

  - The process of controlling the schedule produces measurements of performance to date on a project.

  - The status of the project is reported to stakeholders.

- **Requested changes**

  - Requested changes are the proposed changes to start dates, finish dates, activity durations, or project milestones.

- **Recommended corrective actions**

  - Recommended corrective actions are changes to resolve a problem with the project schedule.

- **Schedule Baseline updates**

  - Schedule Baseline updates are done when approved changes are applied to the existing baseline.

- **Activity List updates**

  - Activity List updates occur when an approved change causes the project manager to add or remove activities from the Activity List.

- **Activity attribute updates**

  - Activity attribute updates are updates or changes in the description or relationship of project activities.

  - These changes may require additional actions by some stakeholders, so they must be communicated.

- **Organisational process assets**

  - Detecting a schedule variance and finding a solution provide valuable lessons for future projects.

  - These lessons are documented and kept.

  - They can be shared with others in the organisation who executed the project.

- **Project Management Plan**

  - Finally, the process of controlling the schedule may generate changes to the overall Project Management Plan.

  - Corrective actions and approved schedule changes may call for changes in the methods, policies, and activities the project manager uses to control the schedule for the remainder of the project.

  - These changes should be documented in the Schedule Management Plan segment of the Project Management Plan.

When project managers control the Project Schedule, they make decisions that alter the project. Outputs from controlling the schedule connect the decisions with actions.

Example of a project schedule

3.3.1.2 Project approval process

The Project Approval is an important hurdle for a new project to pass. At this point, executive or senior management will determine whether there is sufficient technical and economic justification for the business to undertake the project.

Having a project approved will significantly reduce project risk. Once the project is approved, there can be no more amendments or change requests billed to the project, thus controlling costs. It should also be the point when the clock stops ticking on the project deadline, so there is no more time risk.
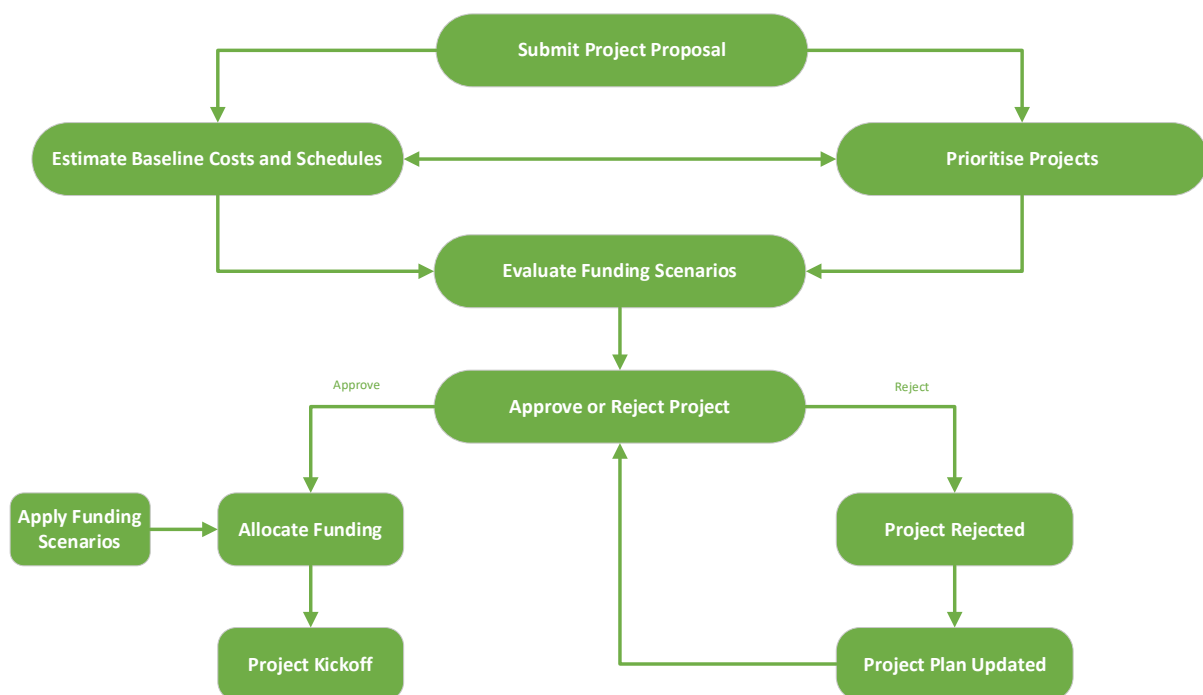
3.3.1.3 Critical path

In project management, the critical path is the longest sequence of tasks that must be completed to complete a project. The tasks on the critical path are called critical activities because if they're delayed, the whole project completion will be delayed. Finding the critical path is very important for project managers because it allows them to:

- Accurately estimate the total project duration

- Identify task dependencies, resource constraints and project risks

- Prioritize tasks and create realistic project schedules

To find the critical path, project managers use the critical path method (CPM) algorithm to define the least amount of time necessary to complete each task with the least amount of slack.

The Critical Path is the chain of activities where the earliest and the latest times coincide showing a zero float and show the completion of the project in the earliest possible time - the critical path:
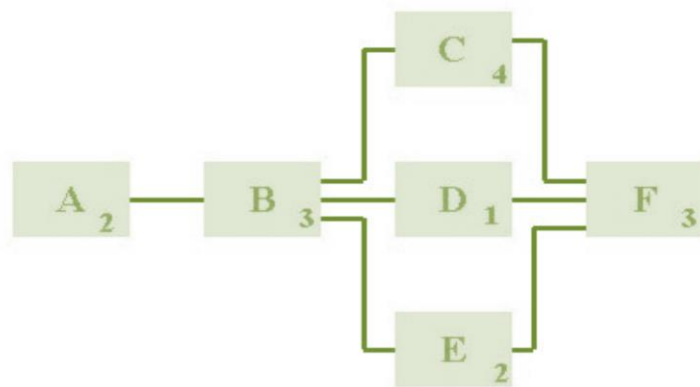
o First, notice that there are three PATHS in this network. A PATH is a sequential string of activities from project beginning to project end. The three paths are A-B-C-F, A-B-D-F and A-B-E-F.

o We can determine how long it would take to complete a sequence of activities along a path by adding up the durations of each activity on the path. So, path A-B-C-F will take (2+3+4+3 = 12) 12 days to complete.

o All three paths must be completed to finish the project. However, it is the longest path that will determine how long it will take to complete the overall project.

o The longest path is called the CRITICAL PATH.

o The longest path through the network is called the Critical Path because any delays to the activities on that path will delay the overall completion of the project.

Formative Activity 17: Project deliverable (KT0303)

Complete the following Formative Activity as per the instructions from the facilitator

3.4 Work performance data (KT0304)

Work performance data are measurements and observations that are identified relating to the tasks performed during project execution. It is raw data that is collected by the project team for analysis. Once the raw data is analysed by the project team it becomes work performance information. The work performance information is then used by the project manager to make decisions about the status of the project and the workflow of the project work.

It indicates the level of compliance with the project management requirements. Other factors that are important in this data include the number of validation cycles performed within a given period and the severity of the non-conformities.

It investigates the status of different project parameters such as time passed, amount completed, costs and progress of the project. This particular project management data encompasses the scope, time, costs, communications, quality, risks and procurement.

The data is collected during the execution phase of the project and is sent to different controlling processes for further analysis. It is one of the inputs needed by the Validate Scope and Control Costs processes.

Examples of work performance data are:

- Work completed.
- Key performance indicators (KPI's).
- Technical performance measures.
- Actual start and finish dates of activities.
- Status of deliverables.
- Schedule progress.
- Amount of change requests.
- Number of defects.
- Actual cost.
- Actual duration.

Formative Activity 18: Work performance data (KT0304)

Complete the following Formative Activity as per the instructions from the facilitator

3.5 Change requests (KT0305)

A change request is a formal proposal to modify any document, deliverable, or baseline.

- An approved change request will replace the associated document, deliverable, or baseline and may result in an update to other parts of the project management plan.

- When issues are found while project work is being performed, change requests are submitted, which may modify project policies or procedures, project scope, project cost or budget, project schedule, or project quality.

- Other change requests cover the needed preventative or corrective actions to forestall negative impact later in the project.

- Requests for a change can be direct or indirect, externally, or internally initiated, and can be optionally or legally/contractually mandated, and may include:
  o Corrective action: an intentional activity that realigns the performance of the project work with the project management plan
  o Preventative action: An intentional activity that ensures the future performance of the project work is aligned with the project management plan
  o Defect repair: An intentional activity to modify a nonconforming product or product component
  o Updates: Changes to formally controlled project documents, plans, etc., to reflect modified or additional ideas or content. PMBOK 5; p.85

- A Change Request is any request that changes the project requirements.

- A Change Request can be defined as any request that is submitted to whatever change control board or decision-making group has been implemented.

- These change requests can consist of changes which range from minor changes to significant changes that drastically alter the project; however, typically formal change requests involve changes that are more significant, and the less impactful changes are made at the project management level.

- A typical change request can request a change to several project areas including:
  o requests to expand or reduce the scope of the project,
  o requests to modify policies,
  o procedures,

- o plans, or processes,

- o requests to modify expenditures, and

- o requests to update of modify schedules.

- Change requests can be made directly or indirectly and can be initiated internally or externally.

  - o One constant throughout most change request processes is that change request must be made formally, via a written proposal or a project change log request form, and that changes are not to be implemented until they are formally approved.

- An approved change request refers to a change request that has been submitted by the requestors, has been reviewed by the appropriate parties through use of the integrated change control process, and has been granted authorisation to be take place.

Standard Change Request Template

Change Request	
Project:	**Date:**
Change Requestor:	**Change No:**
Change Category (Check all that apply): □ Schedule □ Cost □ Scope □ Requirements/Deliverables □ Testing/Quality □ Resources	
Does this Change Affect (Check all that apply): □ Corrective Action □ Preventative Action □ Defect Repair □ Updates □ Other	
Describe the Change Being Requested:	
Describe the Reason for the Change:	
Describe all Alternatives Considered:	

Describe any Technical Changes Required to Implement this Change:	
Describe Risks to be Considered for this Change:	
Estimate Resources and Costs Needed to Implement this Change:	
Describe the Implications to Quality:	
Disposition: □ Approve □ Reject □ Defer	
Justification of Approval, Rejection, or Deferral:	

Change Request Log Template

Change Request No.	Date Submitted	Submitted by	Change Request Description	Classification (High, Medium, or Low)	Cost Impact	Schedule Impact	Impact on Other Areas	Change Request Approval Date	Change Request Approved by	Status

Formative Activity 19: Change requests (KT0305)

Complete the following Formative Activity as per the instructions from the facilitator

3.6 Document updates (KT0306)

During the project, the documents that are used by the project team must be constantly updated. Ensuring all project recipients are working to the latest version of documents and drawings or specifications reduces rework and saves time and cost. Each document may be revised several times and keeping track of the latest revision can become a nightmare.

This problem becomes even more complex when documents or drawings are distributed to many consultants or sub-contractors. It then becomes very important to distribute the latest revisions to each recipient as soon as possible.

Document management will:

- Bring about financial savings

- Ensure records are stored safely and securely

- Lead to improvements in organisational efficiency

- Simplify and improve access to records

- Result in better customer service

- Ensure legal compliance

The benefits of document management can be split into two categories: tangible and intangible benefits.

Let us first look at a document management system has to offer:

Tangible benefits:	Intangible benefits:
Financial savings Staff productivity is increased due to the time saved in searching for documents. • One of the biggest hidden costs that paper-intensive businesses face is the time it takes to work with paper files. • Say it takes an employee five minutes to walk to a records room, locate a file, act on it, refile it, and return to his/her desk.	**Security** Better control of the security, monitoring and flow of information will result from an effective document management system. Threats from outside (competition, identity thieves, etc.) and inside (disgruntled employees, employee theft, etc.) threaten the integrity and value of companies' most important information. With document management, one implements an audit trail showing who has accessed or updated documents.

- At just four files per day, that's over 86 hours per year spent filing – just calculate the cost in wages!
- At ten files per day, that shoots up to 216 hours per year - and that's only for one employee!
- A system that lets employees find and work with those documents without ever leaving their desks can instantly slash those costs.

Electronic document management eliminates the "lost document" cost - the time it takes to recreate a document that's been destroyed or misplaced.

Additional cost savings come from the office space that can be freed by eliminating most paper records.

- With real estate costs rising rapidly in many major cities, converting records rooms into usable office space can save considerable amounts of money.
- In other cases, you may be able to eliminate warehousing costs for years of old records.

The ability to answer telephone queries due to almost instant access to information negates the need to call clients back, thus saving on telephone calls.

Access

The Web makes it easier and easier for employees to work remotely.

The right document management system allows employees to access vital records from wherever they are.

This will lead to a reduction in photocopying, faxing and courier/mail document transport as everybody refers to an electronic copy of the document

Disaster recovery

Whether existing documents are paper or electronic, one should have adequate disaster recovery plans in place.

Document management protects paper records by creating copies that can be backed up in multiple ways, including off-site data backups and other steps to ensure that a fire, flood, or break-in won't cripple the business or delay the project.

Process consistency

A document management system enforces consistency to the degree you want it.

Different departments or projects may have different approval processes - but once those are defined, the system will make sure they're followed.

Every organisation must capture information, store it, and make it accessible for future use.

In Records Management, strict regulation or legislation may govern the process.

Both the volume of administrative data and the speed with which it must be processed have increased dramatically.

Much of this pressure has resulted from increasingly onerous legislation and regulation as well as the inevitable pressure of cash flows.

Sound document and content management are fundamental to efficient business administration.

Effective document and content management increases internal efficiency, which in turn benefits customer service and satisfaction.

Customer transactions are equally as important to commercial, manufacturing or service businesses as they are to non-commercial operations.

A high proportion of these transactions involve actions that exchange or process electronic or paper documents.

The speed with which information can be captured and subsequently retrieved is a vital organisational performance factor.

There is pressure from customers' increased expectations of speed and quality of service.

- Information must be available on-demand, accessible through diverse channels and most important of all, must be processed in a consistent and coherent way.

In parallel with customer transactions, the growth in business-to-business or intra-organisational transactions is placing increasing pressure on organisations' document and content management.

- Although the volume of business-to-business transactions is likely to be lower than those made between the company and its customers, their greater value and strategic importance mean that efficiency and accuracy are of paramount importance.

Reasons for document control:

- Identifying, securing, and finding documents on a project

- Identification systems for documentation

- The causes and effects of uncontrolled changes and access to documentation

Document control consists of the following practical steps:

- Processing of incoming and internal documents

- Maintenance of a document register

- Distribution of documents to staff and other parties who need them

- Maintaining an audit trail of who got what, when and why

- Management of revised documents and their distribution and archiving

A controlled document is just that: under control; for example, a drawing for fabrication purposes in your plant.

- You will want to control it so that your fabricators have the latest version of the drawing to work on. If changes occur, then you will need to issue them with the latest revision and at the same time collect back the previous version.

- This ensures that all drawings are current.

- The number of copies of control drawings issued and to whom they are issued need to be recorded and tallied when you collect back the documents and at the same time issue new ones.

- ISO 4.5.2 states that "Invalid and/or obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use".

- If a controlled document is changed, a record of the change must be made. This means one must have a History of Changes.

- If a document is changed, the people who use it must know about the change. This means there must be a distribution list or other effective way to let everyone who uses it, know that the document has changed.

Versioning:

- Is a process by which documents are checked in or out of the document management system, allowing users to retrieve previous versions and to continue work from a selected point.

- Versioning is useful for documents that change over time and require updating, but it may be necessary to go back to a previous copy.

- Keeping a record of versions of deliverables will aid the avoidance of errors. The Administrative Support staff member will record version changes, author, and dates.

The benefits of version control are:

- It provides one method for an entire team to use; everybody operates under the same 'ground rules'.

- Changes are orderly rather than chaotic, saving development time

- Provides an audit trail, a paper or 'electronic' trail that gives a step by step documented history of a transaction, decision, or process.

- The ability to track changes promotes accountability and makes it easier to find the right person to solve problems in the materials maintained.

- A list of exact changes made can be generated quickly and easily, making it easier to advise users of the information on how it has changed from version to version.

- It is easy to 'page back' to an earlier version of the information if a serious mistake was made during a change.

Formative Activity 20: Document updates (KT0306)

Complete the following Formative Activity as per the instructions from the facilitator

3.7 Inputs related to directing and managing project work (KT0307)

Directing and managing project work involves executing the project activities to complete the project objectives Resources are assigned and managed, and changes are controlled. The inputs for this process include but are not limited to:

- **Project Management Plan** – Any component of the project management plan
- **Project Documents** – Project documents that are considered as inputs include but are not limited to:
    - **Change log** – Status of all change requests
    - **Lessons learned register** – Lessons learned are used to improve the performance of the project and avoid repetitive mistakes.
    - **Milestone list** – A list of the scheduled dates for specific project milestones.
    - **Project communications** – Performance reports, deliverable status, and information generated by the project.
    - **Project schedule** – A list of work activities and their durations, resources, and planned start/finish dates.
    - **Requirements traceability matrix** – The link between the product requirements and the deliverables.
    - **Risk register** – Information on threats and opportunities that may impact project execution.
    - **Risk report** – Information on sources of overall project risk along with a summary on individual project risks.
- **Approved Change Requests** – Change requests reviewed and approved for implementation by the project manager or change control board. These change requests can also modify the project management plan and project documents.
- **Enterprise Environmental Factors** – Factors that influence the Direct and Manage Project Work Process include but are not limited to:
    - Organizational structure, management practices.
    - Infrastructure (e.g., existing facilities and equipment).
    - Stakeholder risk thresholds (e.g., allowable cost overrun).
- **Organizational Process Assets** – Include but are not limited to:
    - Organizational standard policies, processes, and procedures.
    - Issue and defect management procedures defining issue and defect controls.

- o issue and defect identification and resolution, and action item tracking.
- o Issue and defect management database(s) containing historical issue and defect status, issue and defect resolution, and action item results.
- o Performance measurement database used to collect and make available measurement data on processes and products.
- o Change control and risk control procedures.
- o Project information from previous projects (e.g., scope, cost, schedule, performance measurement baselines, project calendars, project schedule network diagrams, risk registers, risk reports, and lessons learned repository).

Formative Activity 21: Inputs related to directing and managing project work (KT0307)

Complete the following Formative Activity as per the instructions from the facilitator

3.8 Tools and techniques for directing and managing project work (KT0308) (IAC0303)

Tools and techniques for directing and managing project work include but are not limited to:

- **Expert Judgement** – Expertise from specialised individuals or groups with knowledge in the following topics should be considered:
    - Technical knowledge on the industry.
    - Cost and budget management.
    - Legal and procurement.
    - Legislation and regulations.
    - Organisational governance.

- **Project Management Information System (PMIS)** – Access to the following Information technology software tools:
    - Scheduling software.
    - Authorisation systems.
    - Configuration management systems.
    - Information collection and distribution systems.
    - Knowledge base systems.
    - Automated reporting on key performance indicators (KPI).

- **Meetings** – Meetings are required to discuss and address project related topics. Attendees typically include the following:
    - Project manager
    - Project team members
    - Stakeholders

    Meeting types should include but are not limited to:

    - Kick-off meeting
    - Technical meetings
    - Scrum daily meetings
    - Steering group meetings
    - Problem solving meetings
    - Progress update meetings

Formative Activity 22: Tools and techniques for directing and managing project work (KT0308) (IAC0303)

Complete the following Formative Activity as per the instructions from the facilitator

Outcome 4

Guidelines for Topics

KM-02-KT04: Monitor and control project work

Topic elements to be covered include:

- KT0401 Concepts and flow of data related to monitoring and controlling project work

- KT0402 The importance and benefits of monitoring and control project work

- KT0403 Inputs related to monitoring and controlling project work

- KT0404 Tools and techniques for monitoring and controlling project work

Internal Assessment Criteria and Weight

- IAC0401 Concepts and the flow of data related to monitoring and controlling project work can be explained

- IAC0402 The importance and benefits of monitoring and controlling project work can be explained

- IAC0403 Documents related to monitoring and controlling project work can be identified, the application explained, evaluated for completeness, gaps identified, and corrective measures motivated

Weight: 20%

KM-02-KT04:

Monitor and control project work

Topic elements to be covered include:

4.1 Concepts and flow of data related to monitoring and controlling project work (KT0401)

4.2 The importance and benefits of monitoring and control project work (KT0402)

4.3 Inputs related to monitoring and controlling project work (KT0403)

4.4 Tools and techniques for monitoring and controlling project work (KT0404)

4.1 Concepts and flow of data related to monitoring and controlling project work (KT0401) (IAC0401)

Monitoring and controlling project work can mainly be looked as a control function that takes place at all stages of a project i.e. from Initiation through Closing. The Monitor and Control Project Work process tracks, reviews, and reports the overall progress of the project to meet the objectives outlined in the project management plan. This allows the stakeholders to understand the status of the project throughout the project lifecycle and to immediately address any issues that might occur.

The following diagram provides an overview and how the data flow during the process:
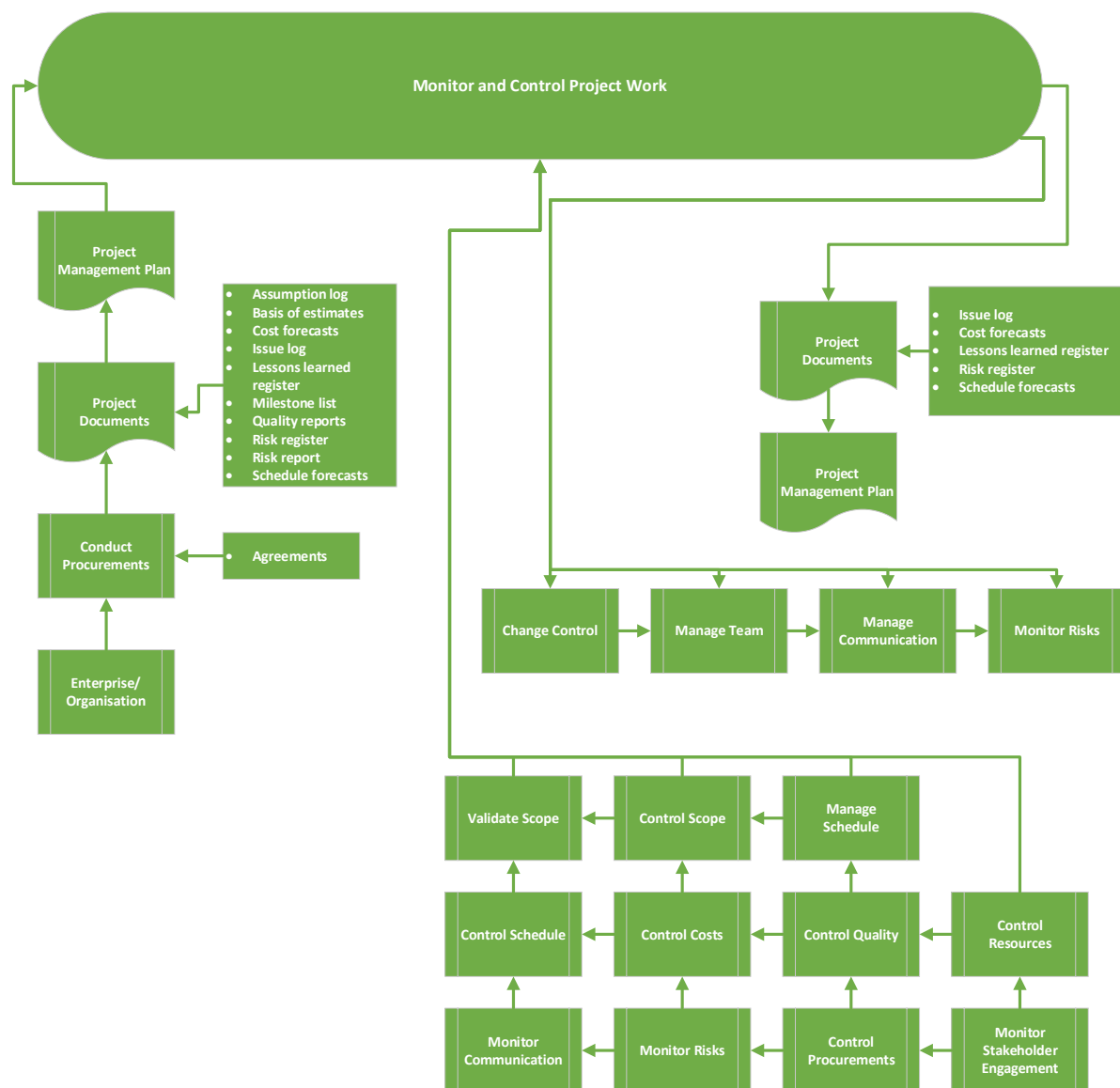
The primary purpose of monitoring and control in project management is to identify problems before they occur and make adjustments. These changes may require re-evaluating and updating the project plan.

Project monitoring and control are essential to completing a project on time, on budget, and within scope. Monitoring and control processes identify deviations from the project plan. Project monitoring and control ensure that performance is seamless, efficient, and on track.

Formative Activity 23: Concepts and flow of data related to monitoring and controlling project work (KT0401) (IAC0401)

Complete the following Formative Activity as per the instructions from the facilitator

4.2 The importance and benefits of monitoring and control project work (KT0402) (IAC0402)

Monitoring is a process performed during the entire duration of a project. It involves collecting, measuring, and assessing measurements and trends. Continuously monitoring a project provides the project management team with insight into the health of the project and identifies any problematic areas.

Control determines the corrective and preventative measures required to replan if necessary as well as determining if the actions taken have resulted in resolution of the issue.

The Monitor and Control Project Work process involves the following tasks:

- Comparing actual performance against the project management plan.
- Periodically assessing the performance of the project to determine if corrective or preventative measures are required and recommending those actions.
- Checking the status of the project risks.
- Maintaining an accurate information base regularly with regards to the project deliverables and ensuring accurate documentation is upheld through to project completion.
- Providing support information for status reporting, progress measurement, and forecasting.
- Providing updated cost and schedule forecasting.
- Monitor approved changes implementations.
- Providing applicable reporting on the progress of the project to program management if necessary.
- Ensuring that the business needs and the project remain aligned.

Formative Activity 24: The importance and benefits of monitoring and control project work (KT0402) (IAC0402)

Complete the following Formative Activity as per the instructions from the facilitator

4.3 Inputs related to monitoring and controlling project work (KT0403)

The project manager must balance the requirements of different knowledge areas to control the project. Project Managers create performance measures or use existing organisational performance measures to identify project performance at regular intervals during the course of the project.

Monitoring and Controlling project work involve monitoring any other performance measure that the project manager has created or used for this project. Inputs considered for this Monitor and Control Project Work process include but are not limited to:

- **Project Management Plan** – The document which outlines how the project will be executed, monitored, controlled, and closed. It consolidates all the plans and baselines required to manage the project.

- **Project Documents** – These documents include but are not limited to:

  o **Assumption log** – Information on the assumptions and constraints which affect the project.

  o **Basis of estimates** – An indication of how the various estimates were derived and how the response to variances decisions were formed.

  o **Cost forecasts** – Information from past projects' performances is used to forecast the costs for the project and determine if the project remains within the cost tolerance ranges of the budget.

  o **Issue log** – Document and monitor the responsible resource for the resolution specific issues by a target date.

  o **Lessons learned register** – Information on effective variance responses, corrective actions as well as preventive methods.

  o **Milestone list** – Specific milestones and their scheduled dates are used to check if the planned milestones have been met

  o **Quality reports** – This report includes quality issues, process recommendations, improvements, corrective actions recommendations, and the summary from the Control Quality process.

- o **Risk register** – Information on threats and opportunities encountered during the project execution.

- o **Risk report** – Information on the overall and individual risks.

- o **Schedule forecasts** - Information from past projects' performances is used to forecast the schedule for the project and determine if the project remains within the schedule tolerance ranges.

- **Work Performance Information** – Work performance data is collected through the execution of the work and passed onto the controlling processes. The work performance data is compared against the project management plan components and project documents to indicate the project performance. This comparison process is how the work performance data becomes work performance information.

  Work performance metrics such as scope, schedule, budget, and quality are defined in the project management plan. Performance data is collected through the controlling processes and compared to the plan and other variables to provide the work performance.

  An example of this process is: performance data on funds expended are compared to the budget, work completed, resources used, and the cost schedule. This provides the context required to determine if the project is on budget or if there is a variance. This indicates whether the variances are within the thresholds or if preventive or corrective action is required.

- **Agreements** – A procurement agreement includes terms and conditions and may include other items that the buyer specifies that the seller needs to provide or perform. If part of a project is to be outsourced, the project manager needs to ensure that the correct agreements are in place to meet the specific needs of the project as well as the organisational procurement policies.

- **Enterprise Environmental Factors** – These include but are not limited to:

  - o Project management information systems such as costing, scheduling, resource management, performance indicators, databases, project records, and financial systems.

- Infrastructure i.e., existing facilities, and equipment.

- Expectations and risk thresholds set by the stakeholders.

- Industry and government standards.

- **Organisational Process Assets** - These include but are not limited to:

    o Organisational policies and procedures, and processes.

    o Financial control procedures.

    o Monitoring and reporting methodology.

    o Issue management procedures, controls, identification, resolution, and tracking.

    o Organisational knowledge base for process measurements and lessons learned.

Formative Activity 25: Inputs related to monitoring and controlling project work (KT0403)

Complete the following Formative Activity as per the instructions from the facilitator

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4.4 Tools and techniques for monitoring and controlling project work (KT0404) (IAC0403)

When we think about monitoring and controlling project work, we should consider that it should be measured against the project management plan. Tools and techniques for this process include but are not limited to:

- **Expert Judgement** – Individuals or groups with specialised knowledge in the following topics need to be considered:
  - Value analysis
  - Interpretation and contextualisation of data.
  - Duration and costs estimation techniques.
  - Trend analysis.
  - Technical knowledge pertaining to the project.
  - Risk management
  - Contract management
- **Data Analysis** – Data analysis techniques that include but are not limited to:
  - **Alternatives analysis** – Used to formulate a combination of corrective and preventive actions for deviation resolution.
  - **Cost-benefit analysis** – Aids in determining the ideal corrective action based on cost for deviation resolution.
  - **Earned value analysis** – An integrated perspective on scope, schedule, and cost performance.
  - **Root cause analysis** – Focused on identifying the main reasons for a problem. Identifies the deviation reasons and what the project manager needs to focus on to achieve the project objectives.
  - **Trend analysis** – Forecast future performance based on previous results. Checks ahead in the project for trends that might result in slippages and alerts the project manager of the possibility for schedule issues in the future if the current trend persists. This provides the project team with sufficient time to analyse and correct any anomalies. It can also be used for the recommendation of preventive actions if required.
  - **Variance analysis** – The variance between planned and actual performance. This can include duration and costs estimates, resources utilisation, resource

rates, and technical performance. The variance analysis reviews the variances from an integrated perspective taking into consideration the following elements in relation to each other to get an overall variance view:

- Cost
- Time
- Technical variances
- Resource variances

- **Decision Making** – Voting is a technique that may be used to make decisions based on unanimity, majority, or plurality.

- **Meetings** – Meetings can take place in person, virtual, formal, or informal. Meetings may include project team members and stakeholders if appropriate. Types of meetings include but are not limited to user groups and review meetings.

Formative Activity 26: Tools and techniques for monitoring and controlling project work (KT0404) (IAC0403)

Complete the following Formative Activity as per the instructions from the facilitator

Outcome 5

Guidelines for Topics

KM-02-KT05: Integrated change control

Topic elements to be covered include:

- KT0501 Integrated change control concepts and flow of data

- KT0502 Importance and benefits of integrated change control

- KT0503 Inputs related to integrated change control

- KT0504 Tools and techniques for integrated change control

- KT0505 Integrated change control processes and outputs

Internal Assessment Criteria and Weight

- IAC0501 Concepts and the flow of data related to integrated change control can be explained

- IAC0502 The importance and benefits of monitoring and integrated change control can be explained

- IAC0503 Documents related to integrated change control can be identified, the application explained, evaluated for completeness, gaps identified, and corrective measures motivated

Weight: 20%

KM-02-KT05:

Integrated change control

Topic elements to be covered include:

5.1   Integrated change control concepts and flow of data (KT0501)

5.2   Importance and benefits of integrated change control (KT0502)

5.3   Inputs related to integrated change control (KT0503)

5.4   Tools and techniques for integrated change control (KT0504)

5.5   Integrated change control processes and outputs (KT0505)

5.1 Integrated change control concepts and flow of data (KT0501) (IAC0501)

A project scope change control system, documented in the project scope management plan, defines the procedures by which the project scope and product scope can be changed. The system includes the documentation, tracking systems, and approval levels necessary for authorising changes. The scope change control system is integrated with any overall project management information system to control project scope. When the project is managed under a contract, the change control system also complies with all relevant contractual provisions.

The term change control refers to the process which consists of the following actions related to change:

- identification

- documentation

- formal approval or rejection

- control over all changes that are going to take place to the project baselines.

The baseline refers to the conditions that exist at a given point, usually the start point, of an activity, study, or a project.

The phrase integrated change control refers directly to a project management process that is quite often implemented over the course of a project's life.

A change control system is any system that has been implemented that serves the essential purpose of assuring that the process of making changes is not done arbitrarily and without thought but rather is carefully considered and ultimately signed off by a responsible party.

The change control system includes:

- the specific elements involved in ultimately making the decision to approve, reject, or postpone any changes

- all the processes that should be utilised in the process.

The Change Control System, in addition to providing as established policy for the routine process of making changes, should also have in place provisions for emergency changes which may arise.

The flow of the change control procedure is as follows:

```
┌─────────────────────────────┐
│   Submit request for change │
└─────────────────────────────┘
              ↓
┌─────────────────────────────┐
│   Estimate effort to evaluate│
│        change request        │
└─────────────────────────────┘
              ↓
┌─────────────────────────────┐
│   Determine whether change   │
│  request should be evaluated │
└─────────────────────────────┘
              ↓
┌─────────────────────────────┐
│    Analyse change request    │
└─────────────────────────────┘
              ↓
┌─────────────────────────────┐
│   Assess need for escalation │
└─────────────────────────────┘
              ↓
┌─────────────────────────────┐
│    Make implementation       │
│         decision             │
└─────────────────────────────┘
```
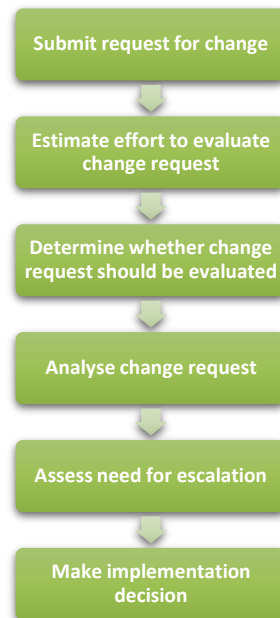
When communicating this process flow to the stakeholders, the following should be explained:

1. Any participant or other concerned party may raise Change Requests.

    •   The Project Office team and Project Manager will ensure they are captured and proactively manage them to conclusion.

2. An initial review should be made to examine the need for the change, how it could be achieved and what the consequences would be.

    •   The most appropriate member of the Project Team would normally perform this review. Based on those conclusions, the recommended action would be proposed.

3. There are three possible courses for the approval of the change:

    •   Minor changes within scope can be approved by the Project Manager.

- Any change affecting an external sub-contractor would need to be reviewed with that contractor who would agree any necessary contract revisions or payments etc.

- Changes of scope and contract revisions would require the approval of the Steering Committee (or it might have been a Change Control Board).

4. In making the decision, the Project Manager, Change Control Board or Steering Committee would be guided by the pre-established principles for making change decisions.

5. After the action is agreed, the work is assigned for action by the Project Team and/or the external sub-contractor.

6. When complete, the action would be reviewed, and the Change Request closed.

There are two separate reviews that occur during the change control process. These reviews are:

- Firstly, to validate the change proposal is justified

- Secondly, to access the impact of the change on the application

During your communication session, define and agree:

- On what basis changes should be approved

- Who does what

- The membership of the Change Control Board(s)

- The detailed procedures, forms, etc.

- Protocols for levels of authority, e.g., what types of change can be approved without reference to the project's business owners

- Which tools will be used to support and manage the process

- How to communicate and promote the process and its importance to all participants

A change review committee, or board, must be established to evaluate all change requests

A set turnaround time must be established for the review process from submission to acceptance or rejection. This ensures that "approved" changes are processed in a timely manner.

The review committee evaluates the impact of the proposed change on the application.

Factors to consider in reviewing change requests include:

- Skill level of personnel required to complete the proposed change

- Impact of the proposed change on the application schedule

- Impact of the proposed change on the application budget

- Risk levels of the proposed change

- Does the proposed change require application rework?

- Does the proposed change require additional resources (e.g., computer time, materials, tools, people, and technology)?

The change review committee documents these factors on the original change request form and returns the form to the application owner for further action.

The application owner adds the changes (tasks to be complete) into the application inventory to assess the impact the proposed change has on the application budget, schedule, and resources

Change requests should be assigned a change priority classification code based on a set of standards.

A sample set of standards is as follows:

- P1 – Critical:

  - A critical priority change request is considered to be imperative to the success of the application, and likewise, may have a detrimental impact to the application if not addressed promptly.

  - This type of change request is mandatory and must be completed.

- The timeframe for estimating the effort and cost required to implement a critical change request should be one (1) week or less.

  - Examples of critical change requests are legal mandates, functionality to meet core business process requirements, or data integrity with respect to database content.

- P2 – High:

  - A high priority change request is considered to be important to the success of the application.

  - The timeframe for estimating the effort and cost required to implement a high priority change request should be two (2) to four (4) weeks.

    - Examples of high priority change requests are issues and problems resulting from data integrity, legal mandates, and add-ons to improve data quality.

- P3 – Medium:

  - A medium priority change request has the potential to impact successful completion of the application but is neither an immediate help nor hindrance.

  - The timeframe for estimating the effort and cost required to implement a medium priority change request should be four (4) to six (6) weeks.

    - Examples of medium priority change requests are requests that improve workflow processes.

- P4 – Low:

  - Low priority change requests need to be addressed if the time and budget permit.

  - Low priority changes requests are managed, as resources are available.

  - The timeframe guideline for estimating the effort and cost required to implement a low priority change request is more than six (6) weeks.

- Examples of low priority change requests are cosmetic changes or "fixes" that do not affect business functional requirements or deliverables.

Formative Activity 27: Integrated change control concepts and flow of data (KT0501) (IAC0501)

Complete the following Formative Activity as per the instructions from the facilitator

5.2 Importance and benefits of integrated change control (KT0502) (IAC0502)

Change during the course of a project is inevitable, thereby mandating some type of change control process.

Let's define what we mean by change in the context of managing a project:

Scope Change	Where a request is considered to change the agreed scope and objectives of the project to accommodate a need not originally defined to be part of the project.
Change Control (sometimes referred to as "Change Management")	The management process for requesting reviewing, approving, carrying out and controlling changes to the project's deliverables. Change Control is usually applied once the first version of a deliverable has been completed and agreed.
Configuration Management or Version Control (sometimes also called "Change Control")	Technical and administrative control of the multiple versions or editions of a specific deliverable, particularly where the component has been changed after it was initially completed. Most typically this applies to objects, modules, data definitions and documentation.
Change Management	Normally used to mean the achievement of change in human behaviour as part of an overall business solution.
Change Programme	Usually used to mean a large, multi-faceted business solution (not just the human behavioural element).

*Change is inevitable. During a project there will be many **good reasons** why things need to change. There will also be a few bad reasons - bad, but unavoidable.*

Let's consider some of those reasons...

Change Driver	Comment
The business needs have changed	Business needs are changing ever more rapidly, particularly as competitors explore the new business models of eCommerce. All businesses must be willing to change if they are to remain competitive.
The organisation has changed	It is surprisingly common to find that the organisation undergoes some form of restructuring during the life of a project. This could involve mergers, acquisitions, being taken over, new departments, new business leaders, new products, new accounting structures, new locations etc.
Exploit technology improvements	The available technology improves constantly. All the time your Project Team are trying to exploit the various technology components, each of those components has a large team of people working to create a better version - and thus to make your version obsolete.
The organisation's priorities have changed	Although the scope and objectives of your project remain valid, the organisation may decide that there are other business needs that have high priority and should be addressed.
New business partners and channels	Organisations are responding to the rapidly changing marketplace by forming new business partnerships and alliances. New business channels are becoming available through those relationships, e.g. using industry hub portals and intermediaries.
New legislation and regulations	There may be unavoidable external requirements over which you have no control, such as new regulations for data privacy, changed regulatory reporting requirements, etc.

Change Driver	Comment
Globalisation, standards etc	The organisation is making progress in presenting and managing itself as a global entity and, hence, there are new or revised standards for such things as website design, database definitions, corporate knowledge sharing, data warehouses, etc.
Effect of other projects and initiatives	Other initiatives within the organisation result in revised needs for this project, e.g. there is a new accounting system so the interface from our new system will have to be changed.
We messed up	Or, to put it more discreetly, elements of the project's design and deliverables do not fully meet the defined need and will need to be re-worked.

Approved change requests are an output of the Perform Integrated Change Control Process, and include those requests reviewed and approved for implementation by the change control board (CCB).

- The approved change request may be a corrective action, a preventative action, or a defect repair.

- Approved change requests are scheduled and implemented by the project team and can impact any area of the project or project management plan.

- The approved change requests can also modify the policies, project management plan, procedures, costs, or budgets or revise the schedules.

- Approved change requests may require implementation of preventative or corrective actions." PMBOK 5; p. 82

- "Approved change requests can require new or revised cost estimates, activity sequence, schedule dates, resource requirements, and analysis of risk response alternatives." PMBOK 5; p. 96

- "Change requests are processed according to the change control system by the project manager, CCB, or by an assigned team member.

- Approved change requests will be implemented through the Direct and Manage Project Work process.

- The disposition of all change requests, approved or not, will be updated in the change log as part of the updates to the project documents." PMBOK 5; p. 99

After the change request evaluation, the application owner schedules a change decision meeting.

- Participants in the change decision meeting include the application owner and the change review committee along with the originator of the change request.

- The application owner presents the proposed change and the results of the evaluation, including a copy of the proposed revised application plan illustrating the impact of the change.

- The requestor may speak in defence of the change (if necessary) and the evaluators may defend their evaluation (if necessary).

- The application owner acts as a neutral observer.

- The application owner gets involved only if the evaluation indicates that the proposed change would have a significant impact on the application.

- The change control criteria define the boundaries, or range, within which changes will be accepted, and at what level the change request gets escalated to higher management for the final decision.

All change requests alter the scope of the application in some manner; thereby affecting the cost and functionality of the application.

The following are examples (samples) of boundaries or ranges for change requests:

- The change does not increase the application budget.

- Executing the change request takes a maximum of "h" hours of staff time to complete.

- The cost of the change is less than "xxx" Rand

- The benefit of the change must always exceed the application cost of the change

When application change requests are rejected, the rejections are final for the duration of the application life cycle, unless the environment in which the change was originally evaluated is altered significantly. This rigid approach saves time that would be wasted in re-evaluating old issues.

The Change Control process continues throughout the project, so no specific action is necessarily required at the end of each phase.

Formative Activity 28: Importance and benefits of integrated change control (KT0502) (IAC0502)

Complete the following Formative Activity as per the instructions from the facilitator

5.3 Inputs related to integrated change control (KT0503) (IAC0503)

Approved change requests affecting the project scope can require modifications to the WBS and WBS dictionary, the project scope statement, and the project scope management plan. These approved change requests can cause updates to components of the project management plan.

Typical change control process[3]
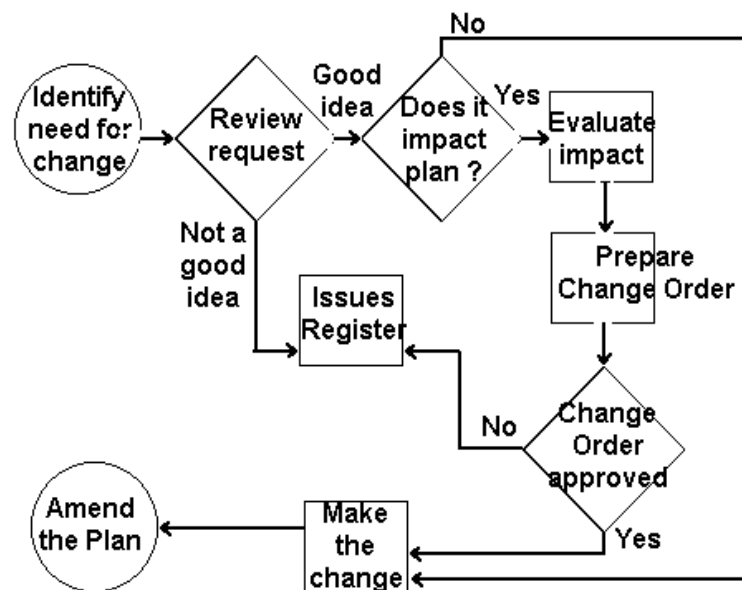
- A potential change in the project scope is identified. This potential change is reviewed. If it is not considered beneficial to the success of the project but will impact the project result if left unattended, an issue is recorded in the Issues Register.

- The change is then evaluated. If there is no impact on the project deliverables, budget or the schedule, the change is made and documented.
  Otherwise the calculations are made and the Change Order Form is completed.

- The Change Order Form is reviewed by the customer and / or the Change Control Board. If the change is approved, it is implemented and then documented.

If the change is not approved, there must be something that needs to be resolved, so an Issue is raised and resolved through that process.

Inputs for this Integrated Change Control process include but are not limited to:

- **Project Management Plan** – Components include but are not limited to:

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[3] http://projectmagazine.com/scope/writing-a-scope-statement_2.html

- **Change management plan** – Provides the direction for managing the change control process as well as documenting the roles and responsibilities of the change control board (CCB).
  - **Configuration management plan** – Describes the configurable items and identifies the items that will be recorded and updated.
  - **Scope baseline** – The definition of the project.
  - **Schedule baseline** – Assesses the impact the changes have on the project schedule.
  - **Cost baseline** – Assesses the impact of the changes to the project cost.
- **Project Documents** – Project documents used as inputs include but are not limited to:
  - **Basis of estimates** – Indicates how the duration, cost, and resource estimates were derived and used to determine the impact the changes have on time, budget, and resources
  - **Requirements traceability matrix** – Assesses how the project scope is impacted due to the change.
  - **Risk report** – Information is presented with regards to overall and individual project risks caused by change request.
- **Work Performance Reports** – Work performance reports which are associated with the Integrated Change Control process include:
  - Resource availability
  - Schedule and cost data
  - Earned value reports
  - Burnup or burndown charts
- **Change Requests** – Change requests are an output to many processes and include the following:
  - Corrective action
  - Preventive action
  - Defect repairs
  - Deliverable updates
  - Controlled document updates

Changes can impact the project baselines and so should include information on the following elements:

- o Cost of change implementation
- o Schedule dates modification
- o Resource requirements
- o Risks

These changes should be approved by the CCB, and customer and only approved changes should be added to the revised baseline.

- **Enterprise Environmental Factors** – These include but are not limited to:
  - o Legal restrictions.
  - o Government and/or industry standards.
  - o Legal and regulatory requirements and/or constraints.
  - o Organizational governance through people, policies and processes to meet strategic and operational objectives.
  - o Contracting and purchasing constraints.
- **Organizational Process Assets** – These include but not limited to:
  - o Change control procedures that determine how changes will be approved and validated, by utilising the following:
    - ▪ Organisational standards
    - ▪ Policies
    - ▪ Plans
  - o Approval and authorisation procedures
  - o Knowledge base containing the following:
    - ▪ Organisational standards
   - ▪ Policies
    - ▪ Procedures
    - ▪ Project documents

Formative Activity 29: Inputs related to integrated change control (KT0503) (IAC0503)

Complete the following Formative Activity as per the instructions from the facilitator

5.4 Tools and techniques for integrated change control (KT0504)

Integrated change control is the process of reviewing all change requests within a project, analysing those requests and implementing approved changes. Through integrated change control, project managers may have a more organised structure for changing a project. They can also determine the effects of a proposed change before implementation, allowing them to make better decisions for the project. The following are tools and techniques used for integrated change control:

- **Expert Judgement** - Individuals or groups with specialised knowledge or training should be considered in the following:
  - Technical knowledge of the industry
  - Legislation and regulations
  - Legal and procurement
  - Configuration management
  - Risk management
- **Change Control Tools** – Manual or automated tools may be utilised to facilitate the configuration and change management. Change control is focused identifying, documenting, and approving/rejecting changes to project documents, deliverables, or baselines. The tools to be used must be based on the needs of the project stakeholders and should support the following configuration management activities:
  - **Identify configuration item** – Product configuration definition and verification, labelling of products and documents, managing changes and accountability are the basis upon which the configuration item is identified and selected.
  - **Record and report configuration item status** – This is performed for each configuration item.
  - **Perform configuration item verification and audit** – These ensure that the composition of a configuration item is correct and that the changes are registered, assessed, approved, tracked and implemented correctly. Functional requirements which are defined in the configuration documents are then met.

The following activities should also be supported by the tools:

  - **Identify changes** – Identify a change item for processes or project documents.

- o **Document changes** – Documenting the change as a proper change request.

- o **Decide on changes** – Make a decision about changes to project documents, deliverables, or baselines based on a review of the changes; approve, reject or defer.

- o **Track changes** – Verification that changes are registered, assessed, approved, tracked, and communicated to the stakeholders.

- **Data Analysis** – Data analysis techniques used for this process include but are not limited to:

  - o **Alternatives analysis** – Assess the requested changes and decide which are accepted, rejected, or deferred.

  - o **Cost-benefit analysis** – Determines if the change request is worth it's associated cost.

- **Decision Making** - Decision-making techniques used for this process include but are not limited to:

  - o **Voting** – The decision whether to accept, defer, or reject the change request can be performed using the form of unanimity, majority, or plurality.

  - o **Autocratic decision making** – The responsibility for making the decision on behalf of the entire group lies with one individual.

  - o **Multicriteria decision analysis** – A systematic analytical approach according to a set of predefined criteria to evaluate the change requests, using a decision matrix.

- **Meetings** – Approvals, rejections, or deferrals of change requests are performed with the change control board (CCB) during the change control meetings. Changes usually have an affect on time, cost, resources, or risks. An essential part of the meeting is assessing the impact of these changes and alternatives to the changes requested should also be discussed. The decision is communicated to the requesting person or group.

The roles and responsibilities of the CCB are clearly defined in the change management plan.

Formative Activity 30: Tools and techniques for integrated change control (KT0504)

Complete the following Formative Activity as per the instructions from the facilitator

5.5 Integrated change control processes and outputs (KT0505)

The outputs in the integrated change control process are as follows:

- **Approved Change Requests** – Change requests are processed by the project manager and CCB according to the change management plan. The result is the approval, deferment, or rejection of the changes. Changes which are approved, are implemented through the Direct and Manage Project Work process. The rejection or deferment of changes of change requests are communicated to the requesting person or group.

  All change requests are recorded in the change log as a project document update

- **Project Management Plan Updates** – This process enables any change to the formally controlled project management plan. Changes to baselines are only performed to the latest baseline. In order to protect the integrity of the baselines and historical past performance data, past performance is not changed.

- **Project Documents Updates** - This process enables any change to the formally controlled project document. The change log is usually updated because of this process. The change log is used to document changes that occur during a project.

Integrated Change Control Process helps in separating the critical changes from the possible ones. By implementing integrated changes, the scope of the project will increase drastically and produce a better output.

It is suggested that a Change Control Board is established to review and approve the changes requested will help a smooth process of deploying changes and most importantly document all the changes that are made and process them to pass them on to the key stakeholders as information.

> *Formative Activity 31: Integrated change control processes and outputs (KT0505)*
>
> Complete the following Formative Activity as per the instructions from the facilitator

Outcome 6

Guidelines for Topics

KM-02-KT06: Project close out

Topic elements to be covered include:

- KT0601 Project close out control concepts and flow of data

- KT0602 The importance and benefits of project close out

- KT0603 Inputs related to project close out

- KT0604 Tools and techniques for project close out

- KT0605 Project close out processes and outputs

Internal Assessment Criteria and Weight

- IAC0601 Concepts and the flow of data related to project close out can be explained

- IAC0602 The importance and benefits of project close out can be explained

- IAC0603 Documents related to project close out can be identified, the application explained, evaluated for completeness, gaps identified, and corrective measures motivated

Weight: 10%

KM-02-KT06:

Project close out

Topic elements to be covered include:

6.1   Project close out control concepts and flow of data (KT0601)

6.2   The importance and benefits of project close out (KT0602)

6.3   Inputs related to project close out (KT0603)

6.4   Tools and techniques for project close out (KT0604)

6.5   Project close out processes and outputs (KT0605)

6.1 Project close out control concepts and flow of data (KT0601) (IAC0601)

The closing phase of project management is the final phase of the project lifecycle. This is the stage where all deliverables are finalized and formally transferred, and all documentation is signed off, approved, and archived.

The project closure process ensures that:

- All work has been completed according to the project plan and scope.

- All project management processes have been executed.

- You have received final sign-off and approval from all parties.

The project management closure process also gives the team the opportunity to review and evaluate the project's performance to ensure future projects' success.

The practice of project close-out finalises all project activities completed across all phases of the project to formally close the project

The process of finalising all project, phase, or contract activities. This process is performed once or at predefined points in the project.

The following diagram graphically demonstrate the project close out process:
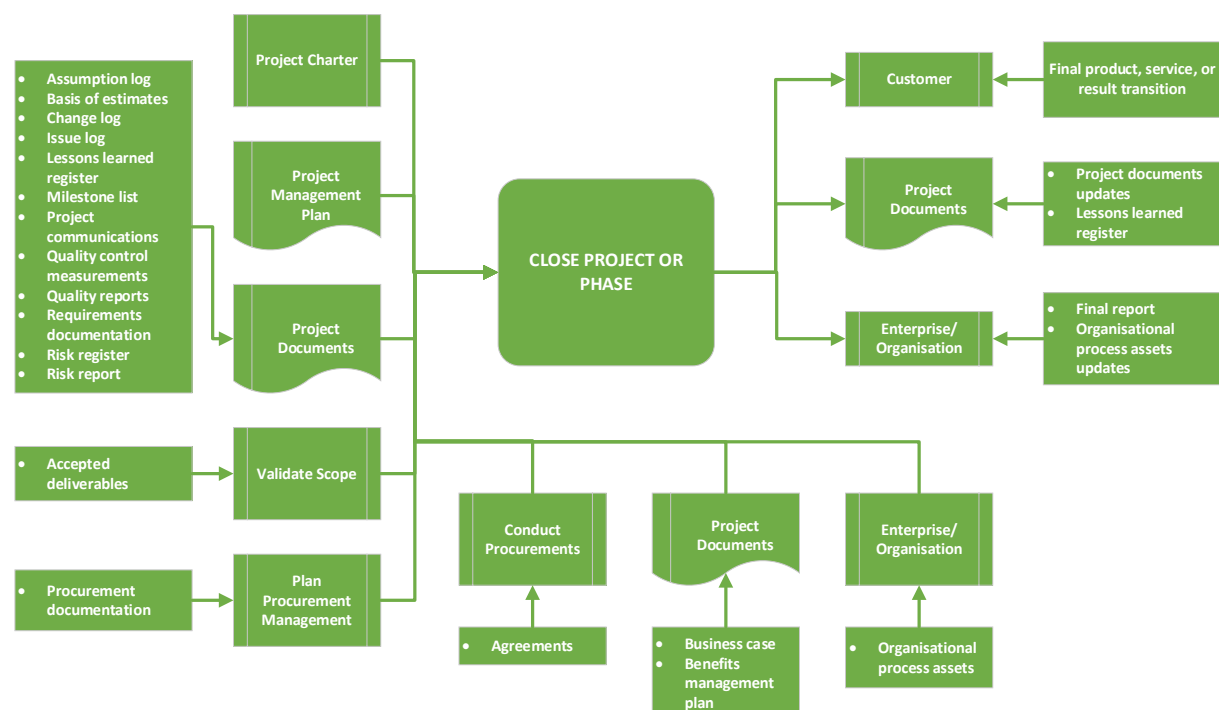
The project closure process also ensures the project is formally completed and is no longer considered a project, allowing you to hand the reins over to the correct team in charge of managing and maintaining the project's outputs.

By officially closing a project, you minimize risks, increase client satisfaction, and ensure all parties are on the same page. In other words, project closure is a process you can't afford to skip.

> ### *Formative Activity 32: Project close out control concepts and flow of data (KT0601) (IAC0601)*
> Complete the following Formative Activity as per the instructions from the facilitator

6.2 The importance and benefits of project close out (KT0602) (IAC0602)

Without a formal closing process, you risk letting crucial details fall through the cracks, which can result in confusion, a never-ending project, dissatisfied clients, and even liability issues.

Project closure helps avoid:

- Repeating mistakes on future projects and objectives

- Having final products or deliverables without dedicated support and resources

- Failing to identify the team or individuals who will own and maintain the solution following final delivery

- Creating liability issues resulting from incomplete payments, contracts, or deliverables

Following a clear project closure plan helps the project team to hand over the final solution to the client or end-user. This process ensures the final stakeholders have the information, resources, and training to successfully manage and use the end product.

When closing the project, the project manager reviews the project management plan to ensure that all project work is completed and that the project has met its objectives. The activities necessary for the administrative closure of the project or phase include but are not limited to:

- Actions and activities necessary to satisfy completion or exit criteria for the phase or project such as:

  - Ensure that all documents and deliverables are up-to-date and that all issues are resolved.

  - Confirm the delivery and acceptance of deliverables by the customer.

  - Ensure that all costs are charged to the project.

  - Close project accounts.

  - Reassign resources.

  - Deal with remaining project material.

- - o Reallocate project facilities, equipment.

    - o Finalise project reports to meet organizational policies.

- Activities related to the completion of the contractual agreements applicable to the project or project phase such as:

    - o Confirm the acceptance of the seller's work,

    - o Finalize open claims,

    - o Update records to reflect results,

    - o Archive information for future use.

- Activities needed to:

    - o Collect project/phase records,

    - o Audit project success/failure,

    - o Manage knowledge transfer,

    - o Record lessons learned,

    - o Archive project information for future use by the organization.

- Actions required to transfer the project's products, services, or results to production and/or operations.

- Collect any improvement suggestions for the policies and procedures of the organization and share them with the appropriate organizational unit.

- Measure stakeholder satisfaction.

The Close Project process also establishes the procedures to identify and document the reasons if a project is terminated before completion. To successfully achieve this, the project manager needs to engage all the proper stakeholders in the process.

Formative Activity 33: The importance and benefits of project close out (KT0602) (IAC0602)

Complete the following Formative Activity as per the instructions from the facilitator

6.3 Inputs related to project close out (KT0603) (IAC0603)

The closing phase of project management involves several steps. Inputs include but are not limited to:

- **Project Charter** – The project success criteria, approval requirements, and who will sign off the project are all documented in the project charter.

- **Project Management Plan** – All elements of the project management plan are inputs into this process.

- **Project Documents** – These include but are not limited to:

  - **Assumption log** – The assumption log contains a record of all the assumptions and constraints that influence the technical specifications, estimates, schedules and risks etc.

  - **Basis of estimates** – This is used to compare the following estimations against the actual results:

    - Duration

    - Costs

    - Resources

    - Cost control

  - **Change log** – The status of all change requests throughout the project.

  - **Issue log** – A check to determine whether any issue remain open.

  - **Lessons learned register** – Lessons learned are finalised and captured in the lessons learned repository.

  - **Milestone list** – Final dates for the completion of the project milestones are documented.

  - **Project communications** – All communications that have occurred during the project.

  - **Quality control measurements** – The results Control Quality activities are documented and compliance with the quality requirements are demonstrated.

  - **Quality reports** – All Quality issues managed or escalated by the team, improvement recommendations, and the summary of findings are included in the quality report.

  - **Requirements documentation** – Compliance with the project scope is demonstrated in this document.

- o **Risk register** – Risks that have occurred during the project.

- o **Risk report** – Used to ensure that there are no open risks on completion of the project.

- **Accepted Deliverables** – These include the following:

  - o Product specifications

  - o Delivery receipts

  - o Work performance documents

- **Business Documents** – Include but are not limited to:

  - o **Business case** – Business documents and cost benefit analysis that justify the project. Also used to determine whether the expected outcomes from the feasibility study serves as justification for the occurrence of the project.

  - o **Benefits management plan** – The target benefits of the project. Also used to determine whether the benefits of the project were achieved.

- **Agreements** – The terms and conditions of the contract outline the requirements for the formal procurement closure. These are added into the procurement management plan.

- **Procurement Documentation** – All procurement documentation is required to be collected, filed, and indexed to close the contract. The following information needs to be catalogued:

  - o Contract schedule

  - o Scope

  - o Quality and cost performance

  - o Contract change documentation

  - o Payments records

  - o Inspection results

Additionally, manuals, troubleshooting and all other technical documents are also part of the procurement documents when a project is closed. These can also be added to lessons learned for future projects.

- **Organisational Process Assets** – The Close Project process can also be influenced by the following organisational process assets:

  - o Project closure guidelines or requirements:

- Lessons learned

- Final audits

- Evaluations

- Product validations

- Acceptance criteria

- Contract closure

- Resource reassignment

- Team performance appraisals

- Knowledge transfer

    o Knowledge base containing versions and baselines of:

- Organisational standards

- Policies

- Procedures

- Project documents

6.3.1 Project verification and satisfaction assessment

This is the Project Manager's report to the Project Sponsor stating how well the project has performed against the Project Proposal and PMP, including the original planned cost, schedule and expected benefits (that can be assessed at this time). At this time all project documentation should be up to date.

Checklist	✔	Comments	
All deliverables completed to the required quality			
All invoices & cross charges paid (if applicable)			
Final cost of project established (please state)			R0
Project documentation completed			
Risks and Issues closed or resolved			
Handover to organisation complete			

Potential further work or follow-on activity		

Achievement of the Project's Benefits

Drawing on content from the Project Proposal & PMP, list the original defined benefits. Have these benefits been delivered or are they on schedule to be delivered as originally anticipated.

Performance Against Original Schedule

Comment on how the project performed against the original baselined schedule. What were the reasons for major delays or accelerations? Discuss those tasks whose actual duration varied the most from the original estimated duration.

Performance Against Original Forecast Costs & Resources

Comment on how the project performed against the original approved budget and resource estimate. What were the reasons for variations from the original approved estimates? Discuss those tasks whose actual cost and resource utilisation varied the most from the original estimated duration.

Impact of Approved Changes & Raised Exceptions

List all approved changes as included in the Change Log. Comment on how these changes impacted the project schedule, cost, quality, and scope. Could these changes have been foreseen? Was there any source reason for changes?

Summary of Key Project Issues & Resolutions

Review the Issue Log and comment on those issues that had the largest impact on the project. Provide recommendations on how these key issues could be avoided or reduced on future projects.

Lessons Learned

Building on Section 6, discuss any other lessons (positive & negative) that were learned during this project. What would you do differently next time.

Project Manager's Commentary

Please add any additional comments worth sharing with the Project Sponsor wider organisation.

Future Benefits Realisation

For those benefits listed in (1) that are yet to be realised explain who will now take ownership of monitoring and measuring their realisation.

Benefit	How will this be measured?	Who will take ownership?	When will the benefit be realised / measured?

6.3.1.1 Performance reporting tools and techniques

During the process of performance reporting, the work results of other processes are also analysed and combined into performance reports.

The tools and techniques for performance reporting are:

- **Information presentation tools**

  - Information presentation tools enable the project team members to present project performance data.

  - Most organisations have software packages which can be used to paint a picture with a graph or a spreadsheet analysis.

- **Performance information gathering and compilation**

  - The performance information gathering, and compilation technique is the organising of all pertinent project information.

- **Status review meetings**

  - Status review meetings are regularly scheduled meetings to exchange information about a project.

  - Normally there is a team level status review meeting and then an executive review meeting.

- **Time reporting systems**

  - Time reporting systems record and provide information about the time spent for activities on a project.

- **Cost reporting systems**

  - Cost reporting systems record and provide information about the costs expended for the project.

Using these tools and techniques help the project manager implement an efficient reporting process. Imagine if the only way to obtain time spent on a project was to review every team member's time sheet and then sum up the parts!

6.3.1.2 Project report templates

Templates are reusable project outlines that minimise input and serve as a starting point for new work. They are pre-formatted and already have some redundant details in place. Templates enable you to set up projects, tasks, reports, and other files without having to start from scratch every time.

No matter how well a project is planned, there will be some changes to the original plan. Project reports document these changes, whether good or bad, and inform future strategies. Without regularly completing project reports, valuable information and insights is missed out on.

Project reporting templates make reporting easier and data more straightforward.

The following reports should be included during the project:

Weekly project status - documents specific information during a project. These reports should be created throughout the life of a project in order to illustrate changes, whether than be successes or failures. A weekly status report is the first step toward understanding if a project is going smoothly.

Status Report Template

PM ProjectManager

Project Information				
Project Name				
Reporting Period				
Report Date				
Project Manager				
Project Sponsor				

Project Status Summary				
Key Accomplishments				
Progress Report				
Completed Work				
Action Item	Date	RAG	Owner	Comments
Upcoming Work				
Action Item	Date	RAG	Owner	Comments
Project Deliverables				
Deliverable Description	Date	RAG	Owner	Comments
Project Milestones				
Milestone Description	Date	RAG	Owner	Comments

Project Health			
Project Budget Overview			
Budget Spent	% Spent	Notes	RAG
Project Schedule Overview			
Action Item	RAG	Notes	
Project Scope Overview			
RAG		Notes	
Quality Control & Assurance Overview			
RAG		Notes	

Risk Management Overview			
Risk/Issue	Severity	Risk Response Action	Risk Owner

Conclusions & Recommendations

Project progress report - Assist project managers when comparing actual progress against the projections and estimates included in the project plan. A progress report is an important project management tool that works for both tracking and reporting.

Progress Report

Project Name:		Reporting Period:	
Stakeholder:		Owner:	
Project Manager:		Project Due Date:	
Compiled By:		Date Submitted:	

Summary

Item	Current Status	Prior Status	Summary
Project Status	On Time	Delayed	[Brief synopsis]
Scope	Choose an item.	Choose an item.	
Schedule	Choose an item.	Choose an item.	
Cost	Choose an item.	Choose an item.	
Risk	Choose an item.	Choose an item.	

Tasks

Task	Status	Objective	Planned	Actual	Progress Complete	Deliverable
[Name of activity]	In Progress	[What's the objective]	[When is it planned to be done]	[When was it completed]	25%	In Progress
	Choose an item.				Choose an item.	Choose an item.
	Choose an item.				Choose an item.	Choose an item.
	Choose an item.				Choose an item.	Choose an item.
	Choose an item.				Choose an item.	Choose an item.

Issues

Issue	When Identified	Action or Ignore	Owner	Resolved
[Define Issue]	[Date when it was identified]	[What actions are being taken to resolve it or will it be left alone]	[Who discovered it and is tasked with its resolution]	No
				Choose an item.
				Choose an item.

Budget

Item	Allocation	Spent	Spent to Date
[Budget line item]	[Total money allocated]	[What was spent this reporting period]	[Total expenditures to date]

Accomplishments

[List accomplishments over reporting period, including activities, meetings, deliverables, etc.]

Expected Accomplishments

[List accomplishments expected to be achieved over next reporting period.]

Risk Register Template - As the project continues, new risks are bound to crop up. There's no way to foresee every potential risk during the project planning phase, so reporting on new issues as they appear is required. This way problems are identified before they happen and you gain a better understanding of what to look out for in future projects.

Risk Tracking Template

Date of last review:

PM ProjectManager

ID	Description of Risk	Impact	Risk Reponse	Risk Level	Risk owner	Notes
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						

Change log - A risk register identifies potential risks. In a change log, these are actual changes that took place. A change log template is where major changes in the project, what actions were taken to resolve them when the matter was resolved, and other details will be listed.

PM ProjectManager

Change Log Template

Project Name:
Project Manager Name:
Program Manager Name:

Change No.	Type	Description	Date Identified	Status	Priority	Assigned	Expected Resolution	Action	Impact	Date Work Begins	Escalation Required	Date Work Resolved	Signoff	Comments
1														
2														
3														
4														
5														

Project Closure Report-This report is the task of managing a successful project. A project closure report includes documentation of everything needed to complete the project, as well as any outstanding items that have not been completed. This report should summarize objectives, criteria for completion, successes, failures and lessons learned. It should also provide information about time spent, budget, scope and schedule.

The following is a template of the report:

Project Closure Report

Document Version

Project Name	
Project Sponsor	
Project Manager	
Date	

Document Approval Signatures

Role	Name	Signature	Date
Project Manager			
Project Sponsor			

This is the Project Manager's report to the Project Sponsor stating how well the project has performed against the Project Proposal and PMP, including the original planned cost, schedule and expected benefits (that can be assessed at this time). At this time all project documentation should be up-to-date.

Checklist	✓	Comments	
All deliverables completed to the required quality			
All invoices & cross charges paid (if applicable)			
Final cost of project established (please state)			£0
Project documentation completed			
Risks and Issues closed or resolved			
Handover to organisation complete			
Potential further work or follow on activity			

1.   Achievement of the Project's Benefits

Drawing on content from the Project Proposal & PMP, list the original defined benefits. Have these benefits been delivered or are they on schedule to be delivered as originally anticipated?

2.   Performance Against Original Schedule

Comment on how the project performed against the original baselined schedule. What were the reasons for major delays or accelerations? Discuss those tasks whose actual duration varied the most from the original estimated duration.

3.   Performance Against Original Forecast Costs & Resources

Comment on how the project performed against the original approved budget and resource estimate. What were the reasons for variations from the original approved estimates? Discuss those tasks whose actual cost and resource utilisation varied the most from the original estimated duration.

4.   Impact of Approved Changes & Raised Exceptions

List all approved changes as included in the Change Log. Comment on how these changes impacted the project schedule, cost, quality and scope. Could these changes have been foreseen? Was there any particular source reason for changes?

5.   Summary of Key Project Issues & Resolutions

Review the Issue Log and comment on those issues that had the largest impact on the project. Provide recommendations on how these key issues could be avoided or reduced on future projects.

6.   Lessons Learned

Building on Section 6, discuss any other lessons (positive & negative) that were learned during this project. What would you do differently next time?

7.   Project Manager's Commentary

Please add any additional comments worth sharing with the Project Sponsor wider organisation.

8.   Future Benefits Realisation

For those benefits listed in (1) that are yet to be realised explain who will now take ownership of monitoring and measuring their realisation.

Benefit	How will this be measured?	Who will take ownership?	When will the benefit be realised / measured?

Using project reporting templates means each report created is part of a larger reference for the future.

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6.3.1.3 Project documentation

The term project documentation refers to the project management documents that are created throughout the project life cycle. These documents, such as the project plan, project schedule or project budget, define activities, procedures and guidelines that the project team should follow.

Multiple reports, charts, graphs, documents, change requests and status updates need to be maintained throughout the project life cycle, and documentation works join pieces of a project together and bring it to a successful finish.

Project documentation needs to be easy to locate. Project documents should be stored online and that the folder structure and hierarchy are easy and intuitive to understand.

Document control requirements for a project

Reasons for document control:

- Identifying, securing, and finding documents on a project

- Identification systems for documentation

- The causes and effects of uncontrolled changes and access to documentation

Document control consists of the following practical steps:

- Processing of incoming and internal documents

- Maintenance of a document register

- Distribution of documents to staff and other parties who need them

- Maintaining an audit trail of who got what, when and why

- Management of revised documents and their distribution and archiving

Storage and retrieval functions and processes

The earliest electronic document management (EDM) systems were either developed to manage proprietary file types, or a limited number of file formats. Many of these systems were later referred to as document imaging systems because the main capabilities were capture, storage, indexing and retrieval of image file formats.

These systems enabled an organisation to:

- capture faxes and forms,

- save copies of the documents as images, and

- store the image files in the repository for security and quick retrieval

- retrieval was possible because the system handled the extraction of the text from the document as it was captured, and the text indexer provided text retrieval capabilities.

Electronic document management systems evolved to where the system was able to manage any type of file format that could be stored on the network. The applications grew to encompass electronic documents, collaboration tools, security, and auditing capabilities. Most methods for managing documents (paper or electronic) address the following areas:

Location	- Where will documents be stored? - Where will people need to go to access documents? - Physical journeys to filing cabinets and file rooms are analogous to the onscreen navigation required to use a document management system.
Filing	- How will documents be filed? - What methods will be used to organise or index the documents to assist in later retrieval? - Document management systems will typically use a database to store filing information.
Retrieval	- How will documents be found? - Typically, retrieval encompasses both browsing through documents and searching for specific information.
Security	- How will documents be kept secure? - How will unauthorised personnel be prevented from reading, modifying, or destroying documents?
Disaster Recovery	How can documents be recovered in case of destruction from fires, floods or natural disasters?

Retention	• How long should documents be retained? • This is an organisational policy and practice that defines what information, or documents are to be retained; for what length of time; and what point in time the information must be removed or deleted. • Retention rules are usually based on organisational practice of records management, which in turn are usually regulated by law.
Archiving	• How can documents be preserved for future readability? • Archiving is the removal from the active repository of documents and related metadata that have, by organisational definition, reached the end of their active lifespan, and are required to be stored, or archived, in a separate area. • Usually archiving entails movement of documents, whether paper or electronic to a separate storage facility, be it an archival warehouse, or an offline storage device.
Distribution	• How can documents be available to the people that need them?
Workflow	• If documents need to pass from one person to another, what are the rules for how their work should flow?
Creation	• How are documents created? • This question becomes important when multiple people need to collaborate, and the logistics of version control and authoring arise.
Authentication/Approval	• How do we provide needed requirements for legal submission to government and private industry that the documents are original and meet their standards for authentication?

6.3.1.4 Project presentation techniques

Presentations need to be effective, and it must help achieve the expected goal of positively influencing the audience with the new information being presented. Presentations are formal method of communicating your messages in a powerful manner to create the desired impact Presentations to stakeholders can include but are not limited to:

- Progress reports

- Information to support decision making

- Information about the project and the objectives, for the sake of raising the profile of the project and team.

- Information to increase the understanding of the project objectives

Presentations need to take the following into account:

- The expectations and needs of the audience

- The needs and expectations of the project and project team

The following article from skillsyouneed.com provides some good insight into Effective Presentations

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How can you make a good presentation even more effective?

This page draws on published advice from expert presenters around the world, which will help to take your presentations from merely 'good' to 'great'.
By bringing together advice from a wide range of people, the aim is to cover a whole range of areas.
Whether you are an experienced presenter, or just starting out, there should be ideas here to help you to improve.

1. Show your Passion and Connect with your Audience
It's hard to be relaxed and be yourself when you're nervous.
But time and again, the great presenters say that the most important thing is to connect with your audience, and the best way to do that is to let your passion for the subject shine through.
Be honest with the audience about what is important to you and why it matters.
Be enthusiastic and honest, and the audience will respond.

2. Focus on your Audience's Needs
Your presentation needs to be built around what your audience is going to get out of the presentation.

As you prepare the presentation, you always need to bear in mind what the audience needs and wants to know, not what you can tell them.

While you're giving the presentation, you also need to remain focused on your audience's response, and react to that.

You need to make it easy for your audience to understand and respond.

3. Keep it Simple: Concentrate on your Core Message

When planning your presentation, you should always keep in mind the question:

What is the key message (or three key points) for my audience to take away?

You should be able to communicate that key message very briefly.

Some experts recommend a 30-second 'elevator summary', others that you can write it on the back of a business card, or say it in no more than 15 words.

Whichever rule you choose, the important thing is to keep your core message focused and brief.

And if what you are planning to say doesn't contribute to that core message, don't say it.

4. Smile and Make Eye Contact with your Audience

This sounds very easy, but a surprisingly large number of presenters fail to do it.

If you smile and make eye contact, you are **building rapport**, which helps the audience to connect with you and your subject. It also helps you to feel less nervous, because you are talking to individuals, not to a great mass of unknown people.

To help you with this, make sure that you don't turn down all the lights so that only the slide screen is visible. **Your audience needs to see you as well as your slides.**

5. Start Strongly

The beginning of your presentation is crucial. You need to grab your audience's attention and hold it.

They will give you a few minutes' grace in which to entertain them, before they start to switch off if you're dull. So don't waste that on explaining who you are. Start by entertaining them.

Try a story (see tip 7 below), or an attention-grabbing (but useful) image on a slide.

6. Remember the 10-20-30 Rule for Slideshows

This is a tip from Guy Kawasaki of Apple. He suggests that slideshows should:

- Contain no more than 10 slides;
- Last no more than 20 minutes; and
- Use a font size of no less than 30 point.

This last is particularly important as it stops you trying to put too much information on any one slide. This whole approach avoids the dreaded 'Death by PowerPoint'.

As a general rule, slides should be the sideshow to you, the presenter. A good set of slides should be no use without the presenter, and they should definitely contain less, rather than more, information, expressed simply.

If you need to provide more information, create a bespoke handout and give it out **after** your presentation.

7. Tell Stories

Human beings are programmed to respond to stories.

Stories help us to pay attention, and also to remember things. If you can use stories in your presentation, your audience is more likely to engage and to remember your points afterwards. It is a good idea to start with a story, but there is a wider point too: you need your presentation to act like a story.

Think about what story you are trying to tell your audience, and create your presentation to tell it.

Finding The Story Behind Your Presentation

To effectively tell a story, focus on using at least one of the two most basic storytelling mechanics in your presentation:

1. **Focusing On Characters** – People have stories; things, data, and objects do not. So ask yourself "who" is directly involved in your topic that you can use as the focal point of your story.

For example, instead of talking about cars (your company's products), you could focus on specific characters like:

   o The drivers the car is intended for – people looking for speed and adventure
   o The engineers who went out of their way to design the most cost-effective car imaginable

2. **A Changing Dynamic** – A story needs something to change along the way. So ask yourself "What is not as it should be?" and answer with what you are going to do about it (or what you did about it).

For example…

   o Did hazardous road conditions inspire you to build a rugged, all-terrain jeep that any family could afford?
   o Did a complicated and confusing food labelling system lead you to establish a colour-coded nutritional index so that anybody could easily understand it?

8. Use your Voice Effectively

The spoken word is actually a pretty inefficient means of communication, because it uses only one of your audience's five senses. That's why presenters tend to use visual aids, too. But you can help to make the spoken word better by using your voice effectively.

Varying the speed at which you talk, and emphasising changes in pitch and tone all help to make your voice more interesting and hold your audience's attention..

9. Use your Body Too

It has been estimated that more than three quarters of communication is non-verbal.

That means that as well as your tone of voice, your body language is crucial to getting your message across. Make sure that you are giving the right messages: body language to avoid includes crossed arms, hands held behind your back or in your pockets, and pacing the stage.

Make your gestures open and confident, and move naturally around the stage, and among the audience too, if possible.

10. Relax, Breathe and Enjoy

If you find presenting difficult, it can be hard to be calm and relaxed about doing it.

One option is to start by concentrating on your breathing. Slow it down, and make sure that you're breathing fully. Make sure that you continue to pause for breath occasionally during your presentation too.

Source: https://www.skillsyouneed.com/present/presentation-tips.html

Formative Activity 34: Inputs related to project close out (KT0603) (IAC0603)

Complete the following Formative Activity as per the instructions from the facilitator

6.4 Tools and techniques for project close out (KT0604)

The practice of project close-out finalises all project activities completed across all phases of the project to formally close the project and transfer the completed or cancelled project as appropriate. Tools and techniques used for project close out includes:

- **Expert Judgement** – Individuals or groups with specialised knowledge need to be considered for the following:
    - Management control
    - Audits
    - Legal and procurement
    - Legislation and regulations
- **Data Analysis** – Techniques that can be used include but are not limited to:
    - **Document analysis** – Improvements to lessons learned, knowledge sharing can be identified by assessing the documentation.
    - **Regression analysis** – The relationships between various project variables are analysed to develop performance improvements for future projects.
    - **Trend analysis** – Validation of the models used in the organisation are analysed to implement necessary adjustments for future projects.
    - **Variance analysis** – Improvements to the organisation metrics can be achieved by analysing and comparing the initial plan with the result.
- **Meetings** – Meetings are necessary to discuss the following:
    - Acceptance confirmation of the deliverables
    - Exit criteria has been met
    - Formalise the completion of contracts
    - Evaluate stakeholders' satisfaction.
    - Lessons learned
    - Knowledge transfer

    Attendees can include the project team members and stakeholders. Meetings can be face-to-face, virtual, formal, or informal. Type of meetings include close-out, customer wrap-up, lessons learned and celebrations meetings.

6.4.1.2 Closure processes

A project is distinguishable from other work assignments by the distinct characteristic of having an end point.

- Project Execution and Control Phase follows the Project Planning Phase and ideally starts once the Project Plan has been approved and baselined.

- Project Execution is characterised by the actual work on the tasks planned and project Control involves the comparison of the actual performance with the planned performance and taking appropriate corrective action to get the desired output.

- In this last stage, the project manager must ensure that the project is brought to its proper completion.

- The closure phase is characterised by a written formal project review report containing the following components: a formal acceptance of the final product by the client, Weighted Critical Measurements (matching the initial requirements specified by the client with the final delivered product), rewarding the team, a list of lessons learned, releasing project resources, and a formal project closure notification to higher management.

- No special tool or methodology is needed during the closure phase.

- The closing process involves gaining stakeholder and customer acceptance of the final product and bringing the project, or project phase, to an orderly end.

- Even if projects are not completed, they should be closed out to learn from the past.

- Project archives and lessons learned are important outputs.

- Most projects include a final report and presentations.

- The objective of the close-down phase is to formally close the project by finalising all project documentation, conducting final knowledge transfer, establishing the product support structure, and conducting project debriefing efforts.

Finishing all the scheduled work is only part of bringing a project to a close. This phase entails:

- Releasing the final deliverables and getting approval for the final results

- Closing all project accounts

- Handing over all project documentation

- Terminating all project contracts

- Communicating the closure of the project to all stakeholders

- Holding a post-project evaluation or undertaking a post-project review to quantify overall success and list lessons learnt

The following steps are recommended:

1. Make sure that all project documentation is collected and archived or handed off to the next phase (for example, on a proposal project).

2. Make sure that closeout conditions that were documented in the contract and/or the project plan have been met; for example, all customer assets must be returned and project assets (i.e., computers, software, etc.) must be collected from the team.

3. Conduct a final reconciliation of invoices and final payments to the project plan and produce a report comparing the actual financial performance against the performance management baseline.

4. Have Finance change the status of the project code in the corporate financial system to:

   - Inactive - once all time has been reported.

   - Closed - once all charges have been processed and all payments received.

A post-project evaluation (or project post-mortem) lays the groundwork for repeating good practices and experiences and avoiding the same mistakes in the future.

Many organisations have realised that it's important to review the results of projects a year or so after they have been completed. Many projects project potential savings, so it's important to review the financial estimates and help learn from the past in preparing new estimates.

If conducted properly it will assess the project results, activities, and processes to:

- Recognise people's achievements and acknowledge people's contributions

- Identify techniques and approaches that worked and devise steps to ensure they're used in the future

- Identify techniques and approaches that didn't work and devise steps to ensure they aren't used again in the future

6.4.1.3 Resource demobilization procedures

Demobilization is the release and return of resources that are no longer required, and is a planned process.

Finishing all the scheduled work is only part of bringing a project to a close. Create a plan for each phase of demobilization. This phase entails:

- Releasing the final deliverables and getting approval for the results

- Closing all project accounts

- Handing over all project documentation

- Terminating all project contracts

- Communicating the closure of the project to all stakeholders

- Holding a post-project evaluation or undertaking a post-project review to quantify overall success and list lessons learnt

Formative Activity 35: Tools and techniques for project close out (KT0604)

Complete the following Formative Activity as per the instructions from the facilitator

6.5 Project close out processes and outputs (KT0605)

Project closeout is the final construction phase of the project lifecycle. It is the collecting of final project documents (sometimes referred to as project deliverables), assembling them into a package, and ultimately presenting that package to the client that requested the project be built.

Project close output refers to this transition of the final product, service, or result that the project was authorized to produce (or in the case of phase closure, the intermediate product, service, or result of that phase) from one team to another.

Project close out processes and outputs include:

- **Project Document Updates** – All documents may be marked as final versions due to project closure. The lessons learned register is updated and finalised to include the information on project closure. The lessons learned register may include information on:
  - Benefits management.
  - Business case accuracy.
  - Life cycles of the project and development.
  - Issue and risk management.
  - Stakeholder engagement.
- **Final Product, Service, or Result Transition** – Once a product, service, or result has been delivered by the project, it may be handed over to a separate group or organisation for operation, maintenance, and support. This output refers to this transition from one team to another.
- **Final Report** – A summary of the project performance which can include but the following information:
  - Description of the project
  - Scope objectives and the criteria used to evaluate the scope to determine that it was met.
  - Quality objectives and the criteria used to evaluate the project and product quality to determine actual delivery dates and variances reasons if any.
  - Acceptable cost range versus actual costs to identify any cost objective variances.
  - Validation summary for the final product, service, or result.

- o Schedule objectives and whether the project addressed the benefits undertaken by the project.

- o Summary of how the final product, service, or result achieved the business needs. If they were not met, the degree to which they were achieved needs to be documented.

- o Summary of any risks or issues encountered during the project and how they were resolved.

- **Organisational Process Asset Updates** – These include but are not limited to:
  - o **Project documents** – Documentation resulting from the project activities:
    - Project management plan
    - Scope
    - Cost
    - Schedule
    - Project calendars
    - Change management
  - o **Operational and support documents** – Documents required by an organisation for the maintenance and support, and operation of the product or service delivered by the project.
  - o **Project or phase closure documents** – Formal documentation indicating the completion of the project and the transfer of the deliverables to an operations group or phase of the project The project manager reviews the phase and customer acceptance documentation from the validate scope process as well as the agreement to ensure that all project requirements are completed. If the project was terminated before completion, the documentation indicates that the reasons for termination and formalises the procedure to transfer the deliverables of the cancelled project to others.
  - o **Lessons learned repository** – Knowledge gained during the project execution and lessons learned is recorded in the lessons learned repository for use by future projects.

6.5.1 Administration and contract closure audit procedure

The following steps are recommended for the Administration and contract closure audit procedure:

1. Make sure that all project documentation is collected and archived or handed off to the next phase (for example, on a proposal project).

2. Make sure that closeout conditions that were documented in the contract and/or the project plan have been met; for example, all customer assets must be returned and project assets (i.e., computers, software, etc.) must be collected from the team.

3. Conduct a final reconciliation of invoices and final payments to the project plan and produce a report comparing the actual financial performance against the performance management baseline.

4. Have Finance change the status of the project code in the corporate financial system to:

   - Inactive - once all time has been reported.

   - Closed - once all charges have been processed and all payments received.

A post-project evaluation (or project post-mortem) lays the groundwork for repeating good practices and experiences and avoiding the same mistakes in the future.

Many organisations have realised that it's important to review the results of projects a year or so after they have been completed. Many projects project potential savings, so it's important to review the financial estimates and help learn from the past in preparing new estimates.

If conducted properly it will assess the project results, activities, and processes to:

- Recognise people's achievements and acknowledge people's contributions

- Identify techniques and approaches that worked and devise steps to ensure they're used in the future

- Identify techniques and approaches that didn't work and devise steps to ensure they aren't used again in the future

6.5.1.1 Performance reporting tools and techniques

Performance reporting is the process of documenting and defining the projects, products or services that a company makes and measuring its success with a reporting system that covers scope, costs, quality assurance, and schedule. Performance reporting is used to determine how well the project is performing and whether it's meeting its goals and objectives.
The tools and techniques for performance reporting are:

- **Information presentation tools**

    o Information presentation tools enable the project team members to present project performance data.

    o Most organisations have software packages which can be used to paint a picture with a graph or a spreadsheet analysis.

- **Performance information gathering and compilation**

    o The performance information gathering, and compilation technique is the organising of all pertinent project information.

- **Status review meetings**

    o Status review meetings are regularly scheduled meetings to exchange information about a project.

    o Normally there is a team level status review meeting and then an executive review meeting.

- **Time reporting systems**

    o Time reporting systems record and provide information about the time spent for activities on a project.

- **Cost reporting systems**

    o Cost reporting systems record and provide information about the costs expended for the project.

Using these tools and techniques help the project manager implement an efficient reporting process. Imagine if the only way to obtain time spent on a project was to review every team member's time sheet and then sum up the parts!

6.5.1.2 Product documentation

Product documentation is the implementation of a streamlined, efficient, and uniform process for producing the key documents that are required to implement a new product successfully.

The project scope statement documents the entire scope, including the product scope. It describes the deliverables in detail. It may also contain explicit exclusions. The detailed project scope statement includes the following:

- **Product scope description** – Outlines the characteristics of the product as described in the project charter.
- **Deliverables** – Deliverables can be described as a summary or in detail.
- **Acceptance criteria** – The conditions that must be met for the deliverables to be accepted.
- **Exclusions** – Identifies what is out of scope for the project.

6.5.1.3 Project records

Project records are vital to the process of managing and monitoring the use of resources, and they provide a historical record of decisions, changes, and outcomes. Therefore, project documents play an important part in the project management process, in that they:

- provide evidence to support the decisions made,
- support the accountability of project administration,
- are evidence of the interactions between the various stakeholders.

6.5.2 Design a project transfer and handover procedure

Project handover includes the following activities:

- **Finalisation of any contracted services** - including any unresolved items.

- **Collection and handover** of documents - 'as-built' drawings, specifications, maintenance manuals, guarantees, etc. Ensure that handover project documents are complete, concise, in the correct format and in the required location and are handed over to appropriate individuals within the agreed time frame.

- **Demonstration of the benefits** of the project to the key stakeholders. One of the tasks most often left out of the handover procedure is a document, such as the Handover Summary Report, which demonstrates the benefits that the project has delivered. It is the final important step in the management of stakeholders' expectations. The document reinforces and clarifies any changes to scope, budget, schedule or quality, who agreed to the changes and why they were necessary.

- **Celebration** with the project team and key stakeholders: often the delivery of projects on schedule and to the require standards requires intense effort by all concerned. Their effort must be recognised and appreciated. Also, the project team members need a formal closure to the process. It has been informally noted by senior project managers in some large companies, which have been undergoing cost cutting measures, that the elimination of a celebration to mark the end of a project has been a major contributing factor to declining morale amongst project team members. Some senior project managers attribute so much importance to the post-project celebration that they have financed the event personally.

Handover Summary Report

Initial Overall Objectives					
Agreed Changes To Overall Objectives					
Final Agreed Deliverables	**Item**	**Budgeted Cost**	**Final Cost**	**Schedule Date**	**Final Date**
	TOTALS				

ISSUES SUMMARY:

Item	Strategy	Date Logged	Date Resolved

Documents attached:

No.	Title

_____   _____   _____

Project Manager   Project Sponsor   Project Client

6.5.2.1 Contract documentation

Contract Document is the written documents that defines the basis of contract consisting of both parties' roles, responsibilities, and detailed description of the work or service such as drawings, specifications, procedures, any other conditions, as well as the commercial information including the prices agreement, payment conditions, etc. The Contract Document should include sufficient information to be able to complete the work or service.

The following are the basic types of documents that will need to be kept in the Records Management System/ Project Management File regarding projects:

- **Contracts:**
  - It is good practice to keep contract documents separate from other material and it can be helpful to have separate files (appropriately cross-referenced) for each key stage of a contract.
  - Keep pre-award and post-award documentation separate.
  - Usually, every contract or order is assigned a unique reference number to be used in all correspondences.

- o Formal amendments to a contract or order should also be given unique numbers showing the order in which the amendments were made.

- **Contract Data**:

  - o States the applicable conditions of contract and associated contract specific data that collectively describe the

    - risks,

    - liabilities and

    - obligations of the contracting parties and

    - the procedures for the administration of the contract.

- **Standard Terms and Conditions of Contract**:

  - o These are the organisation's standard terms and conditions and should be used for all contracts.

  - o They should be drafted by the organisation's lawyers.

- **Pricing Instructions**:

  - o Provides the criteria and assumptions which it will be assumed (in the contract) that the tenderer has considered when developing his prices, or target in the case of target and cost reimbursable contracts.

- **Activity Schedule / Bill of Quantities:**

  - o Records the contractor's prices for providing supplies/services/ engineering and construction works which are described elsewhere in a specification within the Scope of Work section of the contract.

- **Scope of Work**:

  - o Specifies and describes the supplies, services, or engineering and construction works which are to be provided and any other requirements and constraints relating to the way the contract work is to be performed.

- **Purchase Requisition Forms**:

    o The Purchase Requisition Form is used once the supplier, with whom the Purchase Order is to be placed, is selected.

    o This form initiates a process in which the budget holder agrees on the proposed contract by authorising the requisition.

    o This process goes on to produce the physical Purchase Order.

- **Purchase Order**:

    o Following on from the approval of the Purchase Order Requisition,

        ▪ the Purchase Order - Contract Offer Letter is forwarded to the individual who has the required delegated financial authority to approve production of a Purchase Order.

    o This approval allows production of the purchase order.

    o The Purchase Order is the final document in this chain. It is sent to the chosen contractor and represents the acceptance of their offer.

    o There may be circumstances when it is deemed inappropriate to issue a Purchase Order and a letter would better suffice.

    o The Contract Offer letter can be used as a substitute to or in conjunction with the Purchase Order.

6.5.2.2 Payment requests and reconciliation

Because the costs are associated with activities and each activity has a start date and a duration, it is possible to calculate how much money needs to be spent by any date during the project. The money needed to pay for a project is usually transferred to the project account shortly before it is needed. These transfers must be timed so that the money is there to pay for each activity without causing a delay in the start of the activity. If the money is transferred too far in advance, the organisation will lose the opportunity to use the money somewhere else, or they will have to pay unnecessary interest charges if the money is borrowed. A schedule of money transfers is created that should match the need to pay for

the activities. The process of matching the schedule of transfers with the schedule of activity payments is called reconciliation (matching funds provided with funds spent).

Refer to the table and graph below that shows the costs of ten major activities in a project:

- Funds are transferred into the project account four times.

- Notice that during most of the project, there were more funds available than were spent except at activity 6 when all the available funds were spent.

Activity	1	2	3	4	5	6	7	8	9	10
Cost	50	200	50	300	500	200	100	400	300	500
Total Spent	50	250	300	600	1,100	1,300	1,400	1,800	2,100	2,600
Transfers	400			900			700		600	
Total Funding	400	400	400	1,300	1,300	1,300	2,000	2,000	2,600	2,600
Cash in Account	350	150	100	700	200	-	600	200	500	-
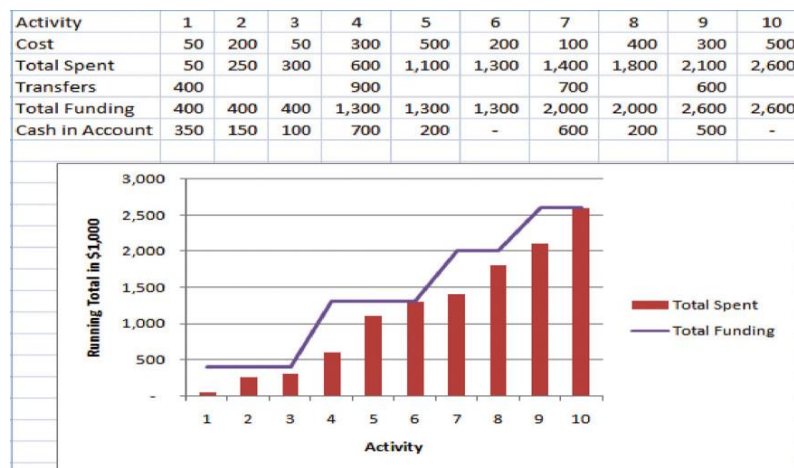
In the project budget profile shown (on the previous page) there is no margin for error if the total of the first six activities exceeds the amount of funding at that point in the project.

Contractual agreements with vendors often require partial payment of their costs during the project. Those contracts can be managed more conveniently if the unit of measure for partial completion is the same as that used for cost budgeting, e.g., if a contractor is pouring concrete for a large project, their contract may call for partial payment after 25% of the total volume of concrete is poured as determined by cubic meters of concrete.
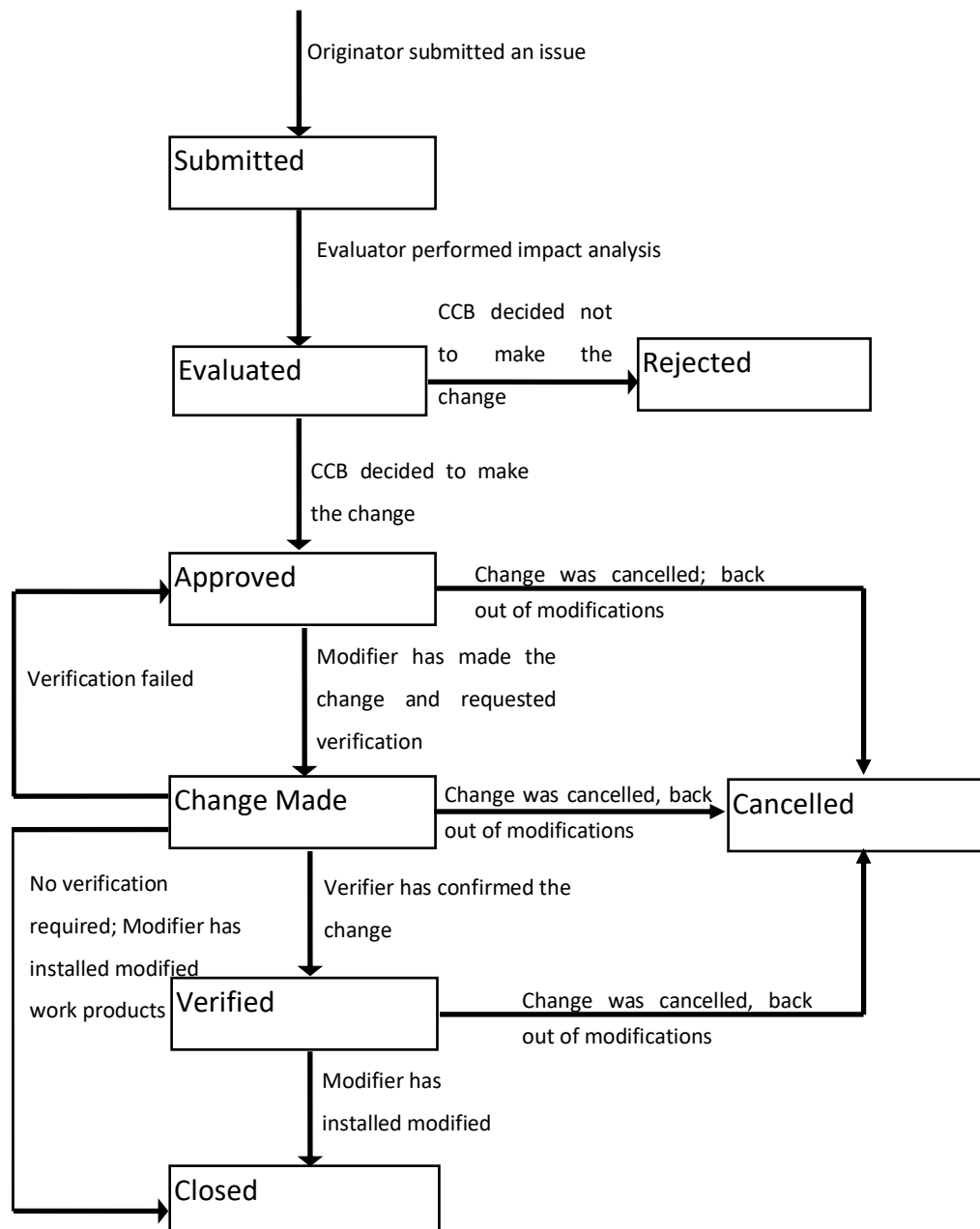
Remember:

- Detailed estimates are associated with activities and aggregated during the planning phase to create an activity-based budget.

Funding transfers are arranged to reconcile money spent to money from funding sources in a timely manner.

6.5.2.3 Verification processes and procedures

Verification is a quality assurance process or technique whereby an evaluation of a component, product or service is completed at the end of a phase or project to verify or confirm that it satisfies all of the regulations or specification requirements. Verification can take place during production or development, and is generally an internal process. The following diagram demonstrated the verification processes and procedures

```
                    │ Originator submitted an issue
                    ▼
              ┌──────────────┐
              │ Submitted    │
              └──────────────┘
                    │ Evaluator performed impact analysis
                    ▼                      CCB decided not
              ┌──────────────┐   to  make  the   ┌──────────────┐
              │ Evaluated    │──────────────────▶│ Rejected     │
              └──────────────┘   change          └──────────────┘
                    │ CCB decided to make
                    │ the change
                    ▼                 Change was cancelled; back
              ┌──────────────┐        out of modifications
        ┌────▶│ Approved     │────────────────────────────┐
        │     └──────────────┘                            │
        │           │ Modifier has made the               │
Verification        │ change and requested                │
  failed            │ verification                        │
        │           ▼                                     ▼
        │     ┌──────────────┐  Change was cancelled, back ┌──────────────┐
        └─────│ Change Made  │  out of modifications       │ Cancelled    │
              └──────────────┘────────────────────────────▶└──────────────┘
        │           │ Verifier has confirmed the             ▲
No verification     │ change                                 │
required; Modifier has                                       │
installed modified  ▼                                        │
work products ┌──────────────┐   Change was cancelled, back  │
              │ Verified     │   out of modifications         │
              └──────────────┘───────────────────────────────┘
        │           │ Modifier has
        │           │ installed modified
        │           ▼
        │     ┌──────────────┐
        └────▶│ Closed       │
              └──────────────┘
```

Verification is checking whether the product is built according to specifications given, and meets all the quality requirements.

- Verification is an **internal process**, **Quality control department checks** the product.

- Done as part of Quality control. (PMBOK – **Control Quality process**)

Formative Activity 36: Project close out processes and outputs (KT0605)

Complete the following Formative Activity as per the instructions from the facilitator

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