Ethiopian TVET-System

Irrigation and Drainage Design and Construction Supervision

Level-IV

Based on March 2017 GC. Occupational Standard

Module Title: Managing a Civil Works Project

TTLM Code: EIS IDC 4 TTLM 0920v2

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This module includes the following Learning Guides

LG47: Evaluate and assess the project

LG Code: EIS IDS4 M10 LO1-LG-47

LG48: Plan and document the project

LG Code: EIS IDS4 M10 LO2-LG-48

LG49: Prepare for project implementation

LG Code: EIS IDS4 M10 LO3-LG-49

LG51: Monitor the project

LG Code: EIS IDS4 M10 LO5-LG-51

LG52: Complete documentation

LG Code: EIS IDS4 M10 LO6-LG-52

Instruction Sheet	Learning Guide 47: Evaluate and assess the project

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Organizing and undertaking site evaluation
- Identifying and recording work scope, desired outcomes and key dates
- Identifying required resources and their availability

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Organize and undertake site evaluation
- Identify and record work scope, desired outcomes and key dates
- Identify required resources and their availability

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4” in page 3, 10, 17and 21respectively.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3 and Self- check 4” -” in page 9, 16, 20and 24respectively
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1in page25.
6. Do the “LAP test” in page 26

Information Sheet-1	Organizing and undertaking site evaluation

1.1 Introduction to project management

project management is the application of a collection of tools and techniques to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost, and quality constraints. Each task requires a particular mix of these tools and techniques structured to fit the task environment and life cycle. The project management process typically includes four key phases: initiating the project, planning the project, executing the project, and closing the project. An outline of each phase is provided below.

Initiating the Project: The project management techniques related to the project initiation phase include:

- Establishing the project initiation team;
- Establishing a relationship with the customer;
- Establishing the project initiation plan;
- Establishing management procedures and
- Establishing the project management environment and workbook.

Planning the Project: The project management techniques related to the project planning phase include:

- Describing project scope, alternatives, and feasibility;
- Divide the project into tasks;
- Estimating resources and creating a resource plan;
- Developing a preliminary schedule;
- Developing a communication plan;
- Determining project standards and procedures;
- Identifying and assessing risk;
- Creating a preliminary budget;
- Developing a statement of work and
- Setting a baseline project plan.

Executing the Project: The project management techniques related to the project execution phase include:

- Executing the baseline project plan;

- Monitoring project progress against the baseline project plan;
- Managing changes to the baseline project plan;
- Maintaining the project workbook and
- Communicating the project status.

Closing Down the Project: The project management techniques related to the project closedown phase include:

- Closing down the project;
- Conducting post project reviews and
- Closing the customer contract.

The techniques listed above in the four key phases of project management enable a project team to:

- Link project goals and objectives to stakeholder needs.
- Focus on customer needs.
- Build high-performance project teams.
- Work across functional boundaries.
- Develop work breakdown structures.
- Estimate project costs and schedules.
- Meet time constraints.
- Calculate risks.
- Establish a dependable project control and monitoring system.

1.2 Organizing and undertaking site evaluation

Construction site assessment and planning is an important part of any construction project. Prior to planning, designing, or laying out a project, it is important for the plan designer to have knowledge of the project site and adjacent areas. To accomplish this objective, it is necessary to collect information about the proposed project site. This information can then be used by the plan designer to make informative decisions in regard to project planning, design, and lay- out. In addition, it allows the plan designer to develop a set of construction plans that will allow for development of the project in an efficient, cost-effective, and environmentally sensitive manner.

Construction site assessment and planning usually involves three steps. Step one is site assessment and data collection. The second step is to analyze the collected data. The

third and final step is to begin incorporating this information into a preliminary concept and design.

Site assessment and data collection is the first step in the planning, design, and layout of any construction project. This step involves collection of resource information applicable to the project site. Information can be obtained through research of existing publications, maps, studies, and other resources. Collected information can be documented in narrative or graphical format. Information that is collected in graphical format such as maps should be of the same scale whenever feasible. This allows the plan designer to overlay different site maps and compare various resources and data at a quick glance.

Key information that should be collected includes but is not limited to the following items:
A. Vegetative cover: The type and amount of vegetative cover is one of the easiest forms of data to collect for a project site. This information gives plan designers an understanding of the stability of the site and its current susceptibility to erosion. Vegetative cover can be documented in narrative and/or graphical format.

Analysis of vegetative cover should begin by identifying vegetation that is of high quality and value and may enhance the aesthetics of the overall project. Trees in particular can be a very valuable asset and can significantly increase the aesthetics and salability of lots within a project. When evaluating and assessing trees, it is often times very beneficial to consult a professional forester. They can identify which trees will add the greatest value to a project and identify which trees are diseased or may not survive construction activities.

B. Soils information: Soils information is another key component in the planning, design and layout of irrigation construction projects. Soils data can be used in the selection, sizing, design, and placement of storm water management measures.
Soils data should be documented in both graphical and narrative form. Soil types should be delineated directly on to an aerial photograph or an overlay of the same scale as the topographic map(s) for the project site. This facilitates the comparison of soil types and their relationship with the topography of the site.

C. Topographical information: Site topography is critical to project planning, design and layout. Topographic maps provide useful information that the plan designer can use to

determine drainage patterns, slope gradient and length, and the location of ecologically sensitive features such as waterbodies. Topographic elevations for a project site should be documented in graphical form.

Slope gradient and length are the two primary factors to consider when analyzing and interpreting topographic information. This information is critical when designing and laying out the project because it will ultimately affect the decisions that will need to be made when selecting appropriate construction.

D. Hydrological information: Hydrologic features are critical in planning, designing, and laying out a construction project. It is extremely important to identify, delineate, and record all digressional areas such as ponds, lakes and wetlands and conveyance systems, including swales, ditches, streams, creeks, rivers, and areas of concentrated flow that are on or adjacent to the project site. This information allows the plan designer to determine drainage patterns, evaluate the condition of various drainage features, determine if they can be incorporated into the project, and select storm water management measures to protect ecologically sensitive areas.

Streams, ponds, and other water features located downstream from the project site should be surveyed to determine their carrying capacity and sensitivity to sedimentation and flooding. It is important to consider their potential for channel or shoreline erosion as a result of increased storm water runoff volumes, velocities, and peak discharge flows.
Hydrologic data of a project site should be documented in graphic and narrative form. Hydrologic features should be delineated on a topographical map or overlay. All locations where storm water runoff may enter, cross, and/or exit the project site should be clearly identified. Areas where storm water runoff may concentrate on the project site should also be identified on the map or overlay.

E. Adjacent areas: Site assessment and data collection should include an evaluation of adjacent properties and their respective land uses. This information provides the plan designer with valuable information that can be used to determine the effects that storm water runoff and pollutants associated with upstream watershed land uses might have on the proposed project site. It also aids in projecting what impacts a project might have on downstream watersheds and sensitive areas. Features of significance that should be

documented and evaluated include but are not limited to rivers, streams, creeks, lakes, ponds, wetlands, wooded areas, roads, culverts, houses and other structures.

Site assessment should include documenting the potential for sediment deposition and damage to adjacent properties as a result of sheet and rill erosion from the project site once construction begins. Adjacent land uses and site features should be identified and delineated on a site map or overlay.

F. Utility & highway corridors: Utility and highway corridors and easements on or adjacent to an irrigation project should be identified and delineated on a project site map. This information is useful when planning, designing, and laying out a project and developing a construction plan for the project.

Utility and highway corridor data should be assessed to determine how the proposed project's infrastructure might be tied into these corridors or whether or not these corridors can be incorporated into the overall project design. Evaluate what effect these land uses might have on the proposed project.

G. Existing infrastructure & potential problem areas: A commonly overlooked aspect of site assessment and data collection is the identification of past activities and potential problem areas associated with the project site. These issues can often delay or even stop a project if they are over- looked. All existing structures and infrastructure associated with a project site should be identified on a project map. If buildings and other structures are present and are to be demolished, an assessment of the building materials and contents should be characterized and documented in the narrative. Some of the more common areas of concern that should be identified on a site map or in the project narrative include abandoned wells, underground storage tanks, improper disposal of trash and debris, subsurface drainage tile, buried waste materials, and contaminated soils.

Potential problem areas identified during the site assessment and data collection phase should be reviewed and evaluated to determine what effect they will have on the project. Assess data to determine if any remedial actions will be needed to reclaim or restore areas of concern on the proposed project site.

H. Natural, historical & archeological features: Natural, historical, and archeological features can also delay or stop a project if not addressed in the planning, design and layout of a project. This element of site assessment and data collection should include features that may be impacted by the overall project, from initial construction through the final land use. The project site should be assessed for the presence of any historical or archeological features. This includes but is not limited to historic buildings/features, burial sites, and artifacts.

Proper analysis of natural, historical, and archeological data is critical in preventing the delay of a project. Identification of many of these features often requires the developer to apply for local, state, or federal permits. Therefore, this data should be analyzed to determine what permits might be needed.

I. Regulations: Regulatory requirements can influence land use and project layout decisions. Often, a project's design or layout can be modified or adjusted to avoid the need for a specific permit or to meet specific regulatory requirements. Therefore, site assessment and data collection should include documentation identifying the need or potential need for local, state, and federal regulatory permits. The types of permits needed will be dependent on the nature and scope of the project. During this phase of planning, it is important to identify the permits that will be required. If feasible and not dependent on design decisions, the permitting process should begin. This may include actual submittal of permits or, at a minimum, a dialogue with the regulatory agency to identify specific information that will be required to obtain a permit.

Self-Check -1	Written Test

Directions 1: Choose the best answer for the following questions and write the answer on the answer sheet. (2 pts each)

1. In which project management phase preliminary schedule is developed?
   A. Initiating phase C. Planning phase
   B. Executing phase D. Closing phase
2. Which one of the following project management technique is included in project planning phase?
   A. Conducting post project reviews C. Identifying and assessing risk
   B. Establishing management procedures D. Executing the baseline project plan
3. The first step in the planning, design, and layout of any construction project is:
   A. Site assessment and data collection C. Divide the project into tasks
   B. Closing the customer contract D. Communicating the project status
4. Which site information provide useful information for plan designer to determine slope gradient and length?
   A. Hydrological information C. Soils information
   B. Topographical information D. Vegetative cover information

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-2	Determining project scope

2.1 Project Scope

Scope refers to the detailed set of deliverables or features of a project. These deliverables are derived from a project's requirements. Project Scope Management refers to the set of processes that ensure a project's scope is accurately defined and mapped. Scope Management techniques enable project managers and supervisors to allocate the right amount of work necessary to successfully complete a project concerned primarily with controlling what is and what is not part of the project's scope.Following are the three processes of Project Scope Management:

- Planning: The planning process is when an attempt is made to capture and define the work that needs to be done.
- Controlling: The controlling and monitoring processes focus on documenting tracking, scope creep, tracking, and disapproving/approving project changes.
- Closing: In the final process, the closing includes an audit of the project deliverables and an assessment of the outcomes against the original plan.

When selecting evaluation questions, it is important to ensure that these questions are answerable with the available data. Another important consideration is how the evaluation results will be used, by whom, and for what purpose.

2.1.1 Steps involved in project scope management

As a project manager, you'll need to define project scope no matter what methodology you choose. Here's one example of a systematic process to capture, define, and monitor scope.

- Define project needs: Defining the needs of the project is the first step to establish a project timeline, allocate project resources, and set project goals. Only with these defined steps, you will be able to understand the work that needs to be done, meaning, the scope of the project needs to be defined. Once that is done, team members can be allocated tasks and provided direction to deliver a project in the given time and budget.
- Understand the project objectives: To define the project scope, it is important first to establish the objectives of the project, which may include a new product, creating a new service within the organization, or developing a new piece of software. There

are several objectives that could be central to a project; the project manager ensures the team delivers results according to the specified features or functions.

- Define the project scope: The resources and work that goes into the creation of a product or service are essentially what defines the scope of the project. The scope generally outlines the goals that will be met to achieve a satisfactory result.

Steps for defining the scope of a project

- Project objectives
- Goals
- Sub-phases
- Tasks
- Resources
- Budget
- Schedule

To define the scope of the project, identify the above parameters. Once these parameters are established, the limitations of the project need to be clarified, and the aspects that are not to be included in the project identified. By doing this, the project scope will make clear to stakeholders, senior management, and team members what will and will not be included in the final product or service.

Additionally, the scope of the project should have a tangible objective for the organization that is undertaking the project. This is integral for the scope of the project since it will play a vital role in how project methodologies are applied to complete it.

The following steps can help you to effectively define the scope of a project:

Project Scope Step 1: Identify the project needs

When you are clearly able to identify the needs of a project, you are more likely to set a sound benchmark from the beginning. Understanding the 'what and why' of a project will enable you to set specific goals and objectives. It also sets the groundwork for what tasks are to follow and how they are to be performed.

Project Scope Step 2: Confirm the objectives and goals of the Project

The basis of the project scope should entail your goals and objectives to be one that follows a SMART guideline. That is, to be Specific, Measurable and Achievable. It should also be Realistic and completed within a specific Timeframe.

- **Specific–**This involves stating accurately what the project wants to achieve. That is, what, why and how these will be done. Clarity will reduce the chances of ambiguities and misunderstandings.

- **Measurable –**goals and objectives able to provide feedback and be accountable for.
- **Achievable –**project's goals and objectives be achieved, given the resources on hand.
- **Realistic –**the goals and objectives easy to deliver, especially if you face problems or complications.
- **Time Frame –**project goals and objectives be met within the allocated time frame.

Project Scope Step 3: Project Scope description

You as a leader, need to be clear about the features and functioning required for your product or service. In other words, what certain qualities will increase achieving your project's success.

Project Scope Step 4: Expectations and acceptance

Successful projects are ones that take into account the satisfaction of the end-user. Whether they meet the end-user's expectations and accept the product, service or process. The end-users could be your customers or your internal team. For customers, this includes pricing, value, and quality of products/services as well as availability, delivery and return policies. For employees, this includes the effectiveness and efficiency of new operational processes. Ultimately, your project scope is one that should be attuned to giving better outcomes to whoever your end users may be.

Project Scope Step 5: Identify constraints

There are always roadblocks to achieving what you were set out to do. When being aware of possible limitations along the way, it can help you minimize problems that may delay or constrain your ability to achieve your project's outcome. These can be caused by dynamic environmental conditions (internal and external), technological glitches and/or lack of resources. Communicating such problems with your team early on and taking steps to overcome these hurdles will reduce delays in project completion and keep spending within budget. Whether these are based on assumptions or uncertainty, analyzing their impact throughout the projects timeline further reduces the risk of failure.

Project Scope Step 6: Identify necessary changes

It is always best to avoid reworking the scope of your project, as it means investing in more time, money and resources. However, at times these changes are inevitable and necessary. Limit changes by taking on the perspectives of customers, stakeholders, and employees involved in the project. This minimizes disagreements later on. Projects are launched all the time across organizations whether they are internal or external. It's important to ensure successful project implementations so as to avoid a loss of a lot of time, money and in some cases reputations.

2.1.2 Project scope management processes

Project scope management has the following processes:

- **Plan scope management:** It is the first process in the project scope management process. This process creates the Scope Management plan. The Scope Management plan describes the project scope and documents how it will be further defined, validated, and controlled. The scope management plan covers how the scope will be defined, validated, and controlled. It also includes information on preventing or dealing with scope creep, handling change requests, the escalation path for any disagreement on the scope elements between stakeholders, the process for the creation of the scope statement, WBS, and how the deliverables will be accepted.
- **Collect requirements:** This process involves documenting stakeholders' needs with the stated intent of meeting the project's objectives. In this process, managers use several techniques and tools for collecting project requirements from stakeholders. The process attempts to leave no stone unturned, resulting in an in-depth list of project requirements. If this process is performed thoroughly and correctly, it can significantly reduce the possibility of unpleasant surprises as the project moves toward completion.
- **Define scope:** This process involves the preparation of a detailed description of the project and its major deliverables. The scope clearly states what the project is supposed to achieve and what it cannot accomplish. The supporting documents are reviewed to ensure that the project will deliver work in line with the stated goals. The scope that results states the stakeholders' needs and communicates expectations for project performance.
- **Validate scope:** The Validate Scope process focuses mainly on customer acceptance. It is when the project customer formally accepts all the project deliverables. This process occurs at the end of each phase. During the process, the customer gives feedback on the work that was performed.
- **Control Scope**: Control Scope is the last process group of project Scope Management. The Control Scope process involves monitoring the status of the project and managing changes to the scope. This process involves assessing additional requirements from the customer or proactively overlooking the project scope. Managers measure the work product against the scope baseline to ensure that the project stays on track, and all requested changes & recommended

corrective or preventive actions are processed through the integrated change control process.

Effective Scope Management requires clear communication, to ensure that stakeholders and team members alike understand the scope of the project while agreeing on how the project goals will be met. Scope Management helps avoid the challenges that a project might face with bloating scope and an unruly requirements list. Project scope clearly sets out what is or is not included in the project, and controls what gets added or removed as the project is executed. Scope Management establishes control mechanisms to address factors that may result in changes during the project lifecycle.

The Work Breakdown Structure (WBS) is an important element of the Scope Management process, and the places great emphasis on this aspect many project managers often skip this step, which leads to inaccurate planning. The WBS provides the project manager and the team with the opportunity to break down a high-level scope statement into smaller, manageable units of work, called work packages. The resulting WBS should provide a complete list of all work packages required to complete the project.

Without defining the project scope, the cost and time that the project will take cannot be estimated. At times, due to a lack of communication, the scope may need to change. It directly affects the cost and disturbs the schedule of the project, causing losses.

Successful Project Management takes into account the following considerations:

- An agreement on the acceptable quality level of the output of the project. As an example, if the project is to send a person to the moon, the quality requirements would be dramatically high.
- A budget for the costs that would be incurred to deliver the project.
- An accepted time period during which the project should be completed.

The three aspects are all related to each other and as such are set out at the beginning of the project and are tracked all through the implementation of the project. If there is a need to improve any one of the three elements, doing so would impact the other two elements.

Everyone in the organization should learn these three basic aspects of projects and define them at the beginning would help save a lot of costs, time and effort, not to mention reducing stress. After all, you don’t want your project to reach its final stages and then sadly realize that a whole lot of re-working needs to be done. Setting a clear project scope

would allow your team to manage it well and ensure that you have a happy customer whether that is an internal or external one.

Start your project off on the right foot by appropriately defining your project's scope. The aim of your project should steer in the direction of successfully meeting your project's outcome in a timely manner, within budget and be able to satisfy the end users expectations. Setting an effective project scope gives you and your team a sense of focus. It provides a foundation in which properly guides your project from start to finish.

Self-Check -2	Written Test

Directions 1: Choose the best answer for the following questions. Write the answer on the answer sheet provided (2 pts each)

1. Which process of project scope management includes an assessment of the outcomes against the original plan?

   A. Closing B. Controlling C. Planning D. Initiating

2. The first stepin project scope managementis----------

   A. Identify necessary changes D. Identify necessary changes

   B. Identify the project needs

   C. Identify constraints

3. Which project scope management processes mainly focuses on customer acceptance?

   A. Validate scope C. Collect requirements

   B. Control Scope D. Plan scope management

4. If the project scope states accurately what the project wants to achieve, the scope is said to be--------

   A. Realistic C. Measurable

   B. Specific D. Time Frame

5. Without defining the project scope, the cost and time that the project will take cannot be estimated.

   A. True B. False

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…… 5…….

Information Sheet-3	Identifying required resources and their availability

3.1 Introduction to project resources

Resources are people, equipment, place, money, or anything else that you need in order to do all of the activities that you planned for. Every activity in your activity list needs to have resources assigned to it. Before you can assign resources to your project, you need to know their availability. Resource availability includes information about what resources you can use on your project, when they're available to you, and the conditions of their availability. Don't forget that some resources, like consultants or training rooms, have to be scheduled in advance, and they might only be available at certain times. You'll need to know this before you can finish planning your project.

3.1.1 Estimating the resources

The goal of activity resource estimating is to assign resources to each activity in the activity list. There are five tools and techniques for estimating activity resources.

- **Expert judgment** means bringing in experts who have done this sort of work before and getting their opinions on what resources are needed.
- **Alternative analysis** means considering several different options for how you assign resources. This includes varying the number of resources as well as the kind of resources you use. Many times, there's more than one way to accomplish an activity and alternative analysis helps decide among the possibilities.
- **Published estimating data** is something that project managers in a lot of industries use to help them figure out how many resources they need. They rely on articles, books, journals, and periodicals that collect, analyze, and publish data from other people's projects.
- **Project management software** such as Microsoft Project will often have features designed to help project managers estimate resource needs and constraints and find the best combination of assignments for the project.
- **Bottom-up estimating** means breaking down complex activities into pieces and working out the resource assignments for each piece. It is a process of estimating individual activity resource need or cost and then adding these up together to come up with a total estimate. Bottom-up estimating is a very accurate means of estimating, provided the estimates at the schedule activity level are accurate.

However, it takes a considerable amount of time to perform bottom-up estimating because every activity must be assessed and estimated accurately to be included in the bottom-up calculation. The smaller and more detailed the activity, the greater the accuracy and cost of this technique.

3.1.2 Determine and secure resources

The purpose and scope of the evaluation needs to be considered when determining the budget. The amount of resources available may influence the level of an evaluation's rigor or the certainty of its findings. The importance of the program, existing knowledge about the program from previous evaluations and the decisions to which the evaluation will contribute are important factors to consider.

A program that has been thoroughly tested in a context similar to the current implementation setting may require fewer resources to satisfy information needs. A higher proportion of funds may be warranted for:

- Evaluations that will contribute to important decisions, such as whether to roll out a program on a large scale
- Evaluations that require highly defensible findings or will come under scientific scrutiny
- Programs that have not been evaluated before

Very often the available resources (time, money and expertise) will restrict the scope of the evaluation (the number of questions, size of the sample, data collection and analysis options) or influence the choice of evaluation designs. Some organizations have a policy of setting aside a certain percentage of the total program budget for evaluation. Organizations often use a "rule of thumb" to specify considerations in making a budget estimate. Common budget estimates range between 5 – 20% of program costs.

When commissioning an evaluation, it is wise to start the budgeting process by consulting with the budget, procurement and/or human resource offices within the organization in order to verify and understand budget process, rules, and stipulations. Engage project staff, stakeholders, and M&E staff or professionals to ensure that the budget is comprehensive and accurate.

The process of developing an evaluation budget may be an excellent opportunity to encourage stakeholders to agree on the value of the evaluation and the amount and type of resources necessary to support it. Sometimes after intended users are engaged and the

evaluation purpose and questions decided there is scope to add additional resources in order to undertake the type of evaluation that is required.

Budgets are just as critical for planning an internal evaluation as an external one. Although an internal evaluation draws primarily from resources within the organization, getting agreement on available resources will ensure the evaluation runs much more smoothly. For example, staff may be more flexible than consultants, but developing an accurate calculation of staff time costs early in the process helps to enlist their commitment.

Self-Check -3	Written Test

Directions 1: Choose the best answer for the following questions. Write the answer on the answer sheet provided. (2 pts each)

1. One of the following is **Not**project resource.

   A. People B. Equipment B. Money D. None

2. The tool and technique of estimating project resources which is a breaking down complex activities into pieces and working out the resource for each piece is----------

   A. Alternative analysis C. Bottom-up estimating

   B. Published estimating data D. Expert judgment

3. Which tool and technique for estimating activity resourcesconsidering several different options for how you assign resources?

   A. Alternative analysis C. Bottom-up estimating

   B. Published estimating data D. Expert judgment

4. The technique in which bringing the experts who have done this work before and getting their opinions on what resources are needed is----------

   A. Alternative analysis C. Bottom-up estimating

   B. Published estimating data D. Expert judgment

5. Before you can assign resources to your project, you need to know their availability.

   A. True B. False

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…… 5…….

Information Sheet-4	Identifying and recording work scope, outcomes and key dates

4.1 Work scope recording

A scope of work (SOW) document is an agreement on the work you're going to perform on the project. A scope of work is a document that covers the working agreement between two parties. Usually that's a client and an agency, vendor, or contractor. As a project manager, you'll use a SOW to make sure expectations are clear and agreed-upon, and that both you and whomever you're working with know exactly what they should be doing. To make that happen, an effective SOW should include things like:

- Project objectives: Your problem statement. What is it the issue that you're facing and what do you want to achieve with this project?
- Schedule/Milestones: When is the project starting and when does it need to be finished by? What are the major milestones or phases of the project that you'll be able to track and measure progress by?
- Individual Tasks: What exactly needs to get done in order to go from where you are now to a finished project?
- Deliverables: What do you need at the end of the project?
- Payment Information: How much is the project going to cost and how are you going to pay the team you're working with?
- Expected Outcomes: The answer to your problem statement. Are you looking for an increase in traffic, conversions, or sales? What is the business objective that you want to hit with this project and how will you measure and report on it?
- Terms, conditions, and requirements: Define the terms you're using in the SOW and any conditions or requirements that aren't already made clear.

A good SOW avoids some of the biggest project management traps, such as:

- Confusion, miscommunication, and disputes over scope
- Misinterpretations of expectations and needs
- "Selective Amnesia" of what was said and the need for expensive rework

It's a lot to ask. But if you pull it off, a SOW will ensure you, your stakeholders, and the outside teams you're working with all have a clear idea of what a "successful" project looks like, and how you're going to get there.

A SOW is a detailed doc that the people you're collaborating with will reference back to throughout the project and therefore needs some very specific information to be valuable. When you writing your SOW, make absolutely sure that it hits all these must haves:

- Explicit Details: If it's not on the SOW, don't assume it will get done. This means including assumptions on effort, time, and resources.
- Visualizations: Wherever possible show what you're talking about rather than try to explain it. Visualizations, pictures, and examples go a long way in explaining your goals and needs.
- Definitions for any terminology: Again, the golden rule of SOWs is "thou shalt not assume." If there are business terms, phrases, or acronyms in your SOW, make sure they are defined.
- Time for reviews: A SOW is a plan. But at their best, plans are just educated guesses. Make sure your project schedule and deliverable timeline has space in it for reviews, pivots, and unexpected changes in priorities.
- Success definitions: Probably the most important aspect of an effective SOW is both parties being aligned in what success looks like. If it's *at all* unclear what you want to achieve at the end, rewrite it.

4.2 Desiring project outcomes

Outcomes are defined as medium-term effects of project outputs. Outcomes are observable changes that can be linked to project interventions. Usually, they are the achievements of the project partners. They are logically linked to the intended impact. Outcomes are the results that link to the immediate objectives as described in the project document. These are any measurable and auditable changes that can be obtained as a result of the project's successful accomplishment. They determine the extent to which the identified problems have been mitigated, resolved, or eliminated.In terms of project evaluation and management, outcomes define the measurable results and benefits that are observable within the targeted environment once the project is done. They serve as the general indicator of project progress towards successful implementation of project goals and objectives. Outcomes describe short-term and medium-term effects generated by the project.

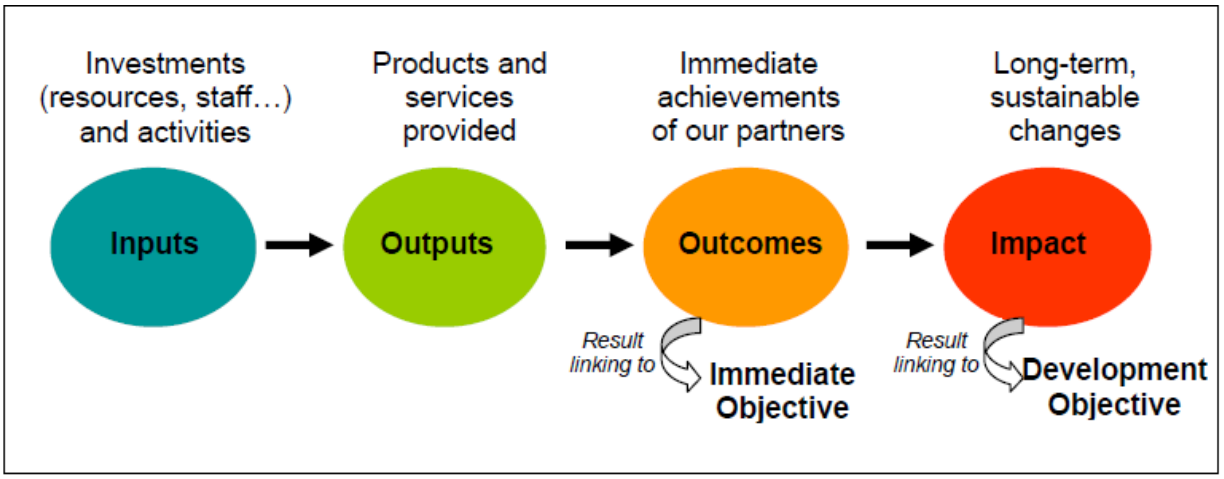


Figure 1. Desiring project outcomes

Self-Check -4	Written Test

Directions 1: Choose the best answer for the following questions. Write the answer on the answer sheet provided (2 pts each)

1. A document that covers the working agreement between two parties is--------
   A. scope of work
   B. Outcomes of work
   C. Impacts of work
   D. Outputs of work
2. Investments (resources, staff and activities) are ---------- for the.
   A. Impacts
   B. Outputs
   C. Outcomes
   D. Inputs
3. ----------are any measurable and auditable changes that can be obtained as a result of the project's successful accomplishment.
   A. Impacts
   B. Outputs
   C. Outcomes
   D. Inputs
4. Outcomes are the results that link to the immediate objectives as described in the project document.
   A. TrueB. False
5. One of the following project management traps is avoided by a good SOW.
   A. Confusion
   B. Miscommunication
   C. Disputes over scope
   D. All

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4……. 5…….

Operation Sheet 1	Organizing and undertaking site evaluation

1.1 Procedures for vegetative coverdata to collection**:**

1. Preparing materials
2. Identifying high quality and value of vegetation covers on the site
3. Identifying trees that can be very valuable asset and can significantly increase the aesthetics and salability of lots within a project.
4. Identifying which trees are diseased or may not survive construction activities
5. Recording and documenting all data
6. Finalizing your work

1.2 Procedures for soil information data to collection on the site:

1. Preparing tools and materials
2. Finding aerial photograph or topographic map of the project site
3. Delineating soil type from topographic map or aerial photograph
4. Recording and document the data
5. Finalizing your work

1.3 Procedures for topographic data to collection on the site:

1. Preparing necessary tools and materials
2. Measuring slope gradient and length of the site
3. Identifying sensitive features
4. Recording and documenting the data
5. Cleaning tools and materials
6. Finalizing your work

1.4 Procedures for hydrological data to collection on the site:

1. Preparing necessary tools and materials
2. Delineating hydrologic features from topographic map
3. Identifying sensitive features for sedimentation and flooding
4. Recording and document the data
5. Finalizing your work

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 8 hours.

Task 1. Organizing and undertaking site evaluation

Instruction Sheet	Learning Guide 48: Plan and document the project

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying and documenting tasks
- Coordinating and managing the preparation of technical specifications
- Preparing, distributing and reviewing an overview plan
- Developing contingency plans
- Developing effective and efficient communication strategies

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Identify and document tasks
- Coordinate and manage the preparation of technical specifications
- Prepare, distribute and review an overview plan
- Develop contingency plans
- Develop effective and efficient communication strategies

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, 2, 3, 4, 5, 6, 7 and 8” in page 28, 36, 47, 51, 57, 62, 68and 71respectively.
4. Accomplish the “Self-check 1, 2, 3, 4, 5, 6, 7 and 8” -” in page 35, 46, 50, 56, 61, 67, 70and 78respectively
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, Operation Sheet 2 and Operation Sheet in page 79
6. Do the “LAP test” in page 80

Information Sheet-1	Planning the project

1.1 Basic terminologies

Goal: A goal is the long-term change in specific problems or situations that you want to see in your community.

Objective: Project objectives stem from the project goal(s) but are more specific and concrete. Objectives are then achieved through activities.

Input: Inputs identify the resources that are needed to make your project operate. They include things such as staff, facilities and equipment.

Activity: Activities are what the project will do to achieve the desired objectives.

Output: Outputs are the products, goods or services you expect to produce or deliver as part of your project, or the number of people you expect to serve. They represent the concrete results of your activities.

Outcome: Outcomes are the impacts or changes your project activities are expected to make in your community. Outcomes usually occur in stages. Some happen soon after the activities occur (immediate outcomes). These outcomes in turn lead to others down the road (intermediate and long-term outcomes). The long-term outcomes are usually the same as the overall goal(s), while the immediate and intermediate outcomes are similar to objectives. Sometimes several activities work together to achieve one outcome and sometimes one activity has several outcomes.

Indicator: An indicator is information that is collected about a particular process or outcome that lets you know whether it has occurred or not. It tells you what is observable and measurable. Ultimately, all the indicators together tell you whether your project was able to achieve its main objectives and if it went along as planned.

Sources/Methods: Information sources and data collection methods are simply about where, how and when you will collect the information to document your indicators. Sources of information may include project staff, other agencies, participants and their families, members of the public and the media. Information may be collected via a variety of methods.

1.2 Project Planning

1.2.1 Concepts of project planning

Project planning is one of the three essentially phases in a project lifecycle. Such as:

- Phase 1 - Needs assessment

- Phase 2 - Project planning
- Phase 3 - Implementation

Project planning builds on what was discovered in the need's assessment phase. It focuses on what your crime prevention project is actually going to do and how it will address the problem/needs identified in your community.

Project planning is at the heart of the project life cycle, and tells everyone involved where you're going and how you're going to get there. The planning phase is when the project plans are documented, the project deliverables and requirements are defined, and the project schedule is created. It involves creating a set of plans to help guide your team through the implementation and closure phases of the project. The plans created during this phase will help you manage time, cost, quality, changes, risk, and related issues. They will also help you control staff and external suppliers to ensure that you deliver the project on time, within budget, and within schedule.

The project planning phase is often the most challenging phase for a project manager, as you need to make an educated guess about the staff, resources, and equipment needed to complete your project. You may also need to plan your communications and procurement activities, as well as contract any third-party suppliers.

The purpose of the project planning phase is to:

- Establish business requirements
- Establish cost, schedule, list of deliverables, and delivery dates
- Establish resources plans
- Obtain management approval and proceed to the next phase
- The basic processes of project planning are:
- Scope planning
- Preparation of the work breakdown structure
- Project schedule development
- Resource planning
- Budget planning
- Procurement planning
- Risk management
- Quality planning

- Communication

When articulating the project objectives, you should follow the SMART rule:

- Specific – get into the details. Objectives should be specific and written in clear, concise, and understandable terms.
- Measurable – use quantitative language. You need to know when you have successfully completed the task.
- Acceptable – agreed with the stakeholders.
- Realistic – in terms of achievement. Objectives that are impossible to accomplish are not realistic and not attainable. Objectives must be centered in reality.
- Time based – deadlines not durations. Objectives should have a time frame with an end date assigned to them.

The basic processes of project planning are:

- Scope planning
- Preparation of the work breakdown structure
- Project schedule development
- Resource planning
- Budget planning
- Procurement planning
- Risk management
- Quality planning
- Communication planning

1.2.2 Developing project plan

Using your answers to the questions in the first part of this guidance document, you are now ready to build your project plan. The steps described demonstrate how you would go about developing your project plan.

- Identify your project goal and who you intend to serve.
- Identify the objectives that will lead to your goal.
- Establish what the components of your project will be - that is, your broad strategies or service areas.
- Describe the project inputs. Who and what will be required to operate your project?
- For each component, describe your activities. Who will do what, and when?

- Identify the outputs of your activities. How many participants do you expect? What (and sometimes, how many) tools, materials, or events will be produced?
- Identify the **outcomes** linked to these activities. Remember that outcomes represent changes you hope to see result from your activities; they are not just the delivery of the activities themselves. You will want to mention the short-term and intermediate outcomes of your activities, making sure that these in turn link.

1.2.3 The Project planning process

The project planning process is where every project begins, though it can actually occur multiple times throughout the life cycle of a project. During the planning process, PMs identify and define several project plan components that ultimately form a consistent, coherent document outlining all the necessary tasks of the project.

Project plan components are a combination of the core and facilitating processes of a project.

I. Core processes of project planning

Core processes are usually interrelated and intertwined, and need to be performed in the same order on the majority of projects. In other words, they make up the “core” of what needs to be planned for or determined in order to get the project started.

Core processes include three essential procedures for developing the project plan:

Planning and defining the scope: The first thing to do is to develop a clear scope statement as the project’s foundation. The whole project will be built upon this scope statement; after that, you can subdivide the major project objectives into clear and manageable deliverables.

Developing the schedule: This includes identifying and cataloguing the activities that must be performed to produce the various project deliverables; analyzing the sequence of activities and documenting any interactivity dependencies; and estimating all the work periods needed and how long it will take to complete individual activities. It is also useful to design a Milestone List to help you evaluate the progress of a project.

Resource planning: This includes the determination of resources (people, equipment, materials, etc.) and the quantities necessary to carry out the project activities**,** the development of a cost approximation of the resources required to complete the project and the cost budgeting and allocation of the overall cost estimation to individual work packages.

II. Facilitating processes of project planning

The facilitating processes are general interactions among the planning processes that are dependent on the nature of each project. Although these processes are performed intermittently and in no particular sequence during project planning and execution, they are not optional and include six additional components of a project plan:

Quality planning: You should identify the quality standards relevant to the project and determine how to achieve them**.**

Organizational planning – WBS (Work Breakdown Structure): Here, you should identify, document and assign project roles and responsibilities among the staff and set the reporting relations. The next step is Staff Acquisition, or assigning human resources. A useful tip is to form clear and manageable work packages that correspond to the individual work performed by each staff member and create a document that will serve as a reference point for managing project progress.

Setting a communications plan: This involves configuring the information and communications needs of all the stakeholders (who needs what information, when will they need it and how they will get it).

Risk management planning: This is one of the most important components of a project plan and decides the approach and plan for risk management in a project. In other words, it is the safety net of each project and involves the following processes:

- Identifying key risks likely to affect the project and documenting the characteristics of each,
- Performing a qualitative risk analysis of the project's risks and conditions in order to prioritize their effects on the project objectives,
- Running a quantitative risk analysis to measure the probability and impact of each of the risks and estimating their impact on the project's objectives, and
- Finally developing a risk response plan, building up a mechanism to strengthen contingencies and reduce any threats to the project's objectives from risk.

Procurement planning: This consists of defining what to procure, how much to procure and when.

Solicitation planning: This means documenting product requirements and identifying potential sources.All the project management plan components listed above are to be gathered together to form a cohesive and coherent document that includes all the phases of the life cycle of the project. Hence, it is essential to share this document with all the stakeholders of the project so they can read through it, communicate any unclear points, exchange opinions, negotiate and make all the necessary alterations before the

project begins.Once your project plan is complete, the document can be used to resolve issues and identify your progress as the project moves forward. In other words, a good plan is essential for delivering a successful project.

1.2.4 Developing evaluation plan

Evaluation planning comes down to two questions:

- What are the desired outcomes of your project?
- How will you measure them?

It is about building benchmarks and accountability into your plan, and using them to evaluate the plan as you go and after the project is finished. It gives your project a more strategic structure, provides evidence for your results and, importantly, contributes to the knowledge base about effective crime prevention.

Quality evaluations use consistent data collection procedures. For example, interview questions should be asked to all participants in the same way, and interviewees should be careful to record the same information at every session. Where possible, collect data before and after a project. When data is collected only at the end of the project, you can't tell whether there was actually any change that occurred.

Good evaluations also require resources - that is, time and money. Some evaluation-related activities may be carried out by project staff (for example, questionnaires can be administered by a project coordinator), research assistants (for example, students may compile and analyses data) or by people with special expertise (for example, an evaluation consultant might draft your questionnaire).

The steps described demonstrate how you would go about developing your evaluation plan.

- Determine what information you will need to collect;
- Determine your information sources/data collection methods;
- Determine the frequency of the data collection and who will collect the information and
- Finally, determine how you will analyses your data and report your findings.

Self-Check -1	Written Test

Directions 1: Choose the best answer for the following questions. Write the answer on the answer sheet provided (2 pts each).

1. --------- identify the resources that are needed to operate the project.

A. Output
B. Objective
C. Goal
D. Input

2. The heart of the project life cycle, and tells everyone involved where and how you're going to get there is ----------.

A. Project needs assessment
B. Project planning
C. Project Implementation
D. Project completion

3. Which one of the following is the purpose of the project planning?

A. Establish resources plans
B. Review project completion
C. Evaluate project progress
D. Monitor final project stage

4. The basic processes of project planning in which spelling out the breakdown of the project in to tasks and sub tasks is----------

A. Preparation of the work breakdown structure
B. Project schedule development
C. Resource planning
D. Procurement planning

5. One of the following is core process of project planning.

A. Risk management planning
B. Quality planning
C. Developing the schedule
D. Organizational planning

6. Facilitating processes of project planning which is documenting product requirements and identifying potential sources is ------

A. Risk management planning
B. Solicitation planning
C. Quality planning
D. Procurement planning

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4……. 5…….

Information Sheet-2	Identifying project management tools and techniques

2.1 Project Evaluation Review Technique (PERT)

The PERT technique is a method of minimizing trouble spots, programme bottlenecks, delays and interruptions by determining critical activities before they occur so that various activities in the project can be coordinated.

Some of the terms frequently used in PERT are as follows.

Activity: A recognizable work item of a project requiring time and resource for its completion.

Dummy Activity: An activity that indicates precedence relationship and requires no time nor resource.

Critical Activity: Activities on the critical path having zero slack / float time.

Critical Path: The longest time path connecting the critical activities in the project network.The total time on this path is the shortest duration of the project.

Event: An instantaneous point in time signifying completion or beginning of an activity.

Burst Event: An event which gives rise to more than one activity.

Merge Event: The event which occurs only when more than one activity is accomplished.

Expected Time: The weighted average of the estimated optimistic, most likely and pessimistic time duration of a project activity:

$$\text{Expected Time } (T_E) = \frac{T_o + 4T_M + T_P}{6}$$

Where $\mathbf{T_o}$ is the Optimistic time, $\mathbf{T_M}$ is the Most likely time and $\mathbf{T_p}$ is the Pessimistic time

Earliest Start Time (EST): The earliest possible time at which the event can occur. The EST also denotes the Earliest Start Time (EST) of an activity as activities emanate from events. The EST of an activity is the time before which it cannot commence without affecting the immediate preceding activity.

Latest Start Time (LST): The latest time at which the event can take place. Also referred as the Latest Start Time (LST) indicating the latest time at which an activity can begin without delaying the project completion time.

Slack: The amount of spare time available between completion of an activity and beginning of next activity.

Both CPM and PERT describe the work plan of project where arrows and circles respectively indicate the activities and events in the project. This arrow or network diagram includes all the activities and events that should be completed to reach the project objectives. The activities and events are laid in a planned sequence of their accomplishments. However, there are two types of notations used in the network diagram. They are as under,

- Activity-on-Arrow (AOA), and
- 2. Activity-on-Node (AON).

2.1.1 Creating a PERT Chart

A flowchart is used to depict the Project Evaluation Review Technique. Nodes represent the events, indicating the start or end of activities or tasks. The directorial lines indicate the tasks that need to be completed, and the arrows show the sequence of the activities.

PERT planning involves the following steps:

Step1: Identify the specific activities and milestones.

An activity in a project is the lowest level of resource consuming, time-bound work having a specified beginning and endpoint. It should be quantifiable, measurable, costable, and discrete. The total project is subdivided into activities and each activity is given an alphabetical symbol / code.

Table 1. List of activity

Sr. No	Activity	Symbol/Cod
1	Site selection	A
2	Digging well	B
3	Laying field channels	C
4	Procurement of pump	D
5	Installation of pump	E
6	Test run	F

Step 2: Define the inter relationship among the activities

The relationship among the activities could be defined by specifying the preceding and succeeding activity. Preceding activity for an activity is its immediate predecessor, i.e. the activity that needs to be completed before the start of the new activity. In the given example, selection of the site precedes digging of well. In other words, the site needs to be selected before digging of the well. Thus, the activity "Selection of site" becomes proceeding activity to the activity of "Digging the well" Succeeding activity is the one that immediately starts after completion of the activity. "Digging well" is the succeeding activity to "Selection of site".

Table 2. Interrelationship of activities

Sr. No	Activity	Symbol/Cod	Preceding activity
1	Site selection	A	-------
2	Digging well	B	A
3	Laying field channels	C	B
4	Procurement of pump	D	A
5	Installation of pump	E	B, D
6	Test run	F	C, E

Step 3: Estimation of activity time

The activity time is the time, which is actually expected to be expended in carrying out the activity. In deterministic cases as in Critical Path Method CPM one-time estimate is used. In probabilistic cases as in PERT, the activity time has some kind of probabilistic distribution and is the weighted average of three-time estimates (Optimistic time, Pessimistic time and Most likely time) for each activity. The expected time for each activity is computed as following:

$$\text{Expected Time } (T_E) = \frac{T_o + 4T_M + T_P}{6}$$

Where T_o is the Optimistic time, (minimum time assuming everything goes well)

T_M is the Most likely time, (modal time required under normal circumstances)

T_p is the Pessimistic time, (maximum time assuming everything goes wrong)

Example: Estimation of estimated time for the activity "Site selection"

For this activity the tree time estimates i.e., Optimistic, Most likely and Pessimistic times are 4, 6 and 14 days respectively.

i.e. TO = 4, TM = 6, and TP = 14.

$$T_E = \frac{4 + 4*6 + 14}{6} = \frac{4+24+14}{6} = \frac{42}{6} = 7 \text{ days}$$

The three time estimates and computed estimated time for the project activities are given in Table 3.

Table 3. Activity time estimates

Sr. No	Activity	Symbol/ Cod	Preceding activity	Time (Date)			
				Optimistic Time T_O	Most likely time T_M	Pessimistic time TP	Estimated time TE
1	Site selection	A	-------	4	6	14	7
2	Digging well	B	A	2	3	4	3
3	Laying field channels	C	B	7	16	19	15
4	Procurement of pump	D	A	4	7	10	7
5	Installation of pump	E	B, D	3	4	11	3
6	Test run	F	C, E	1	2	3	2

Step 4: Assemble the activities in the form of a flow chart.

In a flow chart the activity and its duration is shown in a box. The boxes are connected with lines according to the preceding and succeeding activity relationship. The flow charts do not give details like start and completion time of each activity until unless it is super imposed on a calendar. It also does not facilitate computation of various slacks. However, the critical path for the project can be identified by comparing the various path lengths (sum of activity time, from start to finish, on any path). The longest path in the chart is the critical path. The flow diagram for the project considered for illustration is as in Figure 2.

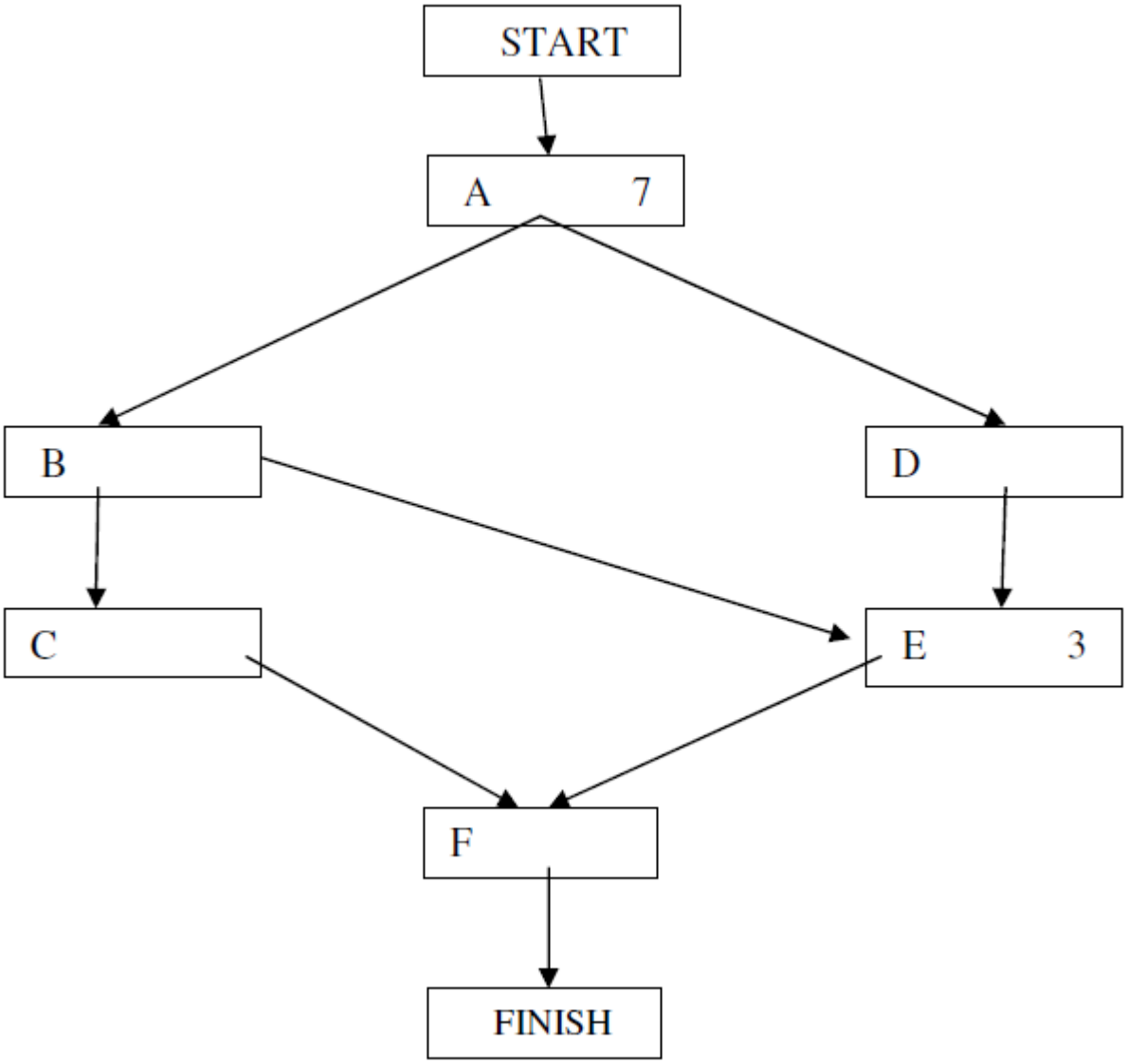


Figure 2. The flow diagram

Path I A-B-E-F 7+3+3+2 = 15

Path II A-B-C-F 7+3+15+2 = 27

Path III A-D-E-F 7+7+3+2 = 19

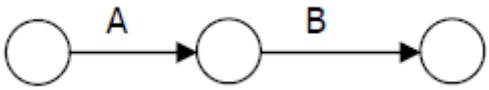
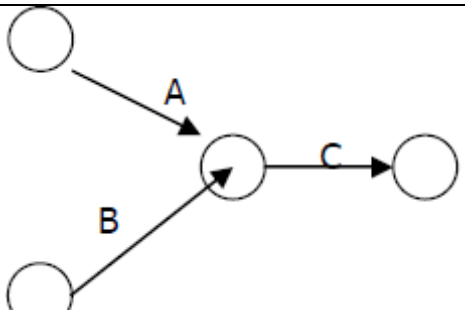
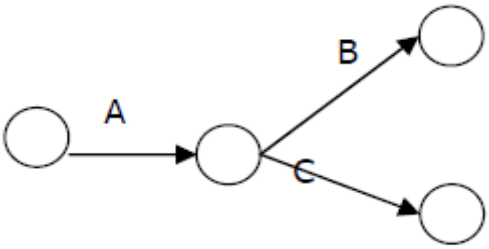
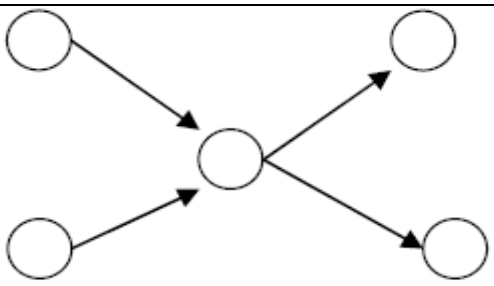
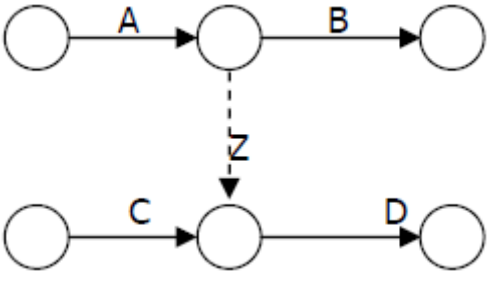
Path II i.e., A-B-C-F being the longest path (27 days) is the Critical path.

Step 5: Draw the network

This graphical representation of the project shows the precedence relationship among the activities. An arrow generally represents activities in the diagram while a circle represents event. Each activity starts with an event and end in an event. Activities in a project are performed either sequentially i.e. one after another or they are undertaken concurrently i.e.

simultaneously. To draw the network, it requires the knowledge of specifying which activities must be completed before other activities can be started, which activities can be performed in parallel, and which activities immediately succeed other activities. Some of the common combination of activity in a project is as follows,

Table 4. Combination of activities

Sr. No	Diagram	Logic
1		Activity “A” is preceding activity of “B”. i.e. activity ‘A” needs to be completed before start of activity “B”. In other words, “B” starts after “A” is finished.
2		Activity “A” and “B” are concurrent. Activity “C” cannot start until both the activities “A” and “B” are completed.
3		Activity “B” and “C” are concurrent activities. Any one of these cannot start until activity “A” is completed.
4		Neither activity C nor D can start until both the activities A and B are completed. But C and D can start independently.
5		Activity D cannot begin until both A & C are completed. But B can start after A is complete. The activity Z, represented by dashed arrow, is a dummy activity (Explained below). It specifies the inter relationship.

The activity “Z”, represented by dashed arrow in the diagram, is a dummy activity. This does not consume any resource i.e. have zero time and zero cost. This only represents the logical relation among the activities.

2.1.2 Rules for Drawing the Network:

- Each activity is represented by one and only one arrow in the network
- All the arrows must run from left to right.
- Dotted line arrows represent dummy activities.
- A circle represents an event.
- Every activity starts and ends with an event.
- No two activities can be identified by the same head and tail event.
- Do not use dummy activity unless required to reflect the logic.
- Avoid Looping and crossing of activity arrows by repositioning.
- Every Activity, except the first and the last, must have at least one preceding and one succeeding activity.
- Danglers, isolated activities must be avoided.
- For coding use alphabets for all activities including the dummy activity and numbers for events.
- Standard representation of the event:

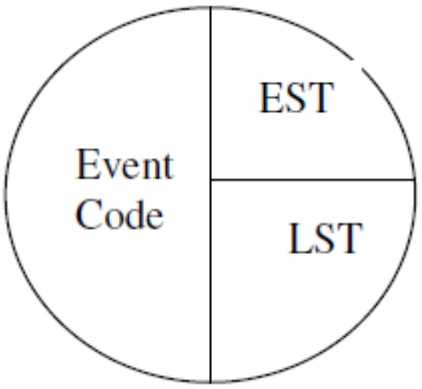


Fig 3. Representation of events

The network diagram for the project detailed in figure 4 is as follows:

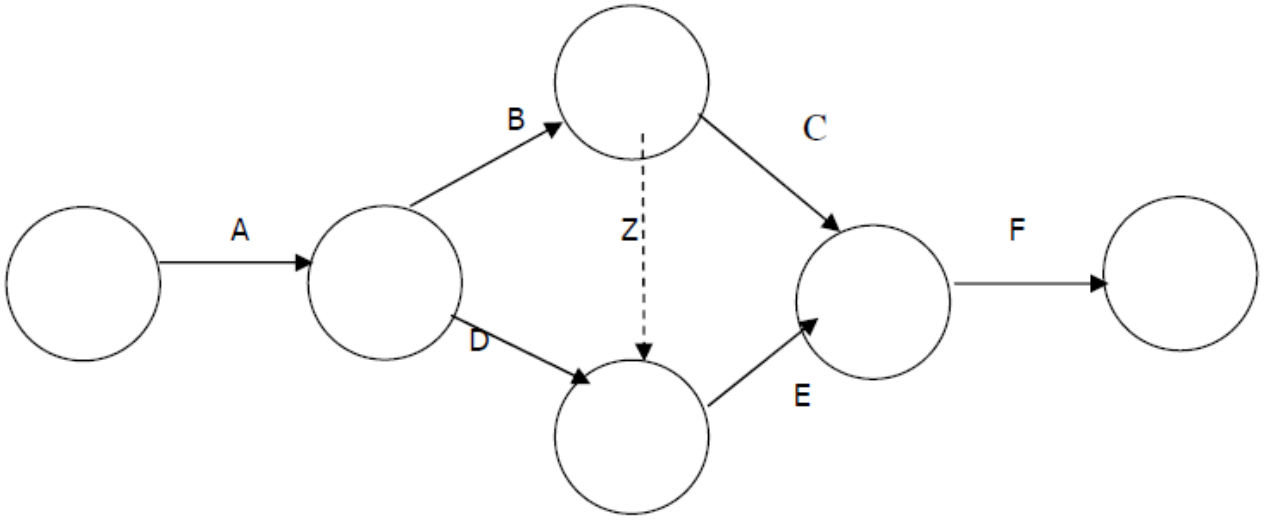


Figure 4. Activity inter-relationship

2.1.3 Advantages of PERT

Here are several benefits of using PERT in project management:

- It helps maximize the use of resources.
- It makes project planning more manageable.
- It's useful even if there is little or no previous schedule data.
- It enables project managers to better estimate or determine a more definite completion date.

2.1.4 Disadvantages of PERT

Like any other method, PERT comes with its share of limitations:

- In complex projects, many find PERT hard to interpret, so they may also use a Gantt Chart, another popular method for project management.
- It can be tedious to update, modify, and maintain the PERT diagram.
- It entails a subjective time analysis of activities and, for those who are less experienced or are biased, this may affect the project's schedule.

2.2 Gantt charts

Henry L Gantt (1861 – 1919) around 1917 developed a system of bar charts for scheduling and reporting progress of a project. These charts latter were known as Gantt Charts. It is a pictorial representation specifying the start and finish time for various tasks to be performed in a project on a horizontal time-scale. Each project is broken down to

physically identifiable and controllable units, called the Tasks. These tasks are indicated by means of a bar, preferably at equi-distance in the vertical axis and time is plotted in the horizontal axis (Figure 5). In this figure “Task A” is land preparation, “Task B” is procurement of inputs etc. Land preparation (Task A) takes five days starting from day one. However, in practice the time scale is superimposed on a calendar i.e., if land preparation starts on 1st June it would be completed by 5th June.

Length of the bar indicates required time for the task whereas the width has no significance.

Though the bar chart is comprehensive, convenient, and very effective, it has the following limitations:

- Like many other graphical techniques are often difficult to handle large number of tasks in other words a complex project.
- Does not indicate the inter relationship between the tasks i.e., if one activity overruns time what would be the impact on project completion.

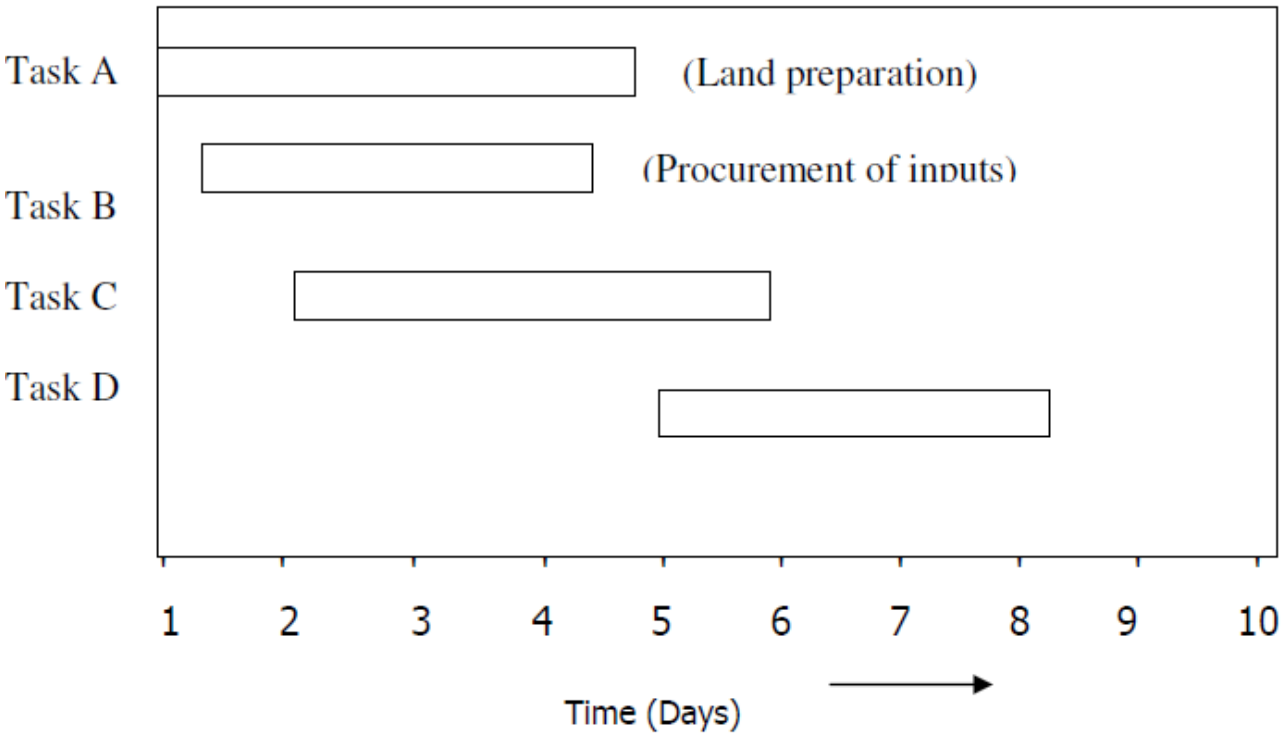


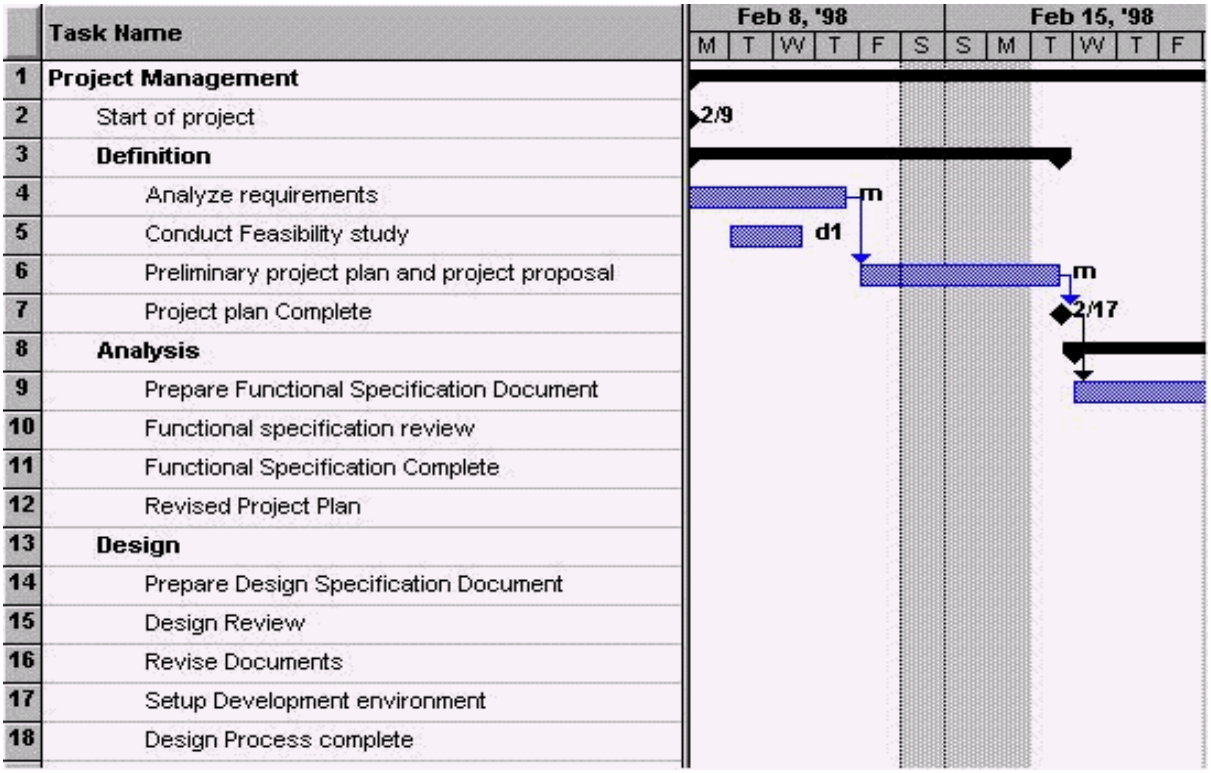
Figure 5. Gantt chart

To draw up a Gantt chart, follow these steps:

- List all activities in the plan.

- Head up graph paper with the days or weeks through completion.
- Plot tasks onto graph paper.
- Schedule activities.
- Presenting the analysis.

This chart will show when you anticipate that jobs should start and finish. An example of a Gantt chart is provided below:



Benefits of using a Gantt chart include:

- Gives an easy to understand visual display of the scheduled time of a task or activity.
- Makes it easy to develop "what if" scenarios.
- Enables better project control by promoting clearer communication.
- Becomes a tool for negotiations.
- Shows the actual progress against the planned schedule.
- Can report results at appropriate levels.
- Allows comparison of multiple projects to determine risk or resource allocation.

Self-Check -2	Written Test

Directions 1: Choose the best answer for the following questions. Write the answer on the answer sheet provided (2 pts each).

1. The shortest time in which the activity can be completed in PERT model is called------
   A. Expected time
   B. Pessimistic time
   C. Optimistic time
   D. Most likely time
2. One of the following is the disadvantages of PERT.
   A. It enables project managers to better estimate
   B. It helps maximize the use of resources
   C. It makes project planning more manageable
   D. In complex projects, many find PERT hard to interpret
3. Which one of the following is the benefit of using a Gantt chart?
   A. It can be tedious to update
   B. Becomes a tool for negotiations
   C. It is hard to interpret
   D. It entails a subjective time analysis of activities
4. In a PERT chart crashing critical path refers to:
   A. longest possible continuous path
   B. Shortening the amount of time to do a critical task
   C. handling tasks or activities in parallel
   D. an activity without any slack
5. The events that mark the beginning and the end of one or more activities in PERT planning is ------
   A. critical path
   B. milestones
   C. network diagram
   D. sequence of activities

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

1. 2. 3. 4. 5.

Information Sheet-3	Identifying and documenting project tasks

3.1 Project tasks

In project management, a task is an activity that needs to be accomplished within a defined period of time or by a deadline to work towards work-related goals. It is a small essential piece of a job that serves as a means to differentiate various components of a project. A task can be broken down into assignments which should also have a defined start and end date or a deadline for completion. One or more assignments on a task puts the task under execution. Completion of all assignments on a specific task normally renders the task completed. Tasks can be linked together to create dependencies.

Tasks completion generally requires the coordination of others. Coordinated human interaction takes on the role of combining the integration of time, energy, effort, ability, and resources of multiple individuals to meet a common goal. Coordination can also be thought of as the critical mechanism that links or ties together the efforts on the singular level to that of the larger task being completed by multiple members. Coordination allows for the successful completion of the otherwise larger tasks that one might encounter.

There are two approaches of tasks in project management:

- **Bottom-up tasking:** Bottom-up (tactical) tasking means that you plan small, individual units of work that are required, then build a project up to include larger phases. Take this approach when you know what individual tasks are required to be accomplished and you are more flexible about overall project duration and estimated cost. Use this approach to see how much a project costs and how long it takes if you include every task.

- **Top-down tasking:** Top-down (strategic) tasking means that you plan high-level tasks first, then break down the work into smaller units. Take this approach when you want to build a project with fixed or inflexible time and budgetary constraints and well-defined phases. Establish well-defined milestones and dependencies between tasks that you consider from the beginning. Gradually add smaller tasks to the project later. This approach avoids including all possible tasks in a project and stays flexible with what tasks are included.

3.2 Documenting tasks

Documentation in project management is essential. There are many types of project documents, which are also known as project artifacts. How do you decide on the documents to use for your projects? Your project management offices (PMOs) will provide you with guidance regarding the minimum required project documents to use on your projects. Your PMOs will not penalize you for using additional documents above the required documents; however, your PMOs will penalize you for failing to use the minimum required project documents.

Let's look at 10 of the most common project documents, including formal and informal project documents:

- **Project Schedule:** Typically, project managers use project software to manage their projects' schedules, resources, dependencies, and project costs.
- **Risk Management:** A risk management document is used for the purpose of capturing risks by group and category, and it allows you to rank or prioritize your risks. Risks could convert to issues.
- **Issues Log:** Issues could block your project from moving forward or delay your implementation date. You need to use this document to track your issues to completion.
- **Project Budget:** It's imperative to track your project budget. This document allows you to track all costs associated with your project. Project costs include resources, hardware, software, and vendors.
- **Communication Plan:** This is a key project document because it proactively communicates to all of your stakeholders your communication media, frequency of communication, and communication content. You do not want your stakeholders guessing about your communication strategy.
- **Project Status Report:** You need to communicate your project status to your stakeholders and should report on progress and accomplishments, risks, issues, and next steps.
- **Project Charter:** This document captures the mutual agreement and initiation of a project. The charter contains a high-level schedule, high-level assumptions and constraints, and project requirements.
- **Meeting Agenda/Minutes:** Document your formal status meetings. Many organizations have existing meeting templates for you to create your meeting

agenda. Meeting attendances tend to be higher when invitees can verify in advance that your meeting will be productive. You should recapture the meeting discussions using your meeting minutes document because it would help to provide clarity after the meeting and/or uncover discrepancies.

- **Quality Assurance (QA) Test Plan:** Reviewing and authorizing your projects' QA document could save time and money later during your project testing phase. The QA document contains the testing strategy, testing tools (automation), high-level duration, and a number of QA testers.
- **Project Management Plan:** The Project Management Institute (PMI) consolidated nine subsidiary plans, including:
    - Scope management
    - Scheduling management
    - Resource management
    - Quality management
    - Process improvement
    - Staffing management
    - Communication management
    - Risk management
    - Procurement management

Self-Check -3	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. Tasks can be linked together to create dependencies.
   A. True B. False
2. The document which captures the mutual agreement and initiation of a project is:
   A. Communication Plan C. Project Schedule
   B. Project Charter D. Project Status Report
3. Approach of tasks that used to plan high-level tasks first, then break down the work into smaller units is ----------
   A. Top-down tasking C. Tactical tasking
   B. Bottom-up tasking D. Specific tasking
4. Tasks completion generally requires the coordination of others.
   A. True B. False

Note: **Satisfactory rating - 4 points Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-4	Coordinating and managing technical specifications

4.1 Technical specifications

Technical specifications (specifications) are defined as “an explicit set of requirements to be satisfied by a material, product, system, or service.” Specifications effectively draw the line between what is recommended and what is required. They are a supplement to a set of construction drawings, and often go into greater detail than can otherwise be expressed efficiently on a drawing set.

A technical specification (or “spec”) is a normative document on which the project development is based. It contains detailed requirements for the components and characteristics of the future web product.

One of the most important (and often times most difficult) aspects of a construction project is describing the desired finished product in a manner that is clear to all parties involved. Setting well-defined, measurable expectations for the contractor is paramount to the success of any job. Not only will the client be more likely to be pleased with the final product, but the contractor will be spared from the headache associated with redoing or replacing work, losing both time and money.

When preparing such a document, care must be taken to use clear but concise language to eliminate possible confusion. Well-written specifications anticipate items that might be subject to interpretation and contain sufficient detail to protect the client’s interests and limit contractor change orders and scheduling delays.

The term specification is used in multiple contexts in relation to project management. In all such contexts a specification is a document drawn up as a result of concerted effortby project management personal, sometimes including the input of any persons providing financial backing or commissioning the project in question.

Technical specifications are written requirements and instruction which is used with construction drawings to complete irrigation construction projects. So, information provided in technical specifications and construction drawings are different.

If the information provided in technical specification conflicts with those provided in construction drawing, the provisions of the former will precede those of construction drawings.

4.2 Provisions of technical specifications of irrigation construction projects

Technical specifications provide information about civil projects which is not provided in construction drawing. Information provided in technical specifications of megairrigation projects are as follows:

- Testing requirements for quality assurance and quality control.
- Steps for equipment and material placement
- Detailed material requirements
- List of materials and equipments which are not provided or shown in construction drawings
- Construction sequence and restrictions
- Submittal and schedule requirements
- Measurement and payment provisions for all work items
- Coordination with other contractor at work
- Permits achieved by owner
- Responsibilities
- Safety issues
- Reference data for instance field and laboratory test data, records of existing site and facilities, stream flow records, and climatic data

Miscellaneous general requirements for example environmental abatement, temporary facilities, and waste disposal which cannot be shown in the drawings.

A requirement specification is a document that describes as completely as possible a product or service to be created, including prerequisite function, behavior, and other characteristics. A design specification defines essential performance characteristics or goal to be satisfied by the completed.

4.3 Designing the technical requirements

Technical requirements are the technical issues that must be considered to successfully complete a project. These are aspects such as performance, reliability, and availability that

your project must meet on in order to proceed with a project. In software projects, technical requirements typically refer to how the software is built, for example: which language it's programmed in, which operating system it's created for, and which standards it must meet. The technical requirements should provide enough technical details about the project so as to allow a precise definition of the design of the infrastructure (and the characteristics of the service) to be implemented, while avoiding being too prescriptive as explained below.
In practice, the exact content of the technical requirements depends upon the type of project, the type of contract, and the legal requirements of the jurisdiction. However, the technical requirements are typically composed of a project design and construction requirements, as well as the performance requirements, as explained below.

A detailed description of the service requirements involves indicating the level of service, its beneficiaries (who it will serve), and the main aspects of the delivery of value for users. The service requirements should contain the following information.

- A very precise description of the scope and minimum characteristics of the content of the service to be delivered by the private sector. This should be in the form of a verifiable preliminary output specifications, as opposed to an input specification;
- The outputs generated by the delivery of the service in terms of effective benefits for users and the wider community;
- The main responsibilities, related to the service to be delivered, retained in the public sector;
- The preliminary requirements for an effective performance evaluation system that will create adequate and effective incentives during the life of the contract;
- The minimum requirements for an infrastructure maintenance plan, noting the danger of prescribing the means and allowing space for innovation; and
- Specific requirements, whenever they are relevant, about the service hand-over to government at the end of contract.

During the design of the technical requirements, a number of additional tasks must be done, which relate to the technical preparation of the project and influence the cost assessment of the project.

- Field surveys of the project site, which may include mapping, and topographical and geo-technical surveys;

- A thorough identification of all the land expropriation required, including the mapping of the areas, identification of the owners, and the estimation of the costs and time needed for the expropriation procedures;
- The assessment of potential resettlement issues;
- The assessment of any linked infrastructure requirements, such as availability of utility services or connecting roads to the project site;
- In some projects, it is also necessary to carry out an archaeological and/or anthropological survey to map the potential archaeological and/or anthropological findings;
- For linear transport infrastructure, the track or the layout should be identified and defined;
- For linear transport infrastructure, especially in urban or suburban areas, the location of utilities should be mapped and reallocation needs should be assessed; and
- For any project, an environmental assessment will be conducted.

4.4 Creating technical specification documents

There are many approaches to writing the technical specification requires, well, technical writing skills and wording. It should deal with concrete terms that are unanimously understood and therefore avoid creating confusion.

Your TS document, as a result, should include the following:

- Table of contents: usually technical documentation is a lengthy document; therefore, the table of contents helps to navigate it.
- Writing actual specifications
- Assigning titles (signature blocks for authorities)
- Definition of terms used

Self-Check -4	Written Test

Directions: Give short and precise answers for the following questions.

1. Give a possible definition for project technical specification. (3 pts)
2. List at least five information provided in technical specifications of mega irrigation projects (5 pts).
3. What are the points that should be included when you create technical specification documents? (5 pts)
4. Write at least three functions of technical specifications. (3 pts)

Note: **Satisfactory rating - 8 points** **Unsatisfactory - below 8 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-5	Preparing, distributing and reviewing an overview plan

5.1 Overview of a project plan

Project planning is one of the most important stages of a project management lifecycle, as it is at this stage that a project manager determines precisely what needs to be done, who will be doing it and how to implement it. During this stage, the project manager will create the project plan, which is a document that contains all the vital information that a team needs to drive a project forward and bring it to a successful closure during the execution phase. In this article, we explain how to create a project plan, as well as a few tips that can be of value to project managers in the planning phase of a project.

Project planning is the second of the four stages of a project management life cycle, which are initiation, planning, execution and closure. During this stage, a project manager develops a project plan, which is a formal document that contains directions and information about all aspects of a project, such as resources, financing, risk, quality control and procurement. Creating this detailed document is an important part of project management, as it serves as a map for the project and provides all parties with crucial information regarding factors like milestones, timeframes, resources, deliverables and scope.

5.2 Components of a project plan

A project plan is a comprehensive document that guides a project team during the execution stage of a project. For this reason, a project manager must include detailed information in this document so that the execution of the project can run smoothly. The project plan should include the following:

Scope planning: This is one of the most important steps in project planning as it delineates precisely what the team has to deliver to complete the project successfully.

Organizational planning: This aspect of the project plan incorporates the work breakdown structure, where a project manager divides the deliverables of a project into detailed activities and tasks. It also involves staff acquisition and assigning resources to project tasks.

Developing a schedule: This part of the project plan involves creating a milestone list, sequencing project activities, documenting interactivity dependencies and deciding on timelines.

Resource planning: Resource planning includes determining what resources, such as staff, materials and equipment, you will need to complete the project, as well as estimating how much these will cost.

Risk planning: This involves determining possible risks and how to deal with these should they occur. Risks may include material shortages or other potentially negative outcomes.

Quality planning: The quality of the work the team delivers must adhere to certain standards. This part of the project plan identifies those standards and states how quality control will take place.

Budget planning: A project will not be successful if you do not deliver within budget. During budget planning, a project manager links all project costs to key tasks and deliverables, such as equipment, materials, salaries, travel, accommodation, consultancy fees and consumables.

Communication planning: Communication between stakeholders is key to the success of a project. A project manager has to formalize how effective communication should take place, which may include methods, channels and frequency.

Figure 6. Project planning

5.3 Preparing project plan

Although different project managers may have different approaches when it comes to planning a project, there are key considerations that all project managers need to consider. These include:

Set project goals: The first step you should take when creating a project plan is to identify the project sponsors and stakeholders, such as the client and end-users, and then meet with them to establish what their expectations and needs are. After you have documented and prioritized all relevant parties' needs, you should determine specific project goals that address these needs and outline the project objectives.

Define the project scope: The next important step involves defining the scope of the project, which means precisely what work the team needs to complete to meet the project objectives. A project's scope defines the limits and the boundaries of the project and serves to prevent "scope creep," which refers to tasks or products that fall outside of the agreed-upon scope.

Decide on the major deliverables: Once all parties have agreed upon the project scope, your next step will be to define the deliverables of the project. Whereas the scope of a project refers to the whole body of work necessary to complete the project, deliverables include all specific products or services that the project team will be producing or delivering during the project.

Create the scope statement: Next, you should create the scope statement document, which includes important information like the business needs the project will address, objectives, scope, deliverables, assumptions, exclusions and key milestones. Once you have created this document, the sponsor and all stakeholders should agree with the project details you have recorded in the document, to prevent any chance of miscommunication. As this is basically a contract between the project manager and the sponsor, the latter needs to be cognizant of, and approve, any changes that you may request in the latter stages of the project.

Create a work breakdown structure, as well as schedule and cost baselines: Although you understand what the major deliverables of the project are at this stage, you'll need to establish how to implement these deliverables. To do so involves developing a work breakdown structure where you separate big deliverables into smaller, workable tasks.

Once you have established all the various activities that your team needs to complete to implement deliverables, order them in a logical sequence. Then, decide how long each task will take to complete, as well as the costs involved in executing them.

It is advisable to first create a milestone list, which are the major phases of the project, and use this as a point of departure when deciding on timeframes for individual tasks. Once you have established all timelines, create a project schedule that clearly indicates when each task begins and ends.

Assign roles and responsibilities: The next step involves assigning specific tasks to team members so that everyone understands their responsibilities. You may also need to source external resources and specialists for complex tasks that require expertise or that fall outside of the skillset of your project team. For clarity, develop a staffing plan that clearly outlines the length of time that each resource will be involved with the project.

Complete a risk assessment: A risk management plan is a very important aspect of project planning, as it addresses aspects of a project that may negatively influence its successful completion. This process involves identifying possible risks, the probability of these occurring and the impact should they materialize. Once you have established the risks and their gravity, develop a risk response plan, which outlines responses and contingency plans should risk occur. Doing so minimizes the impact any major threat may have on a project.

Self-Check -5	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. ----------is the stage of a project management life cycle in which a project manager develops a project plan.
   A. Initiation
   B. Planning
   C. Execution
   D. Closure
2. The part of the project plan which identifies certain standards and states how quality control will take place ------.
   A. Communication Plan
   B. Resource planning
   C. Quality planning
   D. Scope planning
3. Which part of project planning used to delineate what the team has to deliver to complete the project successfully?
   A. Communication Plan
   B. Resource planning
   C. Quality planning
   D. Scope planning

4. Which step of project planning addresses aspects of a project that may negatively influence its successful completion?
   A. Complete a risk assessment
   B. Assign roles and responsibilities
   C. Create the scope statement
   D. Decide on the major deliverable

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…… 5…….

Information Sheet-6	Developing contingency plans

6.1 Contingency planning

A contingency plan is essentially a “Plan B.” It’s a backup plan in place for when things go differently than expected. In other words, a contingency plan in project management is a defined, actionable plan that is to be enacted if an identified risk becomes a reality. For a more “official” version of the term, the Project Management Institute defines it as, “Contingency planning involves defining action steps to be taken if an identified risk event should occur.” Contingency plans in project management are a component of risk management, and they should be part of the risk management plan.

Contingency plans can only be created for identified risks, not unidentified or unknown risks. Since, if you don’t know what your risk is, it’s impossible to plan for it. It should be noted that contingency plans are not only put in place to anticipate when things go wrong. They can also be created to take advantage of strategic opportunities. For example, you’ve identified that a new training software should be released soon. If it occurs during your project, you may have a contingency plan on how to incorporate it into the training phase of your project.

The difference between a contingency plan and a mitigation plan is thata mitigation plan attempts to decrease the chances of a risk occurring, or decrease the impact of the risk if it occurs. It is implemented in advance. A contingency plan explains the steps to take after the identified risk occurs, in order to reduce its impact. Think of a contingency plan as the last line of defense.

Developing a contingency plan involves making decisions in advance about the management of human and financial resources, coordination and communications procedures, and being aware of a range of technical and logistical responses. Such planning is a management tool, involving all sectors, which can help ensure timely and effective provision of humanitarian aid to those most in need when a disaster occurs.
Time spent in contingency planning equals time saved when a disaster occurs. Effective contingency planning should lead to timely and effective disaster-relief operations.

Contingency planning is most often undertaken when there is a specific threat or hazard; exactly how that threat will actually impact is unknown. Developing scenarios are a good way of thinking through the possible impacts. On the basis of sensible scenarios, it is possible to develop a plan that sets out the scale of the response, the resources needed and the practical management tasks that will be needed.

A contingency plan is a plan, and like any plan, it requires a great deal of research and brainstorming. And like any good plan, there are steps to take to make sure you're doing it right. These are:

Identify and prioritize resources: Research your company and list its crucial resources, such as teams, tools, facilities, etc., then prioritize that list from most important to least important.

Identify key risks: Figure out where you're vulnerable by meeting with teams, executives and every other department in the organization to get a full picture of what events could compromise your resources; hire an outside consultant, if necessary.

Draft a contingency plan: If you can, write a contingency plan for identified in the above steps, but start with what's most critical to the life of your organization. As time permits you can create a plan for everything on your list. Whatever the plan, the thought behind each should be the steps necessary to resume normal operation of the company, thinking about communications, people's responsibilities, timelines, etc.

Share the plan: When you've written the contingency plan and it's been approved; the next step is to make sure everyone in the organization has a copy. A contingency plan, no matter how thorough, is not effective if it hasn't been properly communicated.

Revisit the plan: A contingency plan isn't chiseled in stone. It must be revisited, revised and maintained to reflect changes to the organization. As new employees, technologies and resources enter the picture, the contingency plan must be updated to handle them.

6.2 Contingency plans and risk management in project management

In project management, contingency planning is often part of risk management. Any project manager knows that a plan is only an outline. Sometimes the project will extend beyond those lines. The more a manager can prepare for chance in their plan, the more effective it will be.

But risk management isn't the same as contingency planning. Risk management is about identifying, assessing, avoiding, mitigating, transferring, sharing and accepting risk; while a contingency plan is about developing steps to take when an actual issue occurs. However, they do share the aspect of what to do when the risk happens.

So, a contingency plan is what to do if an unplanned event occurs. It can be as simple as asking, "What if…?" and then outlining the steps to your plan as you answer that question. When managing a project there are many entry points for risk that need to be accounted for with a contingency plan. For example, there's the physical, as in loss due to damage to information, equipment or facilities as a result of an accident or natural disaster.

Technical issues are another risk factor, in that systems can stop working or not work as needed to deliver the project on time and within budget. Of course, human resources are another risk, as teams get sick, leave projects or are terminated.
On a larger scale, there are factors even further beyond the control of a project manager, such as political and social change. For example, if you're working on a government contract that can change with whoever is currently in control of the government. Policy can change, and communities can protest projects and effectively stop them.

6.1.1 Key steps in contingency planning

Project managers are adept at creating contingency plans, as the structure and actions are like many of the processes already familiar to their profession. For instance, a contingency plan breaks down tasks to get more detail and, in so doing, more control.
The following are the key steps in contingency planning:

- Note where there are resources that can be used in an emergency. Also, note where in your contingency plan these resources might be applied.
- Identify dates that if missed will negatively impact your plan, for example getting approval from a group or committee that only meets every now and then.
- Know your contingency plan. Check for any weak links and strengthen them. Identify any slack that you can find in it.
- See if you can find points in your plan where alternative routes can be taken, and think through each one's scenario to add flexibility to your plan.

- Use your experience to help you see patterns in your project's ebb and flow of activity to sharpen your plan.

6.1.2 Preparing contingency plan

Here are the following elements to keep in mind when developing and preparing your contingency plan:

- Have a definitive timeframe and schedule. Organize your tasks within your contingency plan based on how long it takes to finish them.
- Determine the cause. What made you implement the contingency plan? Decide the necessary course of action and the people in charge of the following tasks.
- Simple is better. Refrain from using words that are too complex for someone's vocabulary. Provide a clear yet brief contingency plan.
- Keep your resources it in mind. Think about the effect of contingency plan in your organization.
- Standardize your contingency plan. Ensure that everyone is aware of the plan and are always informed with the necessary updates.
- Implement risks management. Find methodologies to mitigate or remove risks from your contingency plan.
- Document. Put everything in the paper, every little detail and don't forget to make multiple copies of it.

No one can predict the future or how events beyond the control of a company will affect its ability to operate. However, organizations can plan for these kinds of events. Developing contingency plans and identifying possible scenarios and outcomes can greatly help an organization when disaster strikes.

A contingency is anything that happens outside the range of normal operations that can affect the company's ability to operate. Contingency planning is about being prepared for these incidents and having a policy in place to keep you and your employees safe.
Below are 3 steps to preparing a contingency plan.

Step1: Complete a Risk Assessment

It is important to first identify what is considered a critical incident. A good definition may be a death or injury of one or multiple employees, any situation that may attract unusual

attention from the news or media, or any Act of God or event that will severely interfere with the continuous operation of organization functions. Do not leave this definition open to the employee's' interpretation. Ensure your plan clearly identifies all types of incidences that will trigger the plan of action.

Step2: Develop the Plan

When developing your workplace contingency plan, there are many things to keep in mind. Remember, your main goal is to keep your organization open, even if it is housed in temporary quarters for a set time period.

- **In the plan, outline time periods to keep employees on track.** Plan out what must be done in the first hour, day and week of the incident. Sticking to a strict timeline will ensure no important details are left out. Also, make sure all employees know what triggers the implementation of the plan. Delegate jobs and roles to employees at each stage of the implementation to keeps things running smoothly.
- **Make sure the plan is simple.** In a time of chaos and panic, employees won't be in the right state of mind to read through pages and pages of information. Using simple language and outlining each step of the plan will help employees pull together and work through the situation.
- **Look for opportunities to reduce risk in your workplace.** This may be as simple as developing drug-free workforce policies or having safety training about floor exit strategies.

Step3: Maintain the Plan

After preparing your contingency plan, there are several steps that should be followed in order to keep it relevant. As your organization changes, the plan may need to be reviewed and updated. Once you have your contingency plan all planned out, it's time to do the necessary maintenance to keep them relevant for future projectsand organization ventures.

- Communicate about the plan to all employees.
- Test your contingency plan.
- Store the plan in a place where it can be easily accessed.
- Revisit the plan on a regular schedule.

Self-Check -6	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. A backup plan in place for when things go differently than expected is --------.
   A. Contingency plan
   B. Quality plan
   C. Communication plan
   D. Resource plan
2. Contingency plans can only be created for identified risks.
   A. True
   B. False
3. The difference between a contingency plan and a mitigation plan is thata mitigation plan used to:
   A. After the identified risk occurs
   B. decrease the chances of a risk occurring
   C. As the last line of defense
   D. Increase the impact of the risk
4. Contingency planning is part of risk management.
   A. True
   B. False
5. Risk management is the same as contingency planning.
   A. True
   B. False

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…… 5…….

Information Sheet-7	Addressing delays in project completing

7.1 Project delays

Being able to manage project delays within the project lifecycle is crucial for a successful end result. Sometimes the problem is that tasks begin later than planned, or the schedule slips when activities take longer to complete than expected. If you're worried about delays derailing your project, the right strategies can help you stay ahead of the game. Below are some tips to head off delays before they happen, and to quickly deal with any scheduling snafus that do arise.

- Ensure the right people participate in planning.
- Gather accurate and complete information.
- Clearly identify task dependencies and other links.
- Understand where outside support will be needed.
- Implement strong project controls.
- Be prepared to dynamically update the schedule as the project moves forward.

7.2 Managing project delays

No matter how well planned your project schedule may be, there is always the possibility for delay. Delays can occur for any number of reasons, some good, some bad, and some might even be a blessing in disguise. The question is not whether delays will occur, (they will), but how they are handled once they do. The following are the ways that used to manage project "delays" occurred:

- **Acknowledge the missed deadline and resulting delay as soon as possible:** When project problems first appear, you must act quickly to avoid project delays whenever possible. But, once a deadline can't be met, and the delay seems inevitable, you must also act quickly to manage the consequences. Accept the facts, accept the responsibility, avoid blame, and get ready to respond.
- **Gather the right resources:** In order to properly manage a project delay, you must to bring all the necessary resources together in order to analyze the problem and make appropriate decisions. Depending on the project and the nature of the delay, these resources can include your project sponsor, steering committee, relevant technical specialists, vendors, customers and other key decision makers.

- **Consider the consequences:** Delays and missed deadlines can be accepted as long as the value of the project exceeds the consequences of the delay. In all likelihood, delays will impact project costs, resource availability, customer relationships, and related organization needs. On the other hand, delays also present opportunities for project refinement, to re-think decisions that may have led to problems, take advantage of changing organization circumstances, and possibly improve project deliverables.
- **Identify and evaluate the alternatives:** Once consequences are fully analyzed; alternative remedies must be examined and vetted. Depending upon needs and circumstances, multiple solutions are possible, including extending project deadlines, modifying deliverables, retaining additional resources, or changing project scope.
- **Communicate, negotiate and decide:** Once alternative remedies have been identified, acceptance and approval must be obtained from all key project stakeholders. In order to ensure informed consent, a complete and revised project plan must be developed, incorporating the delayed timeline and all related contingencies. In addition, the delay must be explained and justified as needed, specifying causes, repercussions, and benefits.

7.3 Unexpected delays

Project time tables often fail to take account of the time needed for certain administrative procedures that need to be completed before the project can proceed. Two typical examples are obtaining planning permission for construction work and carrying out public procurement procedures for contracting external services. Both procedures are unavoidable and need to be included in project planning.

Some factors cannot be planned for. Bad weather is a typical example in infrastructure projects. The only thing to do is to include this type of problem in project risk assessments and try to develop project activities so all project progress does not depend on the completion of the activities that may be affected.

Another common externality, in particular when it comes to implementation work, is if the project's work depends on the work of others. Here a typical example is when the project's material investment represents part of a large national scheme: If the large project is

delayed it usually obstructs the project plan as well. In this case, leaving some leeway for unforeseen delays or regular updates on the progress of the other project might be necessary.

Self-Check -7	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. One of the following is used to head off project delays before they happen.
   A. Implement strong project controls
   B. Gather accurate and complete information
   C. Ensure the right people participate in planning
   D. All
2. Project delays always occur by bad reasons.
   A. True B. False
3. The way that used to manage project "delays" with bringing the necessary resources is --------
   A. Consider the consequences
   B. Gather the right resources
   C. Identify and evaluate the alternatives
   D. Communicate, negotiate and decide
4. One of the following can be the reason for unexpected project delays.
   A. Lack budget C. Bad weather
   B. Turnover of human resource D. Society acceptance

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-8	Developing and documenting communication strategies

8.1 Project communication

Each project should find the most appropriate activities in order to reach their communication and project objectives. The following points should be considered part of project communication:

- Regular information flow
- Feedback systems
- Regular evaluation
- Make use of the programme resources
- Long-term arrangements
- Prepare for closure

A project communication plan is a simple tool that enables you to communicate effectively on a project with your client, team, and other stakeholders. It sets clear guidelines for how information will be shared, as well as who's responsible for and needs to be looped in on each project communication.

A communication plan plays an important role in every project by:

- Creating written documentation everyone can turn to
- Setting clear expectations for how and when updates will be shared
- Increasing visibility of the project and status
- Providing opportunities for feedback to be shared
- Boosting the productivity of team meetings
- Ensuring the project continues to align with goals

8.1.1 Project team communication methods

There's no single right way to communicate on a project. In fact, your communication plan can and should include a variety of communication methods. Here are a few to consider:

- Email
- Meetings (in-person, phone, or video chat)
- Discussion boards
- Status reports

- Collaboration apps
- To-do lists
- Surveys

8.1.2 Project communication plan write

When you ready to put your communication plan to paper,writing a project management communication plan is as simple as following these 5 steps:

- List your project's communication needs;
- Define the purpose;
- Choose a communication method;
- Set a cadence for communication and
- Identify the owner and stakeholders.

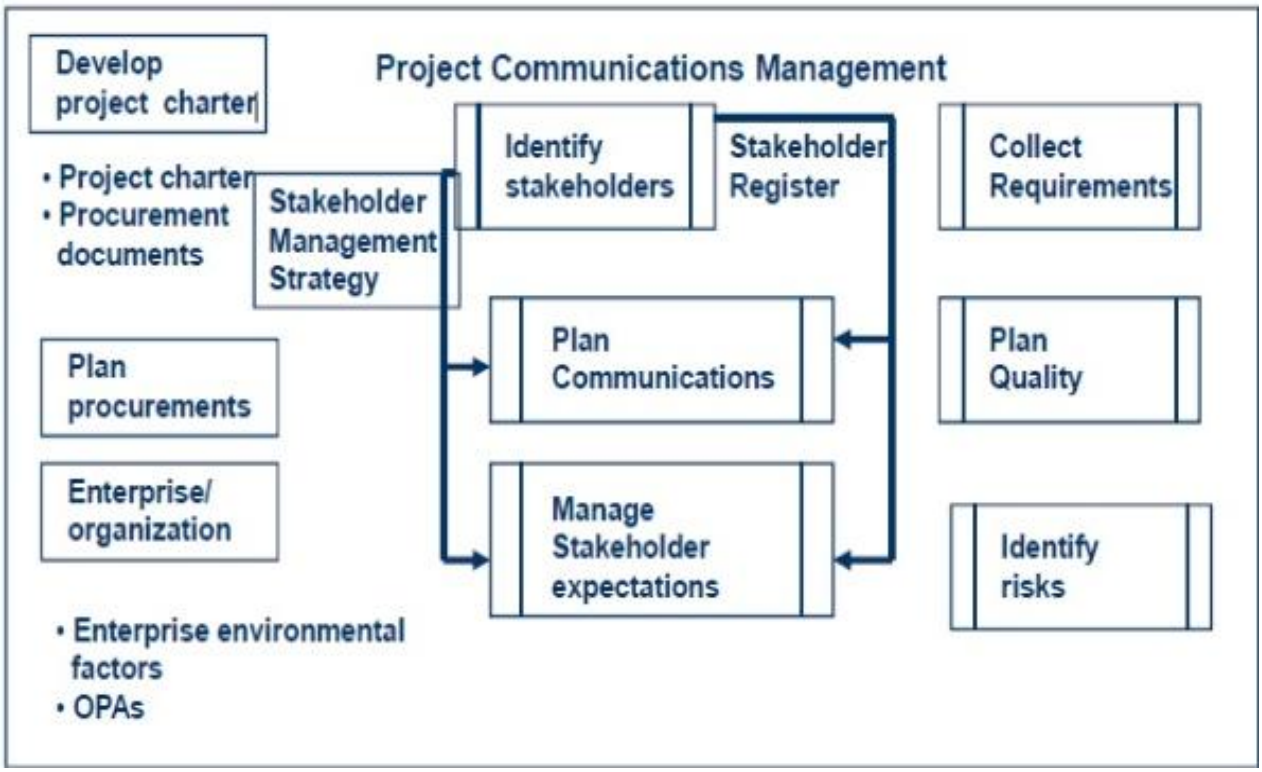


Figure7. Project communication management

8.2 Communication strategy

A communication strategy is the critical piece bridging the situation analysis and the implementation of a social and behavior change communication (SBCC) program. It is a written plan that details how an SBCC program will reach its vision, given the current situation. Effective communication strategies use a systematic process and behavioral

theory to design and implement communication activities that encourage sustainable social and behavior change.

Most communication strategies include the following elements:

- Brief summary of the situation analysis
- Audience segmentation
- Program theory to inform strategy development
- Communication objectives
- Approaches for achieving objectives
- Positioning for the desired change
- Benefits and messages to encourage desired change
- Communication channels to disseminate messages
- Implementation plan
- Monitoring and evaluation plan
- Budgets

A communication strategy guides an entire program or intervention. It sets the tone and direction so that all communication activities, products and materials work in harmony to achieve the desired change. Strategic activities and materials are more likely to promote change.

A communication strategy also enables stakeholders and partners to provide input and agree upon the best way forward so that actions are unified. With an agreed-upon communication strategy, staff and partners have a map they can refer to through the various program development stages.

The program team, including program managers and communication specialists, should work closely with relevant stakeholders and partners to develop the communication strategy. Participation of individuals and groups directly affected by the problem is critical. Their active involvement from the start can help increase program impact and lead to long-term sustainability. The number of people involved in developing a communication strategy will depend on the purpose of the strategy (for example, a marketing strategy for a single product might require fewer people while a comprehensive national strategy for increasing demand would involve more people) and the format used for developing it (for example, a

participatory workshop would involve more people while a core working group consulting with stakeholders would involve fewer people).

The communication strategy should be developed after the analyses (situation, audience and program) have been conducted. The strategy should be final before creating materials or activities and implementing the program.

Developing a communication strategy can take from a few weeks to a few months, depending on the scope of the strategy and whether formative research has already been completed.

8.2.1 Developing a Communication Strategy

For a large initiative/project, a communication strategy should be developed by conducting a number of meetings or brainstorming sessions involving (as a minimum) the project manager, project team members and key departmental communication/media staff. For a small project, the project manager may develop the communication strategy. You will need:

- Knowledge and understanding of the project
- Knowledge and understanding of the key stakeholders
- Knowledge and understanding of appropriate/types of communication methods
- Agreement to proceed with the development of the communication strategy from the project sponsor or senior management

Based on the above information and the discussions held, the aim is to develop each of the following elements of the communication strategy and action plan:

- Target audience
- Key messages
- Communication mechanisms/tools
- Implementation details

Once the communication strategy has been approved, it is important to:

- Add the communication actions into the initiative/project plan with the appropriately assigned resource(s)
- Add the costs for the communication actions into the project budget.

8.2.2 Establishing a Communication Strategy

Establishing a good communication strategy significantly improves the probability of success on a program. We all know that relevant and timely information is paramount to achieving program objectives. Every day, people are inundated with a substantial amount of data and must determine and prioritize what to pay attention to and when. Communication across different time zones for global teams is a challenge and demands focused attention and effort. A communication strategy allows us to better structure and control information flow, removes uncertainty, and eliminates unnecessary churn in the program.

A good strategy outlines the message, the target audience to address, the communication channels, the resources required, and the feedback methods to measure results of the exercise.

Figure 8. Components of a Communication Strategy

8.2.3 Writing communications strategy

The following procedures used to write the project communications strategy:

Statement of purpose: This communications strategy shows how effective communications can:

- help to achieve overall organizational objectives

- engage effectively with stakeholders
- demonstrate the success of work
- ensure people understand what we do
- change behavior and perceptions where necessary."

Analyze current situation: The following tools can be used to help analyze the organization's current situation.

a) PEST Analysis

This involves listing the Political, Economic, Social and Technological (PEST) factors that could affect organization's work. These could be positive or negative factors and should include issues that are likely to have an impact on how the organization operates. You should indicate why each factor will have an effect.

b) SWOT Analysis

A SWOT Analysis involves listing the organization's strengths, weaknesses, opportunities, and threats. Think about what this means in terms of the communications priorities. How can threats be turned into opportunities? How can you play on your strengths through effective communications?

c) Competitor Analysis

Another useful tool when assessing the current situation is to look at what the competitors are doing. This can be a relatively simple exercise where to identify main competitors and rank them against certain criteria. Try to be objective when assessing current strengths and weaknesses.

Organizational objectives and communications objectives: Any communications strategy should closely reflect the overall organizational plan. It is important that the communications objectives should be seen to contribute to the achievement of the overall objectives of the organization. In this way they will be recognized not as an "add-on", but something as fundamental as operational or policy objectives to achieving the organization's overall mission.

Identifying stakeholders: This describes the main audiences – both external and internal. These might include the public, politicians, service users and staff. This might also refer to potential audiences that the organization is keen to connect with.Understanding this may make it easier to prioritize communications work.

Another way of prioritizing your audiences or stakeholders might be to 'map' them. This involves choosing criteria which are important to the organization and then ranking different audiences against those criteria.

Messages: Once the audiences have identified, the next task is to break down the objectives into relevant messages for each of those audiences. Start with the audiences that are the highest priority.

Remember that messages should be relevant and appropriate to the audience. This might want to speak to supporters and donors in much more forthright language than local authorities or other funders. But it is very important that there is a continuity across the messages. It is important that all of stakeholders understand what kind of organization are, so messaging needs always to link back to key organizational objectives and values.

Key communications methods: Once the channels have looked, begin to construct the communications plan, linking audiences, messages and channels.

Work plan: With your audiences and key communications methods identified, the next step is to draw up a table that indicates the key communications activities, budget, and resources allocated to delivering the strategy.

The work plan should also include proposed timescales and identify particular milestones within the strategy. This will allow to measure clear steps towards ultimate goals.

Evaluating success: Communications strategy should conclude with a section on evaluation.

Self-Check -8	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. which one of the following is the role of communication plan in a project?
   A. Increase project delays
   B. Increasing visibility of the project
   C. Increase conflicts of clients
   D. Increase barriers with in a team
2. Which one of the following tools is used to analyse current situation when write the project communications strategy?
   A. SWOT Analysis
   B. PEST Analysis
   C. Competitor Analysis
   D. All
3. The last or concluded section of communication strategy is----.
   A. Identifying stakeholders
   B. Evaluating successes
   C. Work plan
   D. Message
4. One of the following is the project communication method.
   A. Surveys
   B. Meetings
   C. Status reports
   D. All

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Operation Sheet 1	Identifying project management tools and techniques

Activity 1: Procedures for PERT planning:

Step1: Preparing materials and tools

Step2: Identifying the specific activities and milestones.

Step3: Determining the proper sequence of activities.

Step4: Constructing a network diagram.

Step5: Finalizing your work

Activity 1: Steps to draw up a Gantt chart:

Step1: Preparing necessary materials and tools

Step2: Listing all activities in the plan.

Step3: Heading up graph paper with the days or weeks through completion.

Step4: Plotting tasks onto graph paper.

Step5: Scheduling activities.

Step6: Presenting the analysis.

Step7. Restore your work

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 8 hours.

Task 1: Identify project management tools and techniques

Instruction Sheet	Learning Guide 49: Prepare for project implementation

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Establishing and briefing a workforce
- Organizing priorities
- Ordering resources and initiating arrangements
- Dawning up, reviewing and amendingproject plan and schedule

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Establish and brief a workforce
- Organize priorities
- Order resources and initiate arrangements
- Dawn up, review and amend project plan and schedule

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, 2, 3 and 4” in page 82, 88, 92and 98respectively.
4. Accomplish the “Self-check 1, 2, 3 and 4” -” in page 87, 91, 97 and 102respectively
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1in page103.
6. Do the “LAP test” in page 104

Information Sheet-1	Establishing and briefing a workforce

1.1 Workforce management

A project workforce management system defines project tasks, project positions, and assigns personnel to the project positions. The project tasks and positions are correlated to assign a responsible project position or even multiple positions to complete each project task. Because each project position may be assigned to a specific person, the qualifications and availabilities of that person can be taken into account when determining the assignment. By associating project tasks and project positions, a manager can better control the assignment of the workforce and complete the project more efficiently.

1.2 Workforce planning

Workforce planning is a process of analyzing the current workforce, determining future workforce needs, identifying the gap between the workforce you will have available and your future needs, and implementing solutions so that an organization can accomplish its mission, goals, and strategic plan. While it is convenient to describe workforce planning as a series of steps, it is equally important to understand that it is an iterative process, not rigidly a linear one. The main steps in the workforce planning process can be summarized as illustrated in Figure 9.

Figure 9. Workforce planning process

1.2.1 Developing the capability for workforce planning

As we embark on the workforce planning process, it's important to understand first how to organize workforce planning, what skills are required, and what type of data needs to be collected in order to allocate responsibilities accordingly.

Organizing workforce planning: Workforce planning needs strong links across an organization's functions and into strategic planning and finance in particular. Involving some of these other stakeholders in the design of a workforce planning approach will not only be informative but will help with implementation down the line.

Skills needed to undertake workforce planning: Ideally those responsible for the process will have specific technical expertise in workforce planning and labour market analysis.

Workforce planning mindset: Workforce planning should not be viewed merely as a process; it is also a mindset, involving habits of thinking and analysis. In this sense,

understanding workforce planning and practicing even its simplest techniques can help all HR professionals and line managers tackle resourcing issues more effectively.

Developing relevant data and access: HR analytics enable HR teams and their major stakeholders to measure and report key workforce concepts, such as performance, well-being, productivity, innovation and alignment. HR analytics can provide a demonstration of the impact that HR policies and processes have on workforce and organizational performance, and can be used to demonstrate return on investment.

Analyze your current and potential workforce: Workforce segmentation Having analyzed the internal environment of your organization, you can then use workforce segmentation techniques and processes to identify the knowledge, skills, abilities and other factors required for current and future workforce roles. There are two approaches to workforce segmentation. The first identifies different types of job families, functions, roles and competencies within the organization. The second segments roles by value or type of work performed to focus on the most critical roles.

1.2.2 Determine future workforce needs

If workforce planning is about getting 'the right people, with the right skills, in the right roles, at the right time and at the right cost'. The 'right' principle can be applied when translating organizational strategies into what is required from the future workforce. Companies can adapt the principle by examining the five 'rights' of workforce planning.

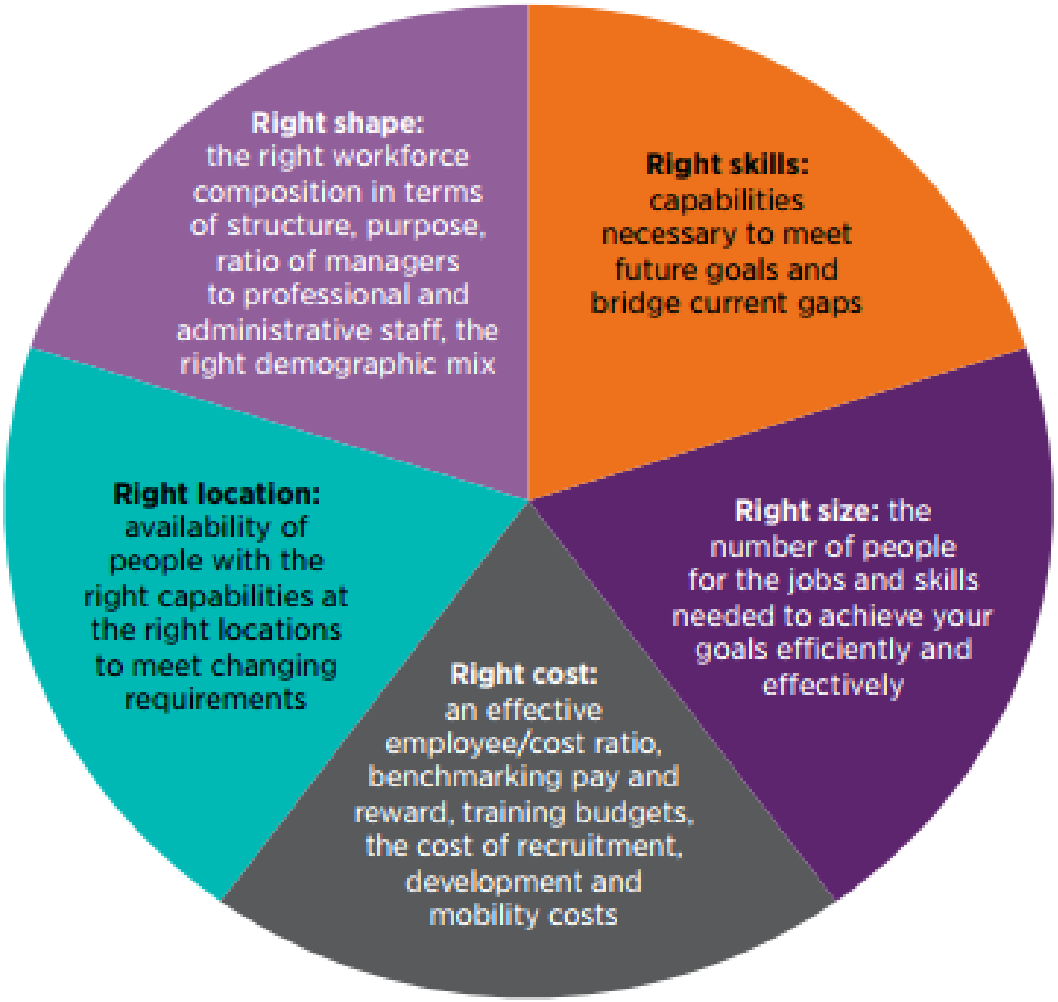


Figure 10. Five 'rights' of workforce planning

1.2.3 Methods for estimating workforce requirements

There are a wide range of methods for estimating workforce requirements and the approaches used will very much depend on the size and nature of your organization. These are:

- **Asking:** simply asking managers and department heads what they think will be needed and when is always a sensible starting point.
- **Budget-based:** using cost per employee to work out how many people you can afford to employ if the budget for an area of work has already been set.
- **Ratios:** proportion of employees to activity levels or of one group of employees to another. Works well in stable circumstances, where employee demand moves in line with activity levels.

- **Benchmarking:** looks at ratios or costs in other organisations or between parts of the same organisation. It can stimulate questions but does not necessarily represent good practice or take account of different work contexts.
- **Extrapolating trends:** for example, forecasting based on past increases in productivity, assuming these trends continue into the future. A good method to use for longer product/service cycles and where technology is not changing too rapidly.
- **Forecasting:** based on more sophisticated models, taking into account a range of factors including variations in demand across the year. This is helpful for broad-brush planning, but is only as good as the assumptions put into the model.
- **Workflow analysis:** based on a detailed analysis of the activities taken for each task. This activity is useful if your organisation is undergoing transformational change where the roles, responsibilities and capability requirements of individuals/job families are likely to change.
- **Defining job families:** employees working in positions belonging to the same job family require little training to perform one another's jobs. Therefore, job functions within the same job family require similar competencies, such as knowledge, skills and capabilities (see workforce segmentation).
- **Zero-base demand estimation:** estimates the workforce you might ideally need rather than based on what you have now, informed by a mix of the methods above. Zero-base approaches can help to unlock new thinking about work design, productivity and flexibility.
- **Scenario planning:** tackles uncertainty directly by looking further ahead at alternative views of the future. It is useful in assessing the risks of different organisation futures, but cannot predict what will happen.

Self-Check -1	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. A process of analyzing the current workforce, determining future workforce needs is ---
   A. Workforce management
   B. Workforce planning
   C. Workforce requirement
   D. Workforce assign
2. One of the following is a method for estimating workforce requirements.
   A. Workflow analysis
   B. Forecasting
   C. Benchmarking
   D. All
3. The right principle of workforce requirement which is the capabilities necessary to meet future goals and bridge current gaps is ----.
   A. Right cost
   B. Right skills
   C. Right roles
   D. Right time
4. Which one of the following **cannot** be workforce planning process?
   A. Identify workforce gaps against future needs
   B. Analyses the current and potential workforce
   C. Determine future workforce needs
   D. Analyses project site

Note: **Satisfactory rating - 4 points Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-2	Organizing priorities and met time frame

2.1 Project priorities

Knowing how to prioritize work affects the success of your project, the engagement of your team, and your role as a leader. All projects especially large, complex projects need clear priorities. Easier said than done. You can count on technical projects, no matter how well-planned, to involve change orders, re-prioritization and the regular appearance of surprises. It's just the natural order of things.Prioritizing includes deciding what order tasks should be completed based on their importance. This strategy may help you organize your time more efficiently. This helps you learn how to complete important tasks first, meet deadlines and have more time to finish larger tasks. Prioritization skills can help you accomplish more work in less time.

One of the biggest challenges for project managers and leaders is accurately prioritizing the work that matters on a daily basis. Even if you have the best project management software on the planet, you're the one who enters information into the tool. And, you don't want to fall into the role of crying "top priority" for every other project that comes down the pike.

Just as you have to be diligent and have the right kind of project insight to ensure that nobody's working on yesterday's priorities. It takes a lot of practice to get this right.

To help you manage your team's workload and hit deadlines, here are six steps to prioritizing projects that have a lot of moving parts.

Collect a list of all your tasks: Pull together everything you could possibly consider getting done in a day. Don't worry about the order or the number of items upfront.

Identify urgent vs. important: The next step is to see if you have any tasks that need immediate attention. We're talking about work that, if not completed by the end of the day or in the next several hours, will have serious negative consequences (missed client deadline; missed publication or release deadlines, etc.). Check to see if there are any high-priority dependencies that rely on you finishing up a piece of work now.

Tasks fall into one of four categories:

- Urgent and important–these are tasks you should do immediately.

- Not urgent, but important– these are tasks you should put on your schedule and commit to doing.
- Not important, but urgent– these are tasks that need to be accomplished soon but could be done as well or better by someone else. You delegate them.
- Not urgent and not important– these are tasks you could probably eliminate altogether. Don't waste any of the team's time on these tasks.

Assess value: Next, look at your important work and identify what carries the highest value to your organization and organization. As a general practice, you want to recognize exactly which types of tasks have top priority over the others.

Order tasks by estimated effort: If you have tasks that seem to tie for priority standing, check their estimates, and start on whichever one you think will take the most effort to complete. Productivity experts suggest the tactic of starting the lengthier task first. But, if you feel like you can't focus on your meatier projects before you finish up the shorter task, then go with your gut and do that. It can be motivating to check a small task off the list before diving into deeper waters.

Be flexible and adaptable: Uncertainty and change are given. Know that your priorities will change, and often when you least expect them to. But—and here's the trick—you also want to stay focused on the tasks you're committed to completing.

Know when to cut: You probably can't get to everything on your list. After you prioritize your tasks and look at your estimates, cut the remaining tasks from your list, and focus on the priorities that you know you must and can complete for the day. Then take a deep breath, dive in and be ready for anything.

2.2 Prioritize tasks in the workplace

When you have multiple work tasks to complete each day, you may need to develop an effective system to manage them. Prioritizing is a way to determine what you should accomplish first based on importance. Understanding the best ways to prioritize your tasks can save you time in the workplace.Consider the following steps when prioritizing tasks in the workplace:

Decide which tasks are the most important: First, decide which tasks on your to-do list are the most critical. You could determine this based on deadlines you have for the week, client expectations or coworker requests. For example, you may focus on a marketing report due at the end of the day before moving on to other tasks.

Put your tasks in a calendar: Once you decide which tasks are most important, schedule them into your calendar. Prioritizing your time can be easier when you see your list of tasks each day. You may find that you focus better on those daily tasks when you have a visual reminder of each one you need to complete. Completing them can also provide a feeling of accomplishment.

Set boundaries: Once you focus on your tasks for that day, you can further prioritize by setting specific times to focus on your work. You may have coworkers that call, email or walk over to your desk regularly to talk to you about nonurgent issues. It is appropriate to let them know you are focused on a project and will speak with them at a later time. You can ask them not to disturb you during the morning, but that you would be happy to talk in the afternoon.

Self-Check -2	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. Tasks you should do immediately in a project is-------
   A. Urgent and important
   B. Not urgent, but important
   C. Not important, but urgent
   D. Not urgent and not important
2. Which one of the following is the first step when prioritizing tasks in the workplace?
   A. Put your tasks in a calendar
   B. Set boundaries
   C. Decide which tasks are the most important
   D. Completing priorities
3. The tasks you should put on your schedule and commit to doing is called -------
   A. Urgent and important
   B. Not urgent, but important
   C. Not important, but urgent
   D. Not urgent and not important
4. One of the following is the function of project prioritizing.
   A. Create work load on the employee
   B. No time for urgent tasks
   C. Learn how to complete important tasks first
   D. Organize your time less efficiently

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4……

Information Sheet-3	Ordering resources and initiating arrangements

3.1 Introduction to project resources

‘‘A project manager that fails to allocate project resources is like a carpenter without a hammer.’’That’s why estimating task resources is an integral step in project planning. It also happens to be one of the most fundamental aspects of project management, one of the steps that the project manager utilizes on a day to day basis.Each task on the task list must be assigned the resources necessary to perform the task.For small projects there are three major types of resources:

- Labor
- Tools & equipment
- Material & supplies

Labor: Labor is not all created equal. Labor is usually estimated in hours, but can range all the way up to years for megaprojects.

Tools & Equipment: This category generally includes all of the items that do not go into the finished product. Things like drill bits that are used up during a project, or the addition of new tools that the company doesn’t already own. It also includes equipment such as forklifts, vehicles and software.

Often the tools and equipment will be used over multiple projects. In this case it is important to divide the cost over a conservative number of projects to get a realistic idea of how much the project is “paying” for it.

Most tools and equipment have an ongoing maintenance cost which must be factored into its project cost.

Materials & Supplies: This includes the items that become part of the finished product, like timber or gravel. Often these items are quoted by the unit, such as per foot of timber. Normally you have to order more quantity than will be used in the finished product, because:

- The material is not produced in the exact lengths required.
- The project will generate some waste.

A contingency factor can also be used on the overall quantity to account for unexpected issues during the course of the project.

For larger projects, or where greater project management effort is justified, the following resources can also be used.

- Organizational/Administration;
- Subcontractors;
- Facilities;
- Financing costs;
- Contingencies and
- Overtime pays.

3.2 Resource calendar

A resource calendar is a calendar that specifies working and nonworking time for an individual resource. A resource calendar differs from a base calendar, which specifies working and nonworking time for more than one resource. Resources can either inherit the nonworking time from the base calendar, or override this time with nonworking time settings on the resource calendar. You can use resource calendars to define unique exceptions for individual resources, such as vacations, different working days, or different shifts. Use resource calendars to track the schedules of individual resources. Resource calendars make sure that work resources (people and equipment) are scheduled only when they're available for work. For example, if a resource has a flexible work arrangement and works four 10-hour days instead of five 8-hour days, you can set that resource's calendar to reflect that schedule without changing the overall schedule for all other resources in the organization.

By default, the working time settings in the resource calendar match the project calendar. However, you can customize the resource calendar to show individual schedule information, such as vacations, leaves of absence, or equipment maintenance time. You can change working time or nonworking time for specific resources or a set of resources, ensuring that resources are scheduled only when they are available for work.

Project calendars and task calendars are used to schedule tasks, and if resources are assigned to tasks, resource calendars are used as well. You can modify these calendars to define the working days and hours for the whole project, for individual resources, and for tasks. If you have changed working or nonworking time on a resource calendar and the resource is assigned to a task, the task is scheduled during the working time on the resource calendar. This may also affect the finish date of the task.

3.3 Resource allocation

Resource allocation is the process of assigning and scheduling resources to project tasks. Resources are the life blood of project management. Resources are used to carry out the project, and are returned to their owners if not consumed by the project. There are six steps to performing a proper resource allocation:

- Divide the Project into Tasks
- Assign the Resources
- Determine resource attributes
- Resource Leveling
- Re-allocate as necessary
- Track resource utilization

Divide the Project into Tasks: In project management, the project is divided into tasks and managed on a task, rather than a project, level. Resource allocation is an integral component of this process because each task is assigned the necessary resources, and the resources are managed by task. Once the project is successfully divided into tasks, the resources can be assigned.

Assign the resources: Each task requires resources in order to be successfully performed. As a minimum, most tasks require a human resource to carry out some actions. Usually, the person starts with some input materials which are used to produce an output.

ID	Task	Start	End	Budget	Resources
100	Dig holes	November 1	November 10	10000	Bob, shovel
200	Build fence	November 8	November 30	30000	Bob, Bill, shovel, fence posts, fence materials

Determine resource attributes: Each resource comes with attributes (project manager lingo) which must be sufficient to carry out the project work. These attributes include:

- **Grade**: refers to the technical specification level of the resource. In this case, the length of the fenceposts, the depth of the holes, and the strength of the fence material are all characteristics of grade. In short, the resources must be adequate for the task.
- **Skill**: is the same as grade but specific to the human resources. Bill and Bob, in this case, must know how to pound the fence posts and be strong enough to drive the posts.

- **Quality**: refers to the degree to which the resource meets specifications, that is, if poor quality fence material arrives at the site it is not acceptable and must be rejected, adding unexpected costs and schedule implications. This is different from the grade of the fence material, which can be low. The fence may not need high grade fence material. Low grade is acceptable (in the right circumstances), whereas low quality is never acceptable.
- **Resource-specific attributes: Size, shape, length, speed, color, strength, etc.**: Each resource has many specific attributes that define its function. for example, if the paint is supposed to be brown, but a green paint arrives on site, it is probably still high quality as well as grade, yet not sufficient for the project. The required attributes must be determined individually for each resource.
- **Availability**: In project management lingo this is called a resource calendar. The resource calendar can range from a simple listing of employee vacation time to sophisticated material tracking software. But its purpose is to ensure the project resource is available when needed.

At this stage we drill down into the table for each resource. Hence, a new table of information is formed for each resource:

Resource	Attributes	Availability
Bob	• Garden style	Needs 1-week notice
Shovel	• Large	Immediately

Resource leveling: Resource leveling refers to the process of inspecting the resources to ensure their use is as "smooth" and level as possible. It is a common scenario that it is more advantageous to extend the project schedule to avoid large spikes and dips in resource usage. In addition, the resources used to carry out those tasks must be procured (purchased), delivered, and prepared. During the project, they must be maintained and serviced. All of these tasks must be accounted for within the project schedule and budget.

Re-allocate as necessary: Throughout the project, resource re-allocation tends to be a constant and inescapable function of the project manager. Resources are scarce. They sometimes do not show up on time, are needed by other projects, or lose their usefulness over time. Many things can happen that require a shift of resources from one task to another, or a change in the project schedule or budget.

Track utilization rates: It is a surprisingly common occurrence that a resource arrives at a project and sits idle for a long period of time. It is equally common that project managers

have no idea that the resource is being paid for but not being used. A simple solution is to track resource utilization rates. The utilization rate is simply the percentage of billable time:

Utilization Rate = Number of Billable Hours / Number of Total Hours

For example, if Bill worked 4 hours out of a possible 40 hours for the week, his utilization rate is 4 / 40 = 10%. Clearly this would suggest corrective action is warranted on the part of the project manager.

Self-Check -3	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each)

1. ------- is the process of assigning and scheduling resources to project tasks.
   A. Resource Leveling
   B. Resource allocation
   C. Resource calendar
   D. Resource shortage
2. Resource attributes which refers to the degree to which the resource meets specifications is ---------
   A. Availability
   B. Skill
   C. Quality
   D. Grade
3. A calendar that specifies working and nonworking time for an individual resource is known as----------.
   A. Base calendar
   B. Resource calendar
   C. Work plan
   D. Project schedule
4. -------- is the process of inspecting the resources to ensure their use is as “smooth” and level as possible.
   A. Resource Leveling
   B. Resource allocation
   C. Resource calendar
   D. Resource shortage

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-4	Drawing up, reviewing and amending project plan and schedule

4.1 Project plan and schedule

Although often used interchangeably, the terms "project planning" and "project scheduling" are two entirely different pieces of the structure of the task. Each plays a role in getting a project to completion on time. The project plan serves as the master blueprint. The project schedule nails down the details of specific tasks within the project plan.

At the onset of a project, you establish the plan first. The project plan focuses on the big picture, the ideas and ideals of the project goal overall. Think of it as a cloud of options all leading to the same goal. The project schedule can only be put into place after the plan has been accepted and understood by all parties working on it. The schedule deals with specifics, dates and duration, and assigns each member of the team concrete tasks to be completed at certain points.

The project plan is organized in outline form with a clearly stated goal at the top of the plan. After that, define the scope of the project; determine how many people you'll need to pull it off and estimate the costs, balancing them with end profits. Establish a budget. After you determine these main factors, start scheduling. Determine each individual's roles and responsibilities. Divide the plan up into small tasks, each with its own due date for completion and assign someone to be in charge of each task. A schedule is in large part an estimation. As difficulties arise, they may necessitate changes in the schedule. The schedule is fluid, whereas the project plan is stable.

Depending on the complexity and length of your project, your project management schedule can range from a simple chronological task list to a complex web of interrelated tasks and dependencies. Still, there are concrete steps you can take to develop a solid project schedule and ensure all aspects of your project are properly planned and accounted for.

Once you get the steps down, then you'll want to have the right tools to make sure you are able to implement and maintain this process in your project scheduling.With a project

scheduling software you can schedule all your projects online, create task lists for your team and manage their schedules as well as using a calendar view to stay on top of deadlines.

4.2 Drawing up Project management scheduling

First, you're going to work out what it is that you have to do. It might sound obvious, but this is the stage where you are likely to forget a couple of activities. Once the project schedule is produced, you won't remember to add them in until you realize that no one has done them.

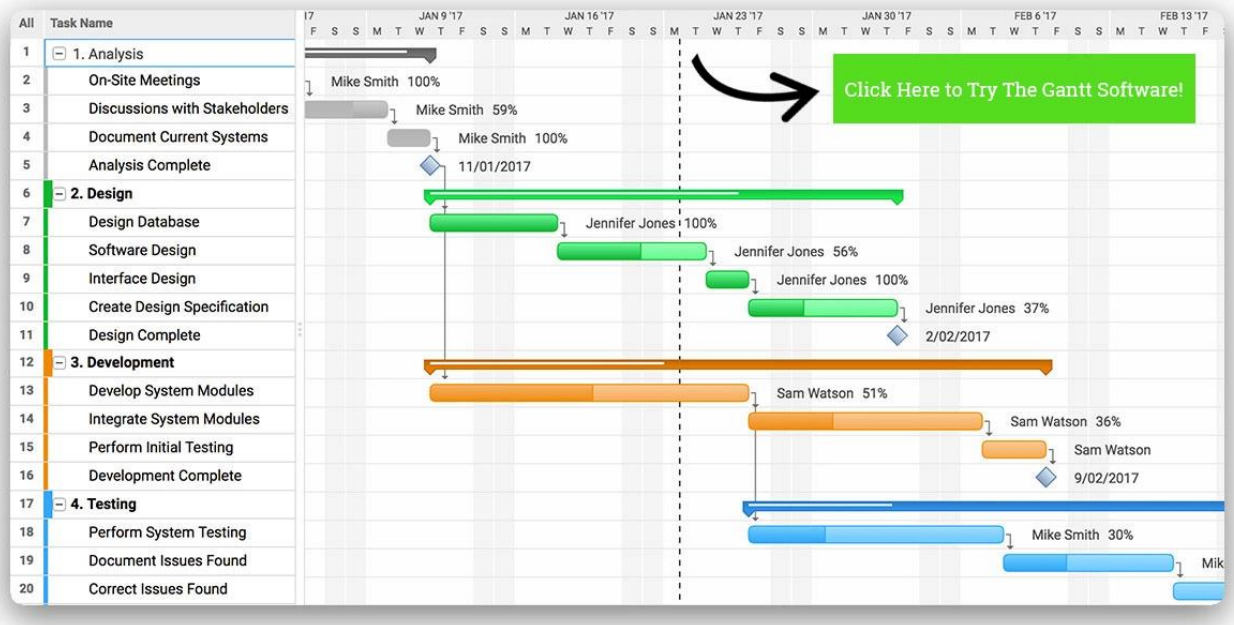
The best way around this is to involve the team. You could start off the list with everything that you know needs to be included (like all the broader project management activities such as risk management meetings and key reporting dates). Then get the team together to add to it.

Use their specialist knowledge to ensure that every element of the project is comprehensively planned. You may find it easier to do this with a few short meetings over a couple of days to allow people to reflect on what needs to be done. It's amazing what you'll remember on the commute home, so plan in some time to update the project schedule before it is finalized.

Be sure to keep project scope in mind as you're working on your tasks. Tasks are one of the main culprits for taking projects off-track. As you do this, also estimate the resources these tasks are going to demand, to further assist in your scheduling.

Establishing an order is one of the key things when working on a project management schedule. After all, you wouldn't drive off without putting your seatbelt on first, and project scheduling is the same. You can't schedule everything to start at the same time.

A Gantt chart is a graphical representation of a project schedule and it shows you the links between tasks. These are called dependencies and are normally marked with a black line.



A project milestone is a particular point in time that marks the completion of something or another significant moment on the plan. For example, the end of a phase, the start of a product build, or a date that the factory is available for manufacturing to begin.

Put milestones on your project schedule in appropriate places, and link them to the relevant tasks. You'll want milestones to appear regularly on the schedule as they will help you identify if you are still on target to complete all the work on time. Milestones are a great way to make project scheduling less of a hassle.

Once you have a list of linked tasks with milestones, you can add in any fixed dates. For example, many project management applications will automatically schedule your project to start today, but you might be planning some work that won't start for a few months. So, go through the dates and make sure that they are all as you would expect. You can alter them manually or add in any additional dates as required.This is also the point to review how long each task will take. Software will generally set the task duration to whatever the default is, which could be as little as one day. Make sure that each task lasts for the right amount of time by manually changing the duration.

Your plan is nearly complete! But first you have to add in the details of the people doing the work. This is important because if you don't work out who is doing what when you might inadvertently book an individual to work on too many things at the same time.Go

through the task list and allocate your project team members to the appropriate tasks. Ideally you would have gotten informed estimates from your team *before* putting them into the planning tool, as usually team members get alerts when new tasks are assigned to them.Check that you haven't got anyone overstretched or anyone sitting around doing nothing. If you have, look at changing the order or dates of tasks to better fit the times that your resources are available.

This analysis can take a while, so it helps to have a software that will do it for you. ProjectManager.com has workload calendars that let you see how much work is assigned to a team member at any given moment.

It's impossible to create the perfect project schedule on the first attempt. Your schedule will also change as the project evolves, especially if you make amendments to the project scope. Have a formal review at least once a month, although you'll probably be looking at and tweaking your plans much more frequently than that.

Self-Check -4	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each).

1. Which one of the following is established first in project management?
   A. Scheduling
   B. Planning
   C. Evaluation
   D. Reviewing
2. Project planning and project scheduling are the same tasks in project management.
   A. True
   B. False
3. Which activity should be done first, when you prepare effective project management? scheduling?
   A. Allocate people to tasks
   B. Establish the order of tasks
   C. Write down your tasks
   D. Calculate the timescale
4. The last task in prepare effective project management is --------.
   A. Allocate people to tasks
   B. Establish the order of tasks
   C. Review the schedule
   D. Calculate the timescale

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Operation Sheet 1	Drawing up, reviewing and amending project plan and schedule

Procedures for preparing project management scheduling**:**

Step 1: Preparing necessary tools and materials

Step 2: Writing down your tasks

Step 3: Establishing the order of tasks

Step 4: Creating some milestones

Step 5: Calculating the timescale

Step 6: Allocating people to tasks

Step 7: Reviewing regularly

Step 8: Finalizing your work

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 8 hours.

Task 1. Prepareproject management scheduling

Instruction Sheet	Learning Guide 50: Monitor the project

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Reviewing the project
- Identifying deviations and taking actions
- Reporting deviations from original program requirements

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Review the project
- Identify deviations and taking actions
- Report deviations from original program requirements

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, 2, 3 and 4” in page 106, 110, 112and 116respectively.
4. Accomplish the “Self-check 1, 2, 3 and 4” -” in page 109, 111, 115and 117respectively

Information Sheet-1	Monitoring and evaluation of the project

1.1 Monitoring and evaluation of the project

Monitoring and evaluation are crucial to effective management of irrigation project. There are many examples where information from monitoring or evaluation led to a significant change in a project that, one can see in retrospect, was essential to success.

Monitoring requires ongoing data collection during project implementation. Purposes of monitoring include:

- measuring progress of activities during implementation.
- highlighting which activities are being carried out well and which less well.
- providing information during implementation about specific problems and aspects that need modification.
- enabling managers to decide about allocation of resources and to identify training and supervision needs.

For monitoring of the project, the following points should be considered:

- Identify activities/indicators/outcome measures to be monitored
- Decide how the findings will be acted on
- Identify sources for monitoring data and data collection methods
- Schedule monitoring
- Design and pretest simple forms and questionnaires for recording information

For evaluation of the project, the following points should be considered:

- Review project objectives and relevant project activities in terms of expected effects
- Identify indicators/outcome measures to evaluate
- Determine sources of data for evaluation and data collection methods
- Plan for data gathering including schedule and staff

Evaluation requires data collection before and after a given period of project implementation. Purposes of evaluation include:

- assessing whether the objectives have been achieved.
- looking at overall strengths and weaknesses.
- guiding design of future phases or follow-up projects.

To plan for monitoring and evaluation, specify the information that will be needed, how it will be used for decision making and how progress and impact will be measured. Plans for

monitoring and evaluation should be developed at the same time and integrated with plans for the whole project. At the beginning of the planning process, decide how monitoring and evaluation data will be acted on. Ensure that each piece of data collected has a purpose so that monitoring and evaluation is a meaningful practice that advances the project's goals and objectives.

Monitoring is a periodically recurring task already beginning in the planning stage of a project or programme. Monitoring allows results, processes and experiences to be documented and used as a basis to steer decision-making and learning processes. Monitoring is checking progress against plans. The data acquired through monitoring is used for evaluation.

Monitoring is the systematic and routine collection of information from projects and programmes for four main purposes:

- To learn from experiences to improve practices and activities in the future;
- To have internal and external accountability of the resources used and the results obtained;
- To take informed decisions on the future of the initiative;
- To promote empowerment of beneficiaries of the initiative.

Evaluation is assessing, as systematically and objectively as possible, a completed project or programme (or a phase of an ongoing project or programme that has been completed). Evaluations appraise data and information that inform strategic decisions, thus improving the project or programme in the future.

Evaluations should help to draw conclusions about five main aspects of the intervention:

- relevance
- effectiveness
- efficiency
- impact
- sustainability

Monitoring and evaluation provide:

- information on what an intervention is doing, how well it is performing and whether it is achieving its aims and objectives;

- guidance on future intervention activities;
- an important part of accountability to funding agencies and stakeholders.
- Plans for monitoring and evaluation should be made at the beginning of an intervention development process.

Self-Check -1	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each).

1. One of the following is the purposes of project monitoring.
   A. guiding design of future phases or follow-up projects
   B. looking at overall strengths and weaknesses
   C. measuring progress of activities during implementation
   D. assessing whether the objectives have been achieved
2. Which one of the following is the purpose of project evaluation?
   A. Looking at overall strengths and weaknesses
   B. Measuring progress of activities during implementation
   C. Providing information during implementation
   D. Enabling managers to decide about allocation of resources
3. Which one of the following is true about monitoring and evaluation?
   A. The data acquired through evaluation is used for monitoring
   B. Monitoring is checking progress against plans
   C. Monitoring requires data collection after project implementation
   D. Monitoring measures overall strengths and weaknesses
4. The data acquired through monitoring is used for evaluation.
   A. True B. False

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-2	Regular reviewing the project

2.1 Regular reviewing the project

Review is when you look at the results of an evaluation and decide whether it needs to change. Information from monitoring may also prompt a review of a small area of your work, but a substantial review can only take place once a proper evaluation of your effectiveness has taken place. Review may take place annually or at the end of a longer-term project.

Project reviews are conducted at the end of the initiation, planning and execution phases within a project. This form helps you to complete a project review for the execution project phase in the life cycle.A project management review is an exercise undertaken at the end of each project phase to identify the current status of the project. The project review identifies the deliverables which have been produced to date and determines whether or not the project has met the objectives set.

2.2 Review the project status

Reviewing the current status of the project allows you to track the progress of the project against the project plan, which simply means comparing where you are now versus where you planned to be, and then determining what you need to do if the project is veering off track.

The purpose of tracking progress is to ensure that you complete the project as promised: that the final deliverable meets the customer's acceptance criteria, that the project is on time and on budget. If you monitor the project regularly, you won't get very far off track without knowing it, and that gives you an early warning signal that allows you to take action to get back on track.There are five areas you'll want to track:

- Risk
- Schedule
- Scope quality
- Staff effort
- Spending

Self-Check -2	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2 pts each).

1. Project reviews are conducted at:
   A. Execution phases
   C. Initiation phase
   B. Planning phase
   D. All
2. If you monitor the project regularly, you will get very far off track without knowing it.
   A. True
   B. False
3. Review may take place annually or at the end of a longer-term project.
   B. True
   B. False
4. The purpose of tracking progress is to ensure that you complete the project as promised.
   C. True
   D. False

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

.

Information Sheet-3	Identifying deviations and taking recovery action

3.1 Project deviation

Project deviation means any deviation from project proposal (what the contractor has proposed to the client) and project plan (a way in which the project has been expected to be accomplished). In other words, it means any discrepancy between the project results as they have been agreed by the customers and executers in the contract, which may be caused by non-conformity between the plan and actual work.

Project deviation may be a formal cause for project non-acceptance by the client or contract termination because of violation of its terms by executers. Any way project deviation, if not agreed with customers and not aligned with master documents, is a serious problem which may collapse a contractor's reputation and entail losses.
In practice a project deviation is an issue that may happen quite usually, especially if a project has a significant innovative element, so any changes and variances should be captured and regulated by change management system incorporated into a project's governing bodies.

Project deviations are a normal situation when you deal with a highly changeable environment, so in order to minimize any possible losses or serious upsets it is necessary to identify project deviation and its prerequisites early as possible.

3.2 Deviation Management

Deviation management is the opportunities for improvement. The basis for successful management of deviations is built on simple reporting, an effective flow and clear follow up.

Common problems in work with deviations include faulty reporting, deviations that due to unclear responsibility and time-consuming data collection and compilation. To assess a company's quality non-conformity costs and to remedy these in a structured way is not something many succeed in doing.
Our solution for deviation management includes the following advantages:

- Simple reporting that encourages reporting.
- Quality assured and effective work flows adapted to your needs.
- Clear responsibility in the process.
- Automated feedback.
- Follow up and production of statistics made simple.
- Experience-bank function.

The basis for good management of deviations is a working method which is adapted to the organization's needs in terms of issues such as resources, activities, flows, information and key performance indicators.

To get started with deviation management it is important to clearly demonstrate the benefit for all interested parties, to facilitate reporting and at the same time to ensure that the IT support gives feedback to the employees. A good idea is to draw up clear goals and measurement figures, for example, in terms of lead times and costs, which are reviewed regularly.

3.3 Project recovering

A number of project recovery methodologies exist. The majority of the project recovery methodologies have a four-step process, namely

- audit/identification of current status,
- analysis of the problems (fault finding),
- negotiate the recommended actions, and
- implement the recovery plan.

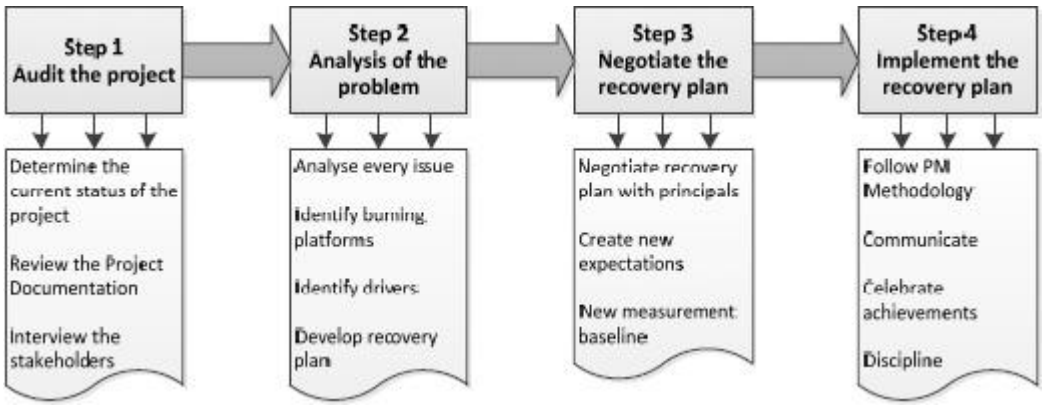


Figure 11: Project recovery methodology.

Step 1: Audit the project. The primary aim of this step is to review all the project documentation to determine the current status. All the relevant stakeholders should be interviewed to obtain their understanding in terms of expectations, issues, and risks. The majority of the problems should be identified through the audit process.

Step 2: Analysis of the problems. Analyze every identified problem on the project. Identify the burning platforms. Also ensure that the basics are put in place, such as redefining or confirming the scope of the project. Identify the real schedule and cost drivers. Suspend or eliminate deliverables in the scope that are not immediate requirements for achieving the project objectives and re-schedule it as far in the future as possible. Draw up a new plan aimed specifically at the recovery effort. Be realistic in terms of what is achievable with the current funds and resources.

Step 3: Negotiate the recommended actions with the major principals. The principals' support is critical to implementing the recovery plan. Present the recovery plan to them, substantiate each and every action in the plan, and negotiate where possible. This negotiation will also create new expectations and ownership from the stakeholders and ensure that the new baselines will be the ones that measurement is made against.

Step 4: Implement the recovery plan. Follow a sound project management methodology. Control the project by means of the performance measurement baseline and manage issues actively. Make sure communication channels are open to the stakeholders, keeping them informed is a critical success factor for continued support; otherwise, they might get easily disillusioned. Escalate major issues to ensure that the steering committee also takes ownership in the project. Enforce discipline — this is no time to relax! Celebrate each and every achievement, because this will motivate the team.

Self-Check -3	Written Test

Directions: Much the steps of project recovery in column ‘‘A’’ with their aims in column ‘‘B’’ and write the answer on the space provided. (3 pts each)

A	B
---------1. Audit the project	A. Identify burning platforms
---------2. Analysis of the problems	B. Create new expectations
---------3. Negotiate the recovery plan	C. Determine the current status of the project
---------4. Implement the recovery plan	D. Celebrate achievements
	E. Clear responsibility in the process
	F. Effective work flows
	G. Encourages reporting

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-4	Reporting deviations from original program requirements

4.1 Reporting deviations from original program requirements

Writing an investigation report is sometimes viewed as a “penalty” when something doesn’t go as planned or when an unwantedorunforeseenevent occurs. From a quality perspective, these reports have the potential to contribute to product and process understanding and help prevent recurrences from occurring in the future.

Writing a deviation report that can be read and understood months, or years, after it’s written requires logic and reason, a proper organizational strategy, and sections that accurately convey content. In our project, your team will learn strategies to plan, organize, and structure the report so that it’s reader-friendly, usable, and functional.

Self-Check -3	Written Test

Directions: Write short and precise answers for the following questions.

1. List at least two purposes of deviation reports. (4 pts)
2. Write the criteria that you follow when you write deviation reports. (4pts each)

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1.....

.....

.....

2.....

.....

.....

Instruction Sheet	Learning Guide 51: complete documentation

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Providing quality assurance documents and reports
- Maintaining plant and maintenance records
- Reviewing project completion and establishing and documenting opportunities

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Provide quality assurance documents and reports
- Maintain plant and maintenance records
- Review project completion and establish and document opportunities

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, 2, 3 and 4” in page 119, 127, 131 and 138respectively.
4. Accomplish the “Self-check 1, 2, 3 and 4” -” in page 126, 130, 137 and 141respectively

Information Sheet-1	Providing quality assurance documents

1.1 Quality Assurance

Quality simply means fitness to use and conformance to requirements. Quality Assurance (QA) focuses on the processes utilized in the project efficiently to generate quality project deliverables. It includes the following meeting standards, progressive enhancing project work and eliminating project defects.

You can think of quality assurance as the activities and management processes that are done to ensure that the products and services the project delivers are at the required quality level. It is process driven and focused on the development of the product or delivery of the service.

Figure 12. Quality assurance process

Quality assurance assures the quality of the product meaning that this process ensures that the product generated from the process is defect free and conforms to all stated customer requirements. It is said to be a process-based approach whose primary objective is to prevent defects in deliverables at the planning stage to avoid rework, which increases process costs.

Quality assurance can also be viewed upon as a proactive process and it places importance on planning, documentation, and guidelines finalization that will be needed to assure the quality. This process begins at the very start of the project to compare the product's requirements and expectations. Once all requirements and expectations are recognized, a plan is developed to meet these requirements and expectations.

1.1.1 Tools for quality assurance process

There are fundamentally three tools utilized in quality management process analysis, quality audit, and quality management and control tools. In process analysis, one analyses the process to spot any enhancements, find the root cause of any problem that comes up, and recognize any non-value-added activities.

In, quality audit, a panel of external experts come and review the process and procedures. If they discover any discrepancies, they will recommend corrective action or an enhancement in the process. It is an excellent tool to ensure the best practice and approved procedures are being followed.

Quality management and control tools include different diagrammatic techniques which aid in discovering ideas, help make decisions, and prioritize issues.

Quality Assurance and Quality Control are closely interlinked and their objective is also the same, which is to deliver a defect-free product. Both processes are key components of a quality management plan and augment each other. Failing to implement either of them will lead to failure of quality management in the project.

The following are few benefits of these Quality Assurance and Quality Control processes:

- High quality output
- Eliminate waste or in the very least minimize waste
- Increase the efficiency of operations by a large factor
- Offer customer satisfaction, which positively affects your brand and helps individuals and organizations grow their organization
- Less rework and after-sale support is needed. This will aid one save a lot of money
- Promote high levels of confidence and a motivated team

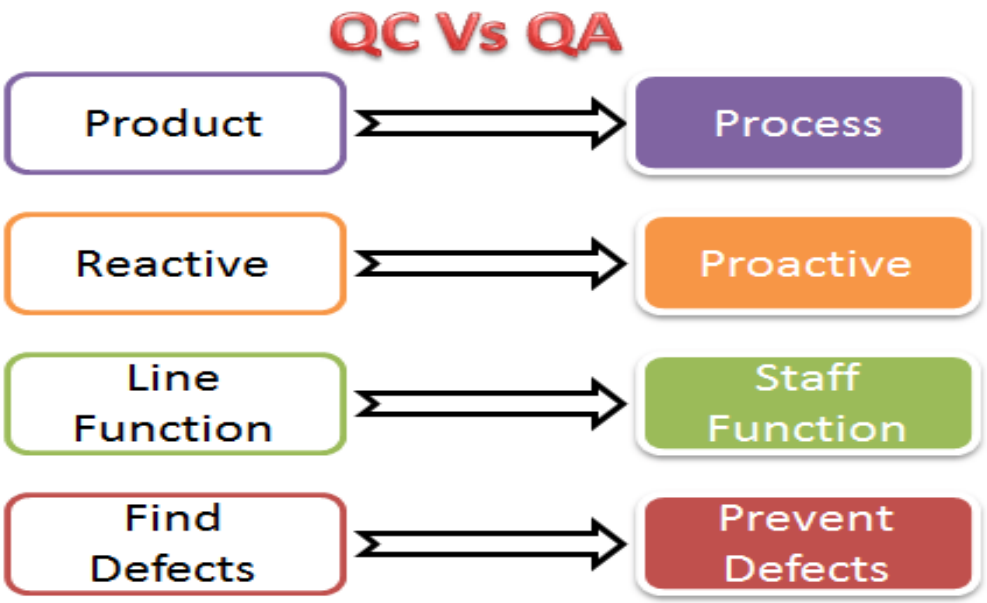


Figure 13. The relation between quality assurance and quality control

1.1.2 Quality Assurance Activities

Quality Assurance activities are those tasks the quality team executes to view the quality requirements, audit the results of control measurements and analyses quality performance in order to make sure that right quality standards and procedures are appropriately applied within the project. Given below are the three key activities of Quality Assurance:

Develop a quality assurance plan: The first of the Quality Assurance activities includes planning the overall process for assuring quality. Its purpose is to formulate a Quality Assurance plan template which is a highly efficient tool to assure quality in a project and surveil problems and drawbacks that may come up during the project execution process. The quality team is required to utilize such a plan to do the rest of the Quality Assurance activities, such as Audit and Analysis.

The fundamental steps in creating a Quality Assurance plan template are sequential and start off with setting up goals of project assurance as to why the project would need Quality Assurance. The next step would be to designate responsibilities to members of the quality team and decide the hierarchy of management such as who will carry out the Quality Assurance activities. Collect the relevant project standard information and define compliance criteria such as how to make Quality Assurance. Recognize a set of

measurements and metrics to be utilized to gauge quality levels and performance which involves checking whether the project is performed under appropriate quality levels.

Audit project quality:A quality Audit is a standard, systematic review of project activities to recognize whether these activities are executed in line with organization processes and tactical decisions. The goal of executing a project quality audit is to show the missing or inefficient policies, procedures and/or processes that decreases quality levels and increases the probability of project failure. During a supervised conventional quality audit session under Project Manager can review quality metrics such as defect frequency, budget deviation, failure rate, on-time performance, and gauge project activities against the quality baseline.

Figure 14.Benefits of quality audit

Auditing quality permits recognition and correction of any deficiencies in project activities. As a process it leads to minimize cost of quality management and highly improved product acceptance and customer satisfaction. Frequently, quality auditing activities are executed by the external and independent auditors who offer expert knowledge and advice.

Analyze project quality: Quality Analysis is a group of steps to inspect and investigate a particular project activity and recognizes what would improve the activity's value. The objective of project quality analysis is to review quality levels and define required enhancements in the current quality management framework.

The Quality Assurance activity permits examination of problems encountered, deviations in constraints, and any tasks and processes that provide value. It involves fit analysis, root cause analysis, techniques for recognizing and resolving issues, and techniques for formulating corrective actions. For example, during fit analysis, product testing is utilized as a method for scrutinizing product features and checking that they match the user acceptance criteria. A testing plan will transform into a scenario for analyzing, assuring and verifying product quality.

1.2 Providing project reports

All Interreg programmes require progress reporting during project implementation. The aim of the reporting process is to establish whether project objectives have been achieved, what resources have been expended, what problems have been encountered, and whether the project is expected to be completed on time and within budget. If performance is sufficient, the project will receive payment from the programme for costs incurred, paid and reported.

The most common practice is that programmes have one progress report form which includes both financial and content related information and has to be supplemented by required attachments. In additional, programmes often have a separate final report form which is submitted at the end of the project. The frequency of the reports submitted is decided by the programme, and this varies from programme to programme.

1.2.1 Reporting process

The process begins on the partner level, where each project partner needs to report to the controller, who certifies the expenditure declared. Activities, outputs and costs approved by the controller are summarized and aggregated in the project progress report prepared by the lead partner. It is the responsibility of the lead partner that the subsidy received from the programme is transferred to project partners in full and without delay. The procedures for the transfer of funds are to be defined in the project partnership agreement.

1.2.2 Reporting requirements

In order to carry out effective project monitoring, programmes usually require projects to submit the progress report at the agreed deadlines throughout project implementation. The report includes information about activities carried out, outputs delivered and expenditure

incurred. The information provided in the report is compared to the latest version of the application form (i.e., the application form approved, including all approved modifications) to establish if the project is delivering according to the plan.

The financial part of the report provides information on the amount spent since the last report, split according to the same budget lines as those in the application. Each project partner will also have to present a certificate signed by the approved (designated) controller, stating that he/she has checked the spending, and that all of the amounts included are correct and in accordance with the rules. Finally, there is a request for the programme to transfer the amount claimed to the lead partner.

Many programmes regard six-monthly reporting as adequate to obtain a good indication on project progress (though some programmes ask for reports every 3 months). Projects prefer 6-monthly reporting because of the administrative work involved, but on project level lead partners should establish a system which provides more frequent and systematic basic updates on the progress of each partner.

Most projects put reporting deadlines in the project partnership agreement and make clear that the lead partner will not be responsible for any project partner losses caused by partners' delays. Programmes are also toughening up on requirements and may, for example, suspend projects and/or project partners who fail to report for a number of periods. In other cases, it may be acceptable to submit a report without the delayed partners – who will then be allowed to claim for a double period with the next report.

Uniformity of reporting both to the programme (by the lead partner) and to the lead partner (by the partners) requires harmonization of procedures on all levels. Uniformity is important because lead partners need to be able to compare the input of their partners, and programmes need to be able to compare different projects. This means that, as far as it is possible, all levels need to provide the same information in the same format.

The basic principle is that programmes provide reporting templates (checklists or other reporting tools), which are distributed well in advance to the lead partners (they may be also be available on programme websites), who should pass them on to the partners.

These set out how information should be provided. Progress and financial reporting require different templates but are prepared at the same time for the same reporting periods, and submitted together to the programme.

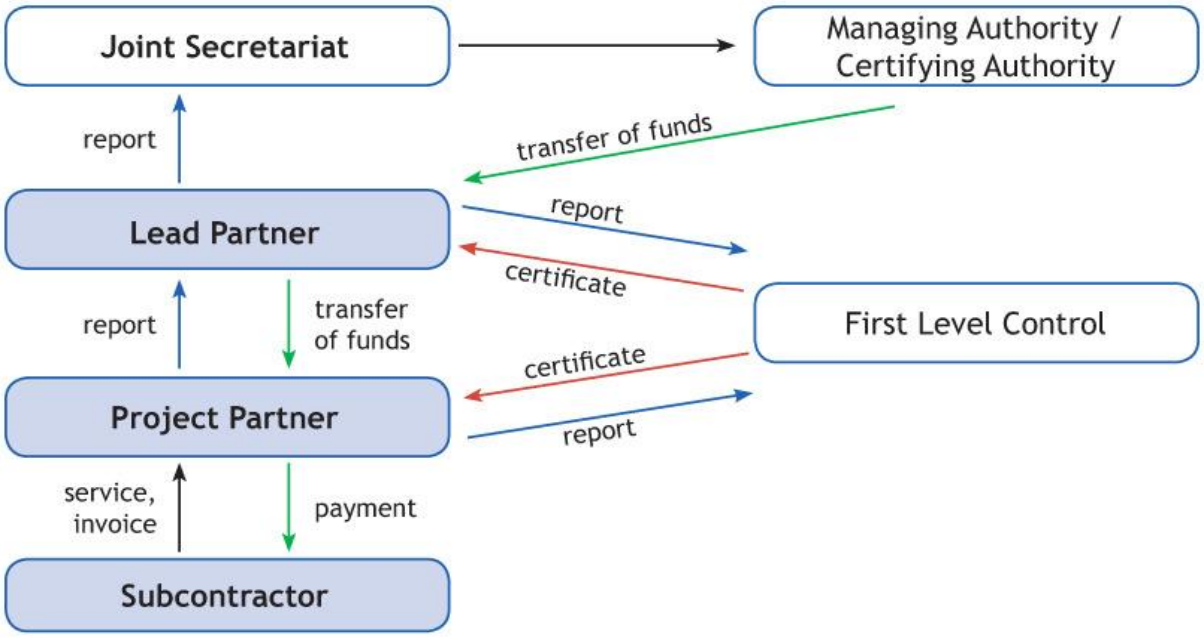


Figure 15.Reporting process

The figure above indicates that there are two main information streams in the reporting process: From the partners to the lead partner, and from the lead partner to programme management. In this process the lead partner is the central figure with an important coordination and mediation role. An efficient lead partner should allow for a smooth information flow from the programme to the partner level, and vice versa. In terms of reporting the lead partner is seen as the practical link between the partnership and programme management.

1.2.3 Project preparation reporting

During the preparation period a number of reports are written to facilitate transparency and quality assurance in relation to the individual project. In this chapter both the main project preparation reports and the various supplementary documents are presented in brief to provide an overview. The enclosed diskette provides standard formats for all reports, and guiding text on the issues to be covered. As a general rule, all project reports and documents should be short and concise. If lengthy descriptions are unavoidable, they should be placed in annexes. Reports and documents should be written in the English language and printed in an easily legible font and provided as one file.

Self-Check -1	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2pts each).

1. In which tools for quality assurance processa panel of external experts come and review the process and procedures?

A. Quality control
C. Quality audit
B. Quality management
D. Quality assurance

2. One of the following is the first of the quality assurance activities.

A. Analyze project quality
C. Develop a quality assurance plan
B. Audit project quality
D. Review project quality

3. Which one of the following are benefits of these quality assurance and quality controlprocesses?

A. Low quality output
C. It needs more money for operation
B. Decrease efficiency of operations
D. Eliminate waste or minimize waste

4. One of the following is the benefits of quality audit.

A. Identify where best practices are implemented
B. Assure the projects sponsor
C. Share best practices proven in similar project
D. All

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-2	Maintaining plant and maintenance records

2.1 Maintaining plant and maintenance records

Keeping equipment at optimum working condition minimizes the risk of having unscheduled downtime. If maintenance is needed, it's important to keep a comprehensive record - whether scheduled or unscheduled to help to understand the importance of the equipment's upkeep works.

The three principle aspects of maintenance are: servicing, repairs and inspection. Construction equipments, besides being expensive, has often to work under rough job conditions.

The following are lists of the benefits of keeping a maintenance record:

Prevent expensive repair works from happening: With constant use, your equipment is prone to wear and tear. Performing routine inspections allow you to see and repair small damages before they become a big problem. Documenting these inspections and small repairs help you keep track of all the maintenance work that your equipment has undertaken, ensuring that each machine is in tip-top shape before putting them to work.

Helps you create specialized maintenance programs: Each equipment goes under different working conditions and they have different limitations as well. With the help of routine check-ups, you will be able to determine and record the differences of each individual equipment with regards to maintenance works. In turn, this information will help you in creating maintenance programs specifically catering to each individual equipment on your fleet.

Prevent problems regarding warranty claims: Documenting every repair or maintenance work done on your equipment will help you process warranty claims much easier. Keep a record of the type of maintenance work done to your equipment as well as the exact time and date repairs were done as this information will help determine your rights for the warranty claims.

It increases the safety of operators: If a piece of plant or equipment is well maintained, the risk of accidents occurring due to malfunctioning machinery is reduced. When incidents involving faulty machinery occur, there's a big chance that the operator is the first one to be affected. Having an equipment's maintenance history documented will help you

keep track of your machinery's health. This enables you to schedule an inspection when needed, at the same time it ensures that your equipments are safe to work with.

Helps you track who is accountable for a piece of equipment: One machine might have multiple operators. Performing a routine inspection and documenting the findings after every project will help you track down who is accountable for any damage inflicted on your machinery. Keeping these types of records will also encourage operators to take better care of the equipment.

It increases the resale value of the equipment: Keeping a detailed record of all the maintenance and repairs that a piece of equipment went through will help increase its resale value. Buyers thoroughly assess a piece of equipment before purchasing it, most especially if the machines have already been used. Presenting potential buyers, a documentation of your equipment's maintenance history lets them know that the equipment they are planning to buy have been well taken care of.

2.2 Maintenance Records

Maintenance of a piece of equipment is the operation of keeping its various components in their original form as far as possible with a view to ensure that safety and production in operation do not deteriorate.

Maintenance records of work equipment are a key part of health and safety management, requiring efficient storage and management. Paperwork is often kept for extended periods of time for health and safety or compliance purposes.

If not managed properly, this can cause issues with health and safety, lack of office space, noncompliance and production levels.

Proper record keeping enables the obtaining of all information regarding equipment maintenance. The following maintenance records are generally maintained for most of the construction equipment, preventive maintenance record, special records for costly items.

Self-Check -2	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2pts each).

1. One of the following is the benefit of maintenance records.
   A. Decreases the resale value of the equipment
   B. Decreases the safety of operators
   C. Prevent expensive repair works from happening
   D. Increase expensive repair works
2. Which types of maintenance is undertaken by replacing the damaged part of the equipment?
   A. Inspection
   B. Repairs
   C. Servicing
   D. Preventive
3. Which maintenance records are maintained for most of the construction equipment?
   A. Preventive maintenance
   B. Repairing equipments
   C. Inspection of equipments
   D. Use new equipments
4. Maintenance records of work equipment are a key part of health and safety management.
   A. True
   B. False

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-3	Reviewing project completion

3.1 Project Completion

Every project needs to end and that's what project completion is all about in the last phase of the project life cycle. The whole point of the project is to deliver what you promised. By delivering everything you said you would, you make sure that all stakeholders are satisfied and all acceptance criteria have been met. Once that happens, your project can end.

Project completion is often the most neglected phase of the project life cycle. Once the project is over, it's easy to pack things up, throw some files in a drawer, and start moving right into the initiation phase of the next project.

The key activities in project completion are gathering project records; disseminating information to formalize acceptance of the product, service, or project; and performing project closure.

In project completion, the following points will be conducted:

Contract closure: Contracts come to a close just as projects come to a close. Contract closure is concerned with completing and settling the terms of the contracts let for the project. It supports the project completion process because the contract closure process determines if the work described in the contracts was completed accurately and satisfactorily. Keep in mind that not all projects are performed under contract so not all projects require the contract closure process. Obviously, this process applies only to those phases, deliverables, or portions of the project that were performed under contract.

Releasing the project team: Releasing project team members is not an official process. However, it should be noted that at the conclusion of the project, you will release your project team members, and they will go back to their functional managers or get assigned to a new project. You will want to keep their managers, or other project managers, informed as you get closer to project completion, so that they have time to adequately plan for the return of their employees.

Final payments: The final payment is usually more than a simple percentage of the work that remains to be completed. Completing the project might involve fixing the most difficult problems that are disproportionately expensive to solve, so the final payment should be

large enough to motivate the vendor to give the project a high priority so that the project can be completed on time.

Post-project evaluations: Before the team is dissolved and begins to focus on the next project, a review is conducted to capture the lessons that can be learned from this project, often called a lessons-learned meeting or document. The team explores what went well and captures the processes to understand why they went well. The team asks if the process is transferable to other projects. The team also explores what did not go well and what people learned from the experience. The process is not to find blame, but to learn.

Trust and alignment effectiveness: The project leadership reviews the effect of trust or lack of trust on the project and the effectiveness of alignment meetings at building trust. The team determines which problems might have been foreseen and mitigated and which ones could not have been reasonably predicted.

Schedule and budget management: The original schedule of activities and the network diagram are compared to the actual schedule of events. Events that caused changes to the schedule are reviewed to see how the use of contingency reserves and float mitigated the disruption caused by those events. The original estimates of contingency time are reviewed to determine if they were adequate and if the estimates of duration and float were accurate. These activities are necessary for the project team to develop expertise in estimating schedule elements in future projects they are not used to place blame.

A review of budget estimates for the cost of work scheduled is compared to the actual costs. If the estimates are frequently different from the actual costs, the choice of estimating method is reviewed.

Risk mitigation: After the project is finished, the estimates of risk can be reviewed and compared to the events that actually took place. Did events occur that were unforeseen? What cues existed that may have allowed the team to predict these events? Was the project contingency sufficient to cover unforeseen risks? Even if nothing went wrong on this project, it is not proof that risk mitigation was a waste of money, but it is useful to compare the cost of avoiding risk versus the cost of unexpected events to understand how much it cost to avoid risk.

Procurement contracts: The performance of suppliers and vendors is reviewed to determine if they should still be included in the list of qualified suppliers or vendors. The choice of contract for each is reviewed to determine if the decision to share risk was justified and if the choice of incentives worked.

Customer satisfaction: Relationships with the client are reviewed and decisions about including the client in project decisions and alignment meetings are discussed. The client is given the opportunity to express satisfaction and identify areas in which project communication and other factors could be improved. Often a senior manager from the organization interviews the client to develop feedback on the project team performance.

Senior management: The report to senior management contains all the information provided to the stakeholders in a short executive summary. The report identifies practices and processes that could be improved or lessons that were learned that could be useful on future projects.

Archiving of document: The documents associated with the project must be stored in a safe location where they can be retrieved for future reference. Signed contracts or other documents that might be used in tax reviews or lawsuits must be stored. Organizations will have legal document storage and retrieval policies that apply to project documents and must be followed. Some project documents can be stored electronically.

3.2 Reviewing project completion

The final step in project life cycle is to review the project completion. A post-implementation review is undertaken to formally review the project and identify any lessons learnt.

3.2.1 Undertaking a post-implementation review

A post-implementation review is an assessment of the overall success of the project. It is conducted by closely reviewing the project's performance against the original plans, and conformance against the project management processes defined for the project. The purpose of post-implementation review is not only to assess the project's level of success but also to identify lessons learnt and make recommendations for future projects to enhance their likelihood of success. The post-implementation review results are recorded in a document which is retained by the project as the last record of the project.

The post-implementation review document

- An assessment of how the project performed against the objectives, scope, deliverable, schedule, expense and resource targeted identified during the project initiation and project planning phases;

- A rating of the level of conformance against each of the project processes including time, cost, quality, change, risk, issue, procurement, communications and acceptance management;
- A list of project achievements and failures;
- Any lessons learnt and recommendations for future projects

The post-implementation review is undertaken at the end of the project closure phases, after the project closure report has been approved and all project closure activities complete.

3.2.2 Conducting a post-implementation review

After the project's deliverables have gone through at least one successful cycle, you can get started on the review. There are project closure checklists that help frame the process. Here are some of the best practices for conducting the review include the following.

- **Trust.** To get the information you need, you want honesty from your participants. Therefore, tell them you want openness, without fear of retribution. The more critical and truthful their observations about the project are, the more successful the review.
- **Objectivity.** While you want honesty, you don't want sour grapes or interpersonal issues clouding observations with bad feelings or to settle old scores. Seek objectivity, or as close to an impartial critique as can be expected.
- **Documentation.** Like all project management, you want to create a paper trail that illustrates how you went from Point A to Point B. By documenting the practices and procedures that created the successes in the project, you'll be able to follow them again in future projects.
- **Hindsight.** As you develop a narrative as to what worked and what didn't, what surprises arose during the project and how you dealt with them, understand that this hindsight vision can also help as you look forward towards new projects.
- **Improvement.** The point of this review process is not to blame individuals or teams for mistakes, but to learn from experience and then apply that knowledge to future projects. Stay focused on what's next, rather than looking back as a means of applying guilt.

3.2.3 Post-Implementation review methods

There are many ways to gather the information you want to determine what worked and what didn't in your project. Here are some examples.

- **Gap Analysis.** This method of assessing how a plan differed from the actual application is always a powerful tool to see what benchmarks you met, and which you didn't. You can start with your project charter and see how closely you adhered to your objectives. Look at your deliverables. Are they at a quality level you expected? When there are gaps discovered, figure out how they can be closed.
- **Project Goals.** Simply put, did you achieve the goals of your project? Are your deliverables functioning as planned? What was the error rate of the project? Can the deliverables adjust to changes in the market? How well-trained and supported are end-users? What controls and systems are in place and are they working? Are problems being addressed? Did you planned goal align with your result?
- **Stakeholders.** How satisfied are your stakeholders? Were users needs met? What effect did the project have on them? If there is dissatisfaction, why is that and what can you do to resolve it?
- **Cost.** How much did the project end up costing? What are the costs involved in operating the project's result? Are the costs aligned to the benefits of the project? If this isn't the case, how can you improve the cost next time?
- **Benefits.** Did the project achieve the benefits projected, and if not why and how can that be improved? What opportunities are there to further the results? Are there other changes you could apply to help maximize the project's results?
- **Lessons.** Did the project's deliverable, schedule and budget all meet expectations, and if not why? What were some of the issues that arose during the running of the project and how could they be avoided for the next project? What went well, and what can you learn from that experience?
- **Report.** Document what you learned from the review, whether there is actions needed to get the beneficial results you want and list the lessons you've learned, noting how the project can impact future projects, so you can build on success and avoid problems.

One of the ways to conduct a post-implementation review is by going over the project paperwork. These documents provide hard data on the ways in which a project proceeded as planned or went off-track.

3.2.4 Things to review after completing your project successfully

Every project has their own resources, team and also allocated time. If you are acting as a project manager and responsible for any ongoing project, you will definitely need to complete it before deadline whether it is successful or not. The main objective of project management is project completion, but that's not the end of story.

You should review your to-do list and completed tasks. Then, take initiative to solve ongoing problems and prepare lessons for the upcoming projects. This will not only help you to understand project management better but also help your team to become motivated. Thus, the foremost objective of every project manager should be making the best use of their time.

3.2.5 Final thoughts on post-implementation review

There are many ways to close a project, but too often the post-implementation review is neglected. It’s understandable, as a critical review can open some old wounds.

Don’t forget to review all the project documentation. It’ll help you better assess what worked and what didn’t, and provide you with an overview of the project and where there might have been unforeseen holes that you can then fill in with upcoming projects.

When you’re done with the review be completely transparent. Share your findings in a report and make sure everyone has access to these documents. If you want to, it can help if you present the information to the organization. Your goal is to create better projects, and that information isn’t proprietary. Everyone has a need to know.

Self-Check -3	Written Test

Directions: Choose the best answer for the following questions. Use the Answer sheet provided (2pts each).

1. One of the following is **Not** the key activity in project completion.
   A. Performing project closure
   B. Throw the files in a drawer
   C. Gathering project records
   D. Disseminating information
2. Which point of project completion used for the team to explores what went well and captures the processes to understand why they went well?
   A. Risk mitigation
   B. Customer satisfaction
   C. Post-project evaluations
   D. Trust and alignment effectiveness
3. ----------is an assessment of the overall success of the project.
   A. Post-implementation review
   B. Pre-implementation review
   C. Site assessment of the project
   D. Implementation review
4. Post-Implementation review method which is used to assess how a plan differed from the actual application is ----------
   A. Analysis of stakeholders'satisfaction
   B. Benefits analysis
   C. Gap Analysis
   D. Project goal analysis

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Answers

1……..... 2…… 3…… 4…….

Information Sheet-4	Establishing and documenting opportunities for future improvement

4.1 Identifying Opportunities for Improvement

Opportunities for Improvement are areas of practice in need of improvement. The feedback given in the reports will guide and direct institutions to specific areas that are worthy of additional attention. Please note an opportunity for improvement may not also be listed as an improvement priority for the institution.

Opportunities for Improvement contain the following parts:

Statement: State specifically the opportunity for improvement the team is noting. The statement must be a complete sentence.

Evidence: Provide the evidence supporting the opportunity for Improvement. Ensure that the evidence listed is substantiated in the report.

Rationale: Describe why the opportunity for improvement is important

4.2 Project documentation and its importance

Project management leaders are often asked a common question: what is the importance of project documentation and how can I ensure I'm performing the function right. There's no doubt that project documentation is a vital part of Project management.

The essential two functions of documentation substantiate it:

- to make sure that project requirements are fulfilled and
- to establish traceability concerning what has been done, who has done it, and when it has been done.

Documentation must lay the foundation for quality, traceability, and history for both the individual document and for the complete project documentation. It is also essential that the documentation is well arranged, easy to read, and adequate.

4.2.1 Project documentation uses

Experienced project managers excel at making and following standard templates for their project documents. They reuse successful project plans, business cases, requirement sheets, and project status reports to help them focus on their core competency of managing the project rather than balancing the unmanageable paperwork.

4.2.2 Details of project documentation phases

Project management usually follows the following project documentation phases:

Feasibility report: The purpose of a feasibility report is to investigate and showcase task requirements and to determine whether the project is worthwhile and feasible. Feasibility is verified by five primary factors – technology and system, economic, legal, operational, and schedule. Secondary feasibility factors include market, resource, culture, and financial factors.

Project charter: Project charter is sometimes also known as the project overview statement. A project charter includes high-level planning components of a project, laying the foundation for the project. It acts as an anchor, holding you to the project's objectives and guiding you as a navigator through the milestones. It is formal approval of the project.

Requirement specification: A requirement specification document is a complete description of the system to be developed. It contains all interactions users will have with the system as well as non-functional requirements.

Design document: The design document showcases the high- or low-level design components of the system. The design document used for high-level design gradually evolves to include low-level design details. This document describes the architectural strategies of the system.

Work plan/estimate: A work plan sets out the phases, activities, and tasks needed to deliver a project. The timeframes required to deliver a project, as well as resources and milestones, are also shown in a work plan. The work plan is referred to continually throughout the project. Actual progress is reviewed daily against the stated plan and is, therefore, the most critical document to deliver projects successfully.

Traceability matrix: A traceability matrix is a table that traces a requirement to the tests that are needed to verify that the requirement is fulfilled. A useful traceability matrix will provide backward and forward traceability: a requirement can be traced to a test and a test to a requirement.

Issue tracker: An issue tracker manages and maintains a list of issues. It helps add issues, assign them to people, and track the status and current responsibilities. It also helps develop a knowledge base that contains information on resolutions to common problems.

Change management document: A change management document is used to capture progress and to record all changes made to a system. This helps in linking unanticipated adverse effects of a change.

Test document: A test document includes a test plan and test cases. A test case is a detailed procedure that thoroughly tests a feature or an aspect of a feature. While a test plan describes what to test, a test case describes how to perform a particular test.

Technical document: The technical document includes product definition and specification, design, manufacturing/development, quality assurance, product/system liability, product presentation, description of features, functions, and interfaces, safe and correct use, service and repair of a technical product as well as its safe disposal.

Functional document: Functional specifications define the inner workings of the proposed system. They do not include the specification of how the system function will be implemented. Instead, this project documentation focuses on what various other agents (such as people or a computer) might observe when interacting with the system.

User manual: User Manual is the standard operating procedure for the system.

Transition/rollout plan: The rollout plan includes detailed instructions on how to implement the system in an organization. It consists of the schematic planning of the rollout steps and phases. It also describes the training plan for the system.

Handover document: The handover document is a synopsis of the system with a listing of all the deliverables of the system.

Contract closure: Contract closure refers to the process of completing all tasks and terms that are mentioned as deliverable and outstanding upon the initial drafting of the contract. This is only applicable in cases of outsourced projects.

Self-Check -4	Written Test

Directions: Much project documentation phases in column ‘‘A’’ with their function in column ‘‘B’’ and write the answer on the space provided (2pts each).

A	B
--------1. Work plan/estimate	A. Determine whether the project is worthwhile and feasible
--------2. Technical document	B. Laying the foundation for the project
--------3. Change management document	C. Contains all interactions as well as non-functional requirements.
--------4. Project charter	D. Provide design details
--------5. Requirement specification	E. Sets out the phases, activities, and tasks needed to deliver a project
--------6. Design document	F. Used to capture progress and to record all changes
--------7. Feasibility report	G. Provide a test plan and test cases
	H. Provide product definition and specification, design, manufacturing/development, etc.
	I. Provide operating procedure for the system

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

1……. 2…… 3…… 4…… 5…… 6…….7…….

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