



**SUCCESSION
TRAINING**

BSB51415 Diploma of Project Management



Constraint Management

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ASSESSMENT WORKBOOK COVERSHEET

WORKBOOK:	Workbook 2
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Please read the Candidate Declaration below and if you agree to the terms of the declaration sign and date in the space provided.

By submitting this work, I declare that:

- I have been advised of the assessment requirements, have been made aware of my rights and responsibilities as an assessment candidate, and choose to be assessed at this time.
- I am aware that there is a limit to the number of submissions that I can make for each assessment and I am submitting all documents required to complete this Assessment Workbook.
- I have organised and named the files I am submitting according to the instructions provided and I am aware that my assessor will not assess work that cannot be clearly identified and may request the work be resubmitted according to the correct process.
- This work is my own and contains no material written by another person except where due reference is made. I am aware that a false declaration may lead to the withdrawal of a qualification or statement of attainment.
- I am aware that there is a policy of checking the validity of qualifications that I submit as evidence as well as the qualifications/evidence of parties who verify my performance or observable skills. I give my consent to contact these parties for verification purposes.

Name : Lakshmi
Harikrishnan

Signature:

Date:

WRITTEN QUESTIONS

Part 1 – Project Scope

1. Which of the following are project initiation documentation required at the start of the project?

Select all that apply.

☐	a. Communications log
☒	b. Project plan
☐	c. Work Breakdown Structure (WBS)
☐	d. Gantt Chart
☒	e. Project charter
☐	f. Risk management

2. Which of the following are components of a project scope-management plan?

Select all that apply.

☒	a. Project deliverables
☐	b. Project staff assignments
☐	c. Change request
☒	d. Project justification
☒	e. Product description
☐	f. Performance reports
☒	g. Project objectives
☐	h. Project funding requirements
☐	i. Quality metrics
☐	j. Budget forecasts

3. In your own words, discuss how project time and cost affect the project scope. Do not exceed 100 words.

All projects are carried out under certain constraints – traditionally, they are cost, time and scope. When you increase a project's scope, you will either have to increase its cost or time. If you reduce the project's cost, you will either have to reduce its scope or increase its time. Projects have a deadline date for delivery. When you reduce the project's time, you will either have to increase its cost or reduce its scope.

4. Which of the following are events or problem areas relating to project scope that could trigger the need for a formal change request?

Select all that apply.

☒	a. The deliverables may not meet quality requirements.
☐	b. Grammatical and typo errors are found in the project initiation documents.
☒	c. The deliverables may not be what the client wanted, even though they were covered in the project plan.
☐	d. The stakeholder considers the change request and advises the project manager.
☐	e. Observance of non-working holidays affecting project time.
☒	f. Additional quality requirements (such as new legislation or changes in standards) will render the deliverables non-compliant.
☒	g. Failure of equipment needed to produce the deliverables.
☐	h. Missing documentations in the project's information system.
☒	i. Raw materials are no longer available.
☒	j. Supplier or contractor closing business.

5. Which of the following are procedures that typically must be followed under change control processes?

Select all that apply.

☐	a. Project manager seeks advice from supervisor regarding changes in cost.
☐	b. Project manager assigns a project team member to recalculate for the critical path.
☒	c. Project manager provides the change request to the appropriate stakeholder for approval.
☒	d. The stakeholder considers the change request and advises the project manager.
☒	e. The project manager updates the project plan and other documentation where required.
☒	f. Project manager drafts the change request.
☐	g. Project manager delegates the authority to the project team members in advising other stakeholders of the changes.
☒	h. The project manager advises relevant stakeholders (sponsor, team members, etc.) of the changes.
☒	i. Details of the proposed change to be communicated to the project manager.
☐	j. The project sponsor and owner may automatically terminate the project contract.

6. The following are methods of measuring work outcomes and progress against plans. Match each method to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Method	Description
c	Units completed	a. Also known as the 'steps' method, this is used for projects that involve subtasks that need to be completed in an orderly fashion.
a	Incremental milestones	b. In this method, tasks that are being calculated tend to occur over a longer duration time and include multiple subtasks, where subtasks can have different units of measurements.
d	Start / finish	c. This method is used when project tasks are done repeatedly. Assuming that each task is completed at the same amount of time, resources and effort, each task is counted and totaled.
b	Weighted or equivalent units	d. This method is used to determine the percentage of the work completed and the percentage of the work that is still yet to be completed.

7. Which of the following are activities involved in decomposition of the total work project?

Select all that apply.

☐	a. Summarise project tasks in the form of a written report.
☒	b. Identify and analyse the deliverables and related work.
☒	c. Structure and organise the work breakdown structure (WBS).
☐	d. Arrange the smallest project tasks to form an aggregate representation of the total project task
☒	e. Decompose the upper work breakdown structure (WBS) levels into lower level detailed components.
☐	f. Calculate duration and resource effort for each project task.
☒	g. Develop and assign identification codes to the WBS components.
☐	h. Inspect whether work and deliverables meet requirements and product acceptance criteria.
☐	i. List resources required for each project task.
☒	j. Verify that the degree of decomposition of the work is necessary and sufficient.

8. List three (3) ways in which the Work Breakdown Structure (WBS) can be created.

- a. Using subprojects which may be developed by organisations outside the project team such as the contracted work.
- b. Using major deliverables as the first level of decomposition.
- c. Using subprojects which may be developed by organisations outside the project team such as the contracted work.

9. The following are some problem areas in scope management. In your own words, briefly discuss each problem area.

Do not exceed 100 words for each discussion.

Problem areas	Discussion
Scope creep	Scope creep is when a project's scope changes, the project work starts to extend, or "creep", beyond what was originally agreed. With just about any project, change is inevitable, but it's the uncontrolled changes that delay projects and cause scope creep. Requested changes that are documented and implemented as part of the updated scope of a project are controlled. For managing Scope creep, every project manager should aim to reduce the unauthorized changes to a project's requirements significantly.
Sponsor / project owner approval	Project manager will receive requests for changes from end users, stakeholders, or client managers. Since these are all people in the client organisation, there is a tendency to think that these requests should be accepted. This is a mistake. The end users usually surface scope-change requests, but they can't approve them. Even a client manager can't approve scope-change requests. The only person who can is the sponsor (unless the sponsor has delegated this authority to others). Many projects get in trouble because they think they are getting approval to proceed with scope changes but discover later that the person who really counts, the sponsor, has not agreed.
Project team accountability	Since the project team members can have a lot of interaction with the client, they are the ones who field scope-change requests the most often. Therefore, the entire project team must understand the importance of scope-change management. All of them must detect scope changes when they occur and funnel them back to the project manager. If they take on the extra work themselves, there is a good likelihood that their activities will be completed late and jeopardize the entire project. If you find that your project is starting to go over its budget and beyond its schedule, try to find the cause. In many cases, you'll find that you're simply taking on more work than you originally agreed to.

10. In your own words, discuss the significance of scope management.

Do not exceed 150 words.

For a project manager, managing the expectations of the stakeholders and clients is one of the most challenging tasks. With a definite project scope, managers can easily stay on track and ensure that all the deadlines are being followed throughout the project life cycle.

Effective project scope management gives a clear idea about the time, labor, and cost involved in the project. It helps to distinguish between what is needed and what isn't needed for accomplishing the project.

Scope in project management also establishes the control factors of the project to address elements that might change during the project lifecycle.

A well-defined project scope management helps avoid common issues like:

- Constantly changing requirements
- Pivoting the project direction when you are already mid-way
- Realizing that the final outcome isn't what was expected
- Going over the discussed budget
- Falling behind the project deadlines

11. The *PMBOK Guide* outlines the following processes in project scope management. List one (1) tool or technique used in each process.

Project Scope Management	Tool or technique
Collect requirements	<i>group decision techniques</i>
Define scope	<i>product analysis</i>
Create WBS	<i>decomposition</i>
Verify scope	<i>inspection</i>
Control scope	<i>variance analysis</i>

12. Consider the roles and responsibilities of the project manager in project planning. List five (5) roles of the project manager in project planning and list at least one responsibility for each of these roles.

Roles (list five (5))	Responsibilities (List at least one (1) for each role)
Understanding the project	Project managers figure out all the tasks necessary to achieve the project goals, then they sequence those tasks into a schedule
Scope management	Defining and managing scope, creating a work breakdown structure (WBS), and requirements gathering
Time management	Planning, defining, and developing schedules, activities, estimating resources and activity durations
Cost management	Planning and estimating costs, and determining budgets
Quality management	Planning and identifying quality requirements

Part 2 – Project Time

- The following are estimation tools and techniques used in determining duration. Match each tool and technique to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Estimation tools and techniques	Description
b	Analogous estimating	a. This technique uses a statistical relationship between historical data and other variables to calculate an estimate for activity duration.
a	Parametric estimating	b. This uses parameters such as duration, budget size, weight, and complexity, from a previous, similar project, as the basis for estimating the same parameter to measure for a future project. This technique relies on the actual duration of previous, similar projects as the basis for estimating the duration of the current project.
e	Three-point estimating	c. This is guided by historical information. It provides duration estimate information or recommended maximum activity durations from prior similar projects. This can also be used to determine whether to combine methods of estimating and how to reconcile differences between them.
c	Expert judgement estimating	d. Contingencies are accounted for into the overall project schedule to account for schedule uncertainties.
d	Reserve analysis	e. This technique uses a mathematical formula to determine a weighted average of estimates. It uses the formula: $Te = \frac{To + 4 \times Tm + Tp}{6}$.

2. The following are estimation tools techniques used in determining activity resource. Match each to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Estimation tools and techniques	Description
d	Expert judgment	a. Several companies or organisations routinely distribute updated production rates and unit costs of resources for an extensive array of labour trades, material, and equipment for different countries and geographical locations within countries.
e	Alternative analysis	b. In this technique, when an activity cannot be estimated with a reasonable degree of confidence, the work within the activity is decomposed into more detail. The resource needs are estimated. These estimates are then aggregated into a total quantity for each of the activity's resources.
a	Published estimating data	c. This tool has the capability to help plan, organise, and manage resource pools and develop resource estimates.
b	Bottom-Up estimating	d. This technique is often required to assess the resource-related inputs to this process. Any group or person specialised with knowledge in resource planning and estimating can provide such expertise.
c	Project management software	e. These include using various levels of resource capability or skills, different, size or type of machines, different tools (hand versus automated), and make-or-buy regarding the resource.

3. In identifying the critical path, the following parameters need to be determined for each task. Discuss each parameter.

Do not exceed fifty (50) words for each discussion.

Parameter	Discussion
ES	This is simply the earliest date that a task can be started in your project. It equals the earliest time that all predecessor activities can be completed.
EF	The earliest time by which a particular activity can be completed.
LF	Latest date that the activity can finish without causing a delay to the project completion date.
LS	Latest date that the activity can start without causing a delay to the project completion date.

4. Which of the following statements accurately explain the process of developing the project schedule, including the schedule baseline?

Select all that apply.

☒	a. Developing the schedule is the process of analysing activity sequences, durations, resource, requirements, and schedule constraints to create the project schedule.
☒	b. The project schedule and schedule baseline are developed or established using the activity lists, activity attributes, project scope statement as the bases.
☒	c. Entering the activities, durations, and resources into the scheduling tool generates the schedule baseline.
☐	d. Tools and techniques used in developing the project schedule and schedule baseline include decomposition of the total project work.
☐	e. Developing the schedule baseline starts and ends in the planning phase of the project.

5. Schedule control is the process of monitoring the status of the project to update project progress and manage changes to the schedule baseline.

Which of the following are processes that are involved in schedule control?

Select all that apply.

☒	a. Determining the current status of the project schedule.
☐	b. Defining activities or specific actions to be performed to produce project deliverables
☒	c. Influencing the factors that create schedule changes
☐	d. Decomposing total project work into its lowest levels.
☒	e. Determining that the project schedule has changed
☐	f. Estimating duration and resource effort for the project.
☒	g. Managing the actual changes as they occur.

6. Consider the methods used in project time management.
 - a. In your own words, discuss the application/use of the Gantt Chart. Do not exceed fifty (50) words.
 - b. List three (3) project data generated from the Gantt Chart.
 - c. List three (2) limitations of the Gantt Chart.

- a. A Gantt chart is a project management tool assisting in the planning and scheduling of projects of all sizes, although they are particularly useful for simplifying complex projects. Project management timelines and tasks are converted into a horizontal bar chart, showing start and end dates, as well as dependencies, scheduling and deadlines, including how much of the task is completed per stage and who is the task owner. This is useful to keep tasks on track when there is a large team and multiple stakeholders when the scope changes
- b. Start and end date of the project
The relationships between the tasks
Key milestones within the project
- c. All Tasks are not visible in a single view of a Gantt
Updating a Chart is Very Time Consuming

7. Consider the methods used in project time management.
- a. In your own words, discuss the application/use of the Critical Path Method. Do not exceed fifty (50) words.
 - b. List three (3) project data generated from the Critical Path Method.
 - c. Discuss the limitation of the Critical Path Method. Do not exceed fifty (50) words.

- a. The critical path method (CPM) is a project modelling technique that's used by project managers to find important deadlines and deliver a project on time. In a project, the critical path is the longest distance between the start and the finish, including
- b. Duration of the project
The earliest time that an activity can start
The earliest time that an activity can finish
- c. It is believed that the methodology was developed for routine and complex projects with the possibility of a minimum change in the completion time of tasks. CPM loses its usefulness in more chaotic projects. For bigger projects, CPM networks can be complicated too. It also does not handle the scheduling of the resource allocation.

8. The following are tools and techniques used in project scheduling. Match each tool and technique to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Project scheduling tools and techniques	Description
b	Schedule network analysis	a. This is the process of looking at all of the activities that must be completed, and calculating the 'best line' – or critical path – to take so that you'll complete the project in the minimum amount of time. The method calculates the earliest and latest possible start and finish times for project activities, and it estimates the dependencies among them to create a schedule of critical activities and dates.
a	Critical Path Analysis	b. This is a graphic representation of the project's activities, the time it takes to complete them, and the sequence in which they must be done. Project management software is typically used to create these analyses. Common formats for this include Gantt Charts and PERT Charts
d	Schedule compression	c. They expedite the scheduling process by generating start and finish dates based on the inputs of activities, network diagrams, resources, and activity durations.
c	Automated scheduling tools	d. This tool helps shorten the total duration of a project by decreasing the time allotted for certain activities. It's done so that you can meet time constraints, and still keep the original scope of the project.

9. Which of the following statements accurately explain the work breakdown structure (WBS) including its application in project schedules?

Select all that apply.

☒	a. Work breakdown structure (WBS) is the subdivision of project deliverables and project work into smaller, more manageable components.
☐	b. The work breakdown structure (WBS) identifies project personnel who are responsible for each project task.
☒	c. Work breakdown structure (WBS) helps define activities of the project which provide the basis for estimating, scheduling, executing, and monitoring and controlling the project work.
☐	d. The work breakdown structure (WBS) is used to represent the full project scope of the project.
☒	e. The work breakdown structure provides the relationships among all components of the project and the project deliverables.
☒	f. The work breakdown structure (WBS) is used as the basis for the scope baseline which is used in identifying activities or specific actions to be performed to produce of the project deliverables.
☐	g. Project work at lowest levels are not included in the work breakdown structure (WBS)

Part 3 – Project Cost

1. The following are processes involved in project cost management including budgeting the cost of the project. In your own words, discuss each.

Do not exceed fifty (50) words for each discussion.

Estimating costs	Cost estimation is the process of quantifying the costs associated with all the resources required to execute the project. To perform cost calculations, we need the following information: ▪Resource requirements ▪Price of each resource ▪Duration that each resource is required ▪Potential risk ▪Insight into the company's financial health and reporting structures
Determine budget	Budgeting is the process of allocating costs to a certain chunk of the project, such as individual tasks or modules, for a specific time period. Budgets include contingency reserves allocated to manage unexpected costs. Budgeting creates a cost baseline against which we can continue to measure and evaluate the project cost performance.
Control cost	Cost control is the process of measuring cost variances from the baseline and taking appropriate action, such as increasing the budget allocated or reducing the scope of work, to correct that gap. Cost control is a continuous process done throughout the project lifecycle.

2. The following are different tools and techniques used in cost management. Match each to its correct description.

Write the letters that correspond in the spaces provided.

	Strategy	Description
b	Analogous estimating	a. This is used to establish both the contingency reserves and the management reserves for the project with regards to cost.
c	Parametric estimating	b. This strategy uses the values of costings from a previous, similar project as the basis for estimating the same parameter or measure for a current project. This is used when the current project is similar to a previous one in terms of defined parameters.
e	Cost aggregation	c. This uses a statistical relationship between historical data and other variables to calculate and estimate for cost. This technique is used to produce higher levels of accuracy depending upon the sophistication and underlying data built into the model. Estimates made through this project can be applied to the whole project or to segments of a project.
a	Reserve analysis	d. These are used to develop mathematical models to predict total project costs.
d	Historical relationships	e. Cost estimates are combined by work packages in accordance with the Work Breakdown Structure. The work package cost estimates are then combined for the higher component levels of the WBS and ultimately for the entire project.
g	Earned value management	f. In this technique cost performance measurements are used to assess the magnitude of variation to the original cost baseline.

f	Variance analysis	g. This is commonly used as a performance measurement. It integrates project scope, cost, and schedule measure to help the project management team assess and measure project performance and progress.
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3. List four (4) processes which are followed in monitoring the project costs against outcomes to ensure that additional expenses are not incurred.

- a. Using an effective tool for managing the project finances
- b. Sending invoices on a regular (or monthly) basis.
- c. Paying invoices promptly.
- d. Checking incoming invoices against contracts, quotes, agreements, etc.

4. You are appointed as one of the Project Managers of Bigger than Big Corporation. As one of the Project Managers, it is essential that you have a full understanding of the organisation's policies and procedures relevant managing projects within Bigger than Big.

Review Bigger than Big Corporation's [Project Management Policy and Procedures](#) (username: cstclearner password: CstcPty@123).

- a. In your own words, discuss the organisation's Project Management Policy, including its background, purpose, and its scope.
- b. In your own words, discuss the organisation's Project Management Procedures including their purpose and scope.
- c. In your own words, list and discuss the Project Phases prescribed in the organisation's Project Management Procedures.

Do not exceed 100 words for each discussion.

- a. Bigger Than Big is focused to the implementation of a standard way to deal with project management that mirrors the Mission and Values of the organisation and the predictable utilisation of undertaking the project management procedures and templates to encourage the usage of key needs. This arrangement sets up a broad way to deal with the commencement, planning, implementation and conclusion of ventures. It portrays the base prerequisites for the administration and the executives of activities across Bigger Than Big Corporation. This strategy is intended to improve the manner by which organisation ventures are overseen as they progress to culmination and to expand the perceivability of undertakings and our cycles to Bigger Than Big Corporation.

A task is typically situated inside a program of work. Undertakings inside a program will commonly have shared destinations that are connected to the hierarchical unit plan. The venture the board model illustrated by this strategy has been intended to oblige venture needs across Bigger Than Big Corporation. Projects must work with regards to strategies and methodology of organisation as decided every now and then including yet not restricted to the Risk Management Policy, the Delegations of Authority Policy, the Procurement Policy and the Leading and Managing Change Framework.

- b. This Bigger than Big Project Management Procedure verbalises the Bigger Than Big Project Management Policy and the Project Management Lifecycle by characterising the cycles that are performed for the duration of the life of a task to guarantee the proficient and viable administration of projects. The Project Management Procedure applies to projects in the Bigger Than Big. A task is a group of work with particular beginning and end dates that advances through characterised stages and sticks to a proper project the executives technique. It brings about the change of a business work as well as conveyance of at least one results.

- c. Pre-initiate Phase : builds the foundation of a project and is often triggered when an individual identifies the need to solve a problem, improve a process or implement a new service. It defines what the project will attempt to achieve based on appropriate business justification. If a project has already been approved it can proceed directly to the Initiate phase and the preparation of the Project Initiation Document.

Initiate Phase: The Initiate Phase begins the process of determining how the project will be executed. The major activity in the Initiate Phase is the preparation of the Project Initiation Document. The Project Manager, in consultation with key stakeholders, outlines the intended approach to project governance, executing the work, and managing resources and risk.

Plan Phase: The Plan Phase provides further detail about how the project will be conducted. The major activity in this phase is the addition of detailed schedule and budget information to the Project Initiation Document.

Implement Phase: The Implement Phase focuses on the process of determining how the project outputs will be delivered. It is triggered by the

preparation and approval of a detailed implementation plan that is added to the Project Initiation Document. The implementation plan consists of all the activities related to systems, staff, processes and training that must be completed to achieve the intended project outputs.

Close Phase: The Close Phase is the formal closure of the delivery component of the project. It has two main outcomes:

- > handover of project outputs to the operational areas responsible for ongoing support and maintenance (if applicable to the project); and
- > The evaluation of the success of the project (also known as Benefits Realisation Analysis)

Part 4 – Project Quality

1. In your own words, discuss each of the following key concepts in Quality Management.

Do not exceed 100 words for each discussion.

Key Concepts in Quality Management	Discussion
Customer satisfaction	Everything comes down to customer satisfaction. Customer satisfaction determines the success of a Project. Understand, evaluate, define, and manage requirements, so that customer expectations are met. This conformance to requirements to ensure the project produces what it was created to produce and fitness for use, i.e., the product or service needs to satisfy the real needs.
Prevention over inspection	Cost of Quality (COQ) is the cost that needs to be incurred to make a quality product. COQ is also defined as the sum of all costs incurred to ensure that the project conforms to the requirements. The overall Cost of Quality (COQ) can be divided into two: 1. Cost of Conformance is the costs incurred by carrying out activities to ensure the project and deliverables conform to the quality requirements and avoid failure. 2. Cost of Non-Conformance: this is the money that needs to be spent for not conforming to the quality requirements.
Continuous improvement	The plan-do-check-act (PDCA) cycle is the basis for quality improvement as defined by Shewhart and modified by Deming. In addition, quality improvement initiatives such as total quality management (TQM), Six Sigma, and Lean Six Sigma may improve both the quality of project

2. In your own words, discuss the difference between Quality Assurance and Quality Control.

Do not exceed 100 words.

Quality assurance is a process-based approach; its primary objective is to prevent defects in deliverables in the planning stage to avoid rework, which is always expensive.

Quality control is in the “monitoring and controlling process group” and is concerned with the activities and measures taken to achieve quality requirements.

Quality Control and Quality Assurance processes are closely related and interact with each other. The quality assurance process defines the procedures to carry out quality control, and feedback from quality control will influence the quality assurance process. Should defects are found from quality control processes, the information would be used by quality assurance processes to determine any corrective/preventive measures that are needed.

3. The following are standards that could apply in various projects. In your own words, discuss each standard. Do not exceed fifty (50) words for each discussion.

People standards	Successful projects are usually the result of careful planning and the talent and collaboration of a project's qualified team members. If lower-skilled resources are assigned to an activity, there may be reduced efficiency or productivity due to increased communication, training, and coordination needs leading to a longer duration estimate.
Process standards	The standard process is for ensuring all project activities necessary to design, plan and implement a project are practical and efficient with respect to the purpose of the objective and its performance.
Product / service standards	It's essential to check the quality of the deliverables during the project management process in order to adjust the deliverables if they're not meeting the standards that have been set. This can be done at the end of the project, but it's not as efficient to redo rather than to readjust.

4. The following are quality assurance and control methods, techniques and tools. Match each to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Methods, tools, techniques	Description
h	Benchmarking standards	a. This is a distribution of dots comparing two variables. If the two variables are completely independent you would expect the dots to be evenly distributed randomly across the graph. If there is a strong relationship though, the graph will show a straight line or a mathematical curve going through it.
g	Brainstorming sessions	b. These are graphical representations showing a visual impression of the distribution of data. Usually it shows the frequency up the Y axis of the bar graph and the measuring variable along the X axis.
d	Control charts	c. It is a graph where the X axis is time dependent. This allows you to look for time-based cycles in processes.
f	Flowcharts	d. These are also known as Shewhart charts or process-behaviour charts. These charts are used to statistically measure the quality characteristics of a process are under control. This is based on a statistical analysis where a centre line is drawn for the mean of the output, then an upper control limit and a lower control limit is created either side of the centre line. The process is then measured over a period of time and the results plotted on the graph. Once the graph has been created, it can be analysed to test the stability of the process and also any cycles of errors.
b	Histograms	e. It is very similar to a histogram, but it includes a line over the graph indicating the cumulative distribution of the results.

e	Pareto charts	f. A diagram that represents a process. It shows the steps visually as a series of boxes with arrows in between them showing the work flow. Rectangular boxes represent tasks and diamond shaped boxes represent decision points, where the flow can split into two or more directions.
c	Run charts	g. It occurs when a group meets and is presented with a scenario where they creatively come up with a range of solutions.
d	Scatter grams	h. These may be dictated to by legislation through Federal, State or Local Government regulations, and may be dictated by industry bodies.

5. List five (5) responsibilities of the project manager in quality management.

- a. Determining the quality standards for the project deliverables.
- b. Determining the quality standards for the project processes.
- c. Documenting all the required standards in the project plan.
- d. Leading, or at least coordinating, project QA and QC activities.

6. The following are methods used in managing continuous improvement. In your own words, discuss each method.

Do not exceed fifty (50) words for each discussion.

Six Sigma	it's a methodology used to improve the quality of an output in a process. It does this by first identifying, and then removing, the causes of defects. This is achieved via a set of quality management methods, which feature both empirical and statistical approaches
Lean Six Sigma	Lean Six Sigma is a team-focused managerial approach that seeks to improve performance by eliminating waste and defects. It combines Six Sigma methods and tools and the lean manufacturing/lean enterprise philosophy, striving to eliminate waste of physical resources, time, effort and talent while assuring quality in production and organizational processes
Total Quality Management	TQM is a Project management technique or strategy that is implemented to assure that awareness of quality is embedded in all phases of the project from conception to completion. This process improvement strategy can help you to increase productivity and it benefits the quality of the products you offer customers and clients.

CASE STUDY

Instructions to Student

These case studies are hypothetical situations which will not require you to have access to a workplace, although your past and present workplace experiences may help with the responses you provide. You will be expected to encounter similar situations to these in future as you work in a project team environment.

In the real world you are likely to encounter the situation where you enter a project, taking over from another project manager. The documentation that is handed over to you is not necessarily up to scratch, and there could be serious issues with the project. This assessment captures that real life scenario.

The case studies are the first part of dealing with “multiple complex projects” required in all the units of this subject. The other assessment covering this requirement is the practical assessment. When you have completed the case studies you will be able to commence the practical assessment which covers the generic skills needed to function as an effective project team member. This assessment on the other hand covers the application of the underpinning knowledge and background theory.

Introduction

You have been appointed as a project management consultant to the project team at Awesome Landscapes Pty Ltd. Specifically, you are required to provide independent advice on seeing their current project throughout its entire lifecycle.

You have already provided advice to Awesome Landscapes in the previous workbook.

Today is 24 July 20xx. The project will shortly progress into the implementation stage. You have now been provided with up-to-date project documentation below, including an updated Project Plan. The project steering committee have reviewed the Project Plan, but they wish to have you conduct an independent evaluation of the project prior to signing it off.

As part of your consultancy services, you will be assisting the team in addressing issues around project constraints by answering the questions that follow this scenario.

The documents you need to complete the succeeding tasks can be accessed through the following links:

[Project Charter version 2 \(.pdf\)](#)

[Project Plan version 2 \(.pdf\)](#)

[Project Gantt Chart version 2 \(.mpp\)](#)

[Project Gantt Chart version 2 \(.pdf\)](#)

[Project Network Diagram version 2 \(.pdf\)](#)

(username: cstclearner password: CstcPty@123)

Note: These documents were generated in year 2016. For the purpose of this assessment, refer to ‘2016’ as the current year and ‘2017’ as the succeeding year.

1. List the three (3) project deliverables in Phase 1.

- a. Removal of vegetation in areas being cleared and replanting/maintaining the plants for replanting in stage 3.
- b. Access roads through the existing forest for builders to access each building site.
- c. Retaining walls to provide stability around the buildings. Includes three additional retaining walls as per updated site plan.

2. Discuss the project constraints in terms of scope, time, cost, and quality.

Scope	The natural environment must be carefully preserved as per the strict Council requirements for environmentally sensitive areas. The landscaping work must work around the building construction.
Time	Completion of all work within nine months.
Cost	project must complete with onFixed budget of \$550,000 + GST.
Quality	The construction and landscaping of the resort must be as per the Council approved plan. Council requires detailed plans of the site landscaping along with a full copy of the project charter and project plan. The natural environment must be carefully preserved as per the strict Council requirements for environmentally sensitive areas. Other conditions imposed by Council.

3. Review the project schedule as set out in the Project Plan and the Gantt Chart
Arrange the following tasks in the proper sequence as dictated in Phase 3 of the critical path.

Write 1 – 12 in the spaces provided; where 1 go first and 12 go last.

8	Remove weeds
11	Plant additional plants
2	Move gravel to car park
1	Expand car park

12	Remove greenhouses
9	Plant plants from greenhouses
3	Seal car park
6	Soil preparation
7	Add boulders
5	Construct stone paving pathway
10	Purchase additional plants
4	Landscape over old access roads

4. Review the Project Plan. The change request has outlined one change in the scope of the project.
- What is the change in scope?
 - How does this change in scope impact the overall duration of the project?
 - How does this change in scope impact the quality aspect of the project?

- | |
|---|
| <ol style="list-style-type: none">Addition of three new retaining walls and services to additional units as per updated site plan. Increase in cost of road gravel by \$6,500.The number of hours required to complete the construction of the retaining walls has increased from 120 to 140 hours. The addition of three extra retaining walls has also resulted in additional time being allocated to the excavation of the incoming utilities and septic system.Additional standards apply to the construction of the new retaining walls, but as this is outside the scope of this project, these standards are not covered in this project plan. |
|---|

5. Why does the change request only list one change in project cost, yet when you look at the financial tables the costs seem to have increased in numerous parts of the project not even related to the item in the change request?

Do not exceed 100 words.

Even though the change request only relates to additional retaining walls and services to additional units this influences numerous different parts of project such as the labour, plant, material and resource requirements. This thus influences the quality requirements as there are more items to ensure quality on. All the support functions such as planning, project management and supervision are all increased due to the extra prerequisites.

6. Who is responsible for working out these impacts of what initially seemed to be such a simple change, and ensuring all affected stakeholders understand the impact of such a change?

The project manager.

7. Access and review the Gantt Chart version 2.
- What important tasks are not included in the project Gantt Chart?
 - Discuss why these tasks must be included in the Gantt Chart? Keep your discussion within 100 – 200 words in length.

- The Milestone
- A milestone is a task with zero duration. It needs to be appeared on the Gantt chart as milestone symbol. Milestones are generally used to indicate important dates on the project plan, often key events or goals. The key milestones of this project are not included on the Gantt chart. Gantt charts are invaluable for project managers and their teams. They make it easier to manage a project, and with the tools available for project teams now they are simple to put together and interpret.

8. List the three (3) personnel who signed off on the change request.

- Susan Wills (Program Manager, Massive Eco-Development Corporation).
- Stephen Lyons (Planning Manager, Cascade Peaks Shire Council).
- Kim Nguyen (Director, Awesome Landscapes Pty Ltd).

9. What is the total increase in cost of the project as a result of this change request?

\$17,900.00

10. List five (5) exclusions under Stage 2 – Building Support of the Scope Management Plan.

- a. Monitoring the building site for erosion, subsidence or other environmental issues.
- b. Excavation for incoming utilities (electric cable, water supply, etc.).
- c. Excavation of sewerage and septic system.
- d. Maintaining the plants removed in stage 1.
- e. Any building, decorating or furnishing of the chalets.

11. Review the Project Plan. Does it follow the change management procedure? Explain your reasoning.

Do not exceed 50 words.

All changes to the project charter must be approved in writing with signatures from Susan Wills (Program Manager, Massive) and Stephen Lyons (Council). All changes to the project plan involving scope or materials must be approved by Council.

The Project Plan generally follows the change request procedure by adhering to the following protocols: -

A change request form has been populated by the Project Manager using the template.

The change request does not appear to be signed.

The project plan has been modified to incorporate the change request.

The change register has not been updated so a failure in this instance.

The changes in project documentation have been highlighted in yellow as is the requirement for CR1.

12. Access and review the Gantt Chart version 2. It shows double bars for each task.
- What do the coloured bars  represent?
 - What do the grey bars  represent?
 - Why do the grey and coloured bars do not match up in the Gantt chart?

-  Blue Bar : Progress ;
 Green : Manual Progress
- Grey Bar in the Gantt Chart Legend,  indicates the External Task.
-  As per the Gantt chart the finish date of the phase 1 is 22nd Sept 2020 and the manual summary roll up bar(green) indicates end date as 23rd Sep 2020. But as per the project plan provided, the Phase 1:Pre Building phase to be completed on 21st Sep 2020.This happened due to the mistake in Gantt chat as it is due to the potential scheduling problem in activities 1 & 2. As all other activities are auto scheduled. The actual finish date as per the Gantt chart should be 23rd Sept 2020.

13. Assuming the project runs on schedule, list two (2) tasks that should be in progress if Sam was to visit the site on Monday 22 August.

Do not include the task 'Project Management'.

- Move plants to glasshouse and dispose of
- Remove and store soil

14. If Sam was to visit the site on Thursday, 22 September, he will see that two (2) tasks are in progress, namely:
- Construction of retaining walls.
 - Install and compact soil behind walls.

According to the procedure documents, these two activities cannot happen at the same time. The retaining wall has to be built first. Once construction is completed, the soil needs to be added behind. Why are these two tasks in progress on the same day?

The Gantt Chart does not make sense as the installation and compaction of soil behind walls commences before the retaining walls are complete so physically impossible.

- Construction of retaining walls. 3/9/2020 b - 23/9/2020
- Install and compact soil behind walls. 1/9/2020 – 21/9/2020

15. According to the Gantt Chart, if there is a delay in the completion of Task 57 'Construct stone paving walkway',
- Which tasks, if any, are immediately delayed?
 - Will this delay push out the completion of the project? Why or why not?
 - Discuss how this could affect the resourcing of the project.
 - List one (1) risk that could arise from this issue.

- Activity 59 and 62 predecessors is activity 57. So, these activities have direct impact.
- Yes, Activity 57 is on critical path. If any item on the critical path delayed it will delay the project.
- Additional resources would be required to complete the signage and soil preparation in a faster duration.
- This would negatively affect the budget.

16. What is the total budget for the project expenditure?

The total project budget is \$462,153.00

17. Sam is very concerned about the cash flow of the project.
- What is the problem?
 - What would you suggest be done to rectify the cash flow issue?

- The project cashflow has been calculated from the S curve calculations. These figures are subtracted from the cumulative income the project will receive from its four progress payments from Massive Eco-development Corporation, on the dates when they are expected to be paid based on the invoicing cycle determined. Sam's calculation is not correct since he has overestimated the expenses for each stage.
- b. The cashflow should be recalculated to reflect the actual cost each stage.

18. Discuss whether Awesome Landscapes should seek increased funding from Massive Eco-development Corporation to absorb some or all of these cost increases.

Your discussion must be 200 – 300 words in length.

Guidance:

The change requests have incurred extra expense, yet the funding to be paid by Massive Eco-development Corporation has not changed.

If you believe Awesome Landscapes should seek increase funding from Massive Eco-development Corporation, provide a strong argument for your case. If not, explain your reasoning.

As per project contract between Awesome Landscaping and Massive Eco-development, the funds of \$550,000 + GST will be paid for all landscaping work done in this project. This is a fixed price contract, so the funds provided will be the same regardless of any project extensions, variations in scope, or increases in cost of labour, procurement or purchases.

The potential explanations behind increments could be identified with cost of raw materials being more prominent than planned budget. This is due to cost increases in the supply cost, apparently this would be Awesome Landscapes risk as they would be on a fixed value contract consequently no privilege for additional cost.

In the event that Awesome Landscapes are late on an activity and have affected the critical path they were needed to get additional resources to attempt to recuperate the lost time this would be Awesome Landscapes cost.

If then again, the Client has additional requirements without experiencing the formal change request procedure, at that point Sam needs to set up if so, assemble the validation and afterward raise the change requests reflectively. In this case Sam should then go to the Client for extra funding.

In order to validate a case for requesting Massive Eco-Development for additional funding to absorb the increased costs we need an understanding of what has caused the increased costs. Change in procurement plan with J.P. Digging for more funding to cover extra work.

Additional resourcing from J.P. Digging will prevent any changes to the timeframe. The number of hours required to complete the construction of the retaining walls has increased from 120 to 140 hours. The addition of three extra retaining walls has also resulted in additional time being allocated to the excavation of the incoming utilities and septic system.

19. Complete the following Audit Template with the standards determined in the previous question (Case Study Question 18). This will be given to an internal auditor to audit the financial processes at various points along the project.

Guidance: Complete only the fields highlighted in yellow. Do not complete the 'Assessment' and 'Comment' fields under 'Audit of Management of Project'.

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Quality Audit Template		
Project Name: <i>Cascade Peak Chalets Landscaping Project</i>		
Prepared by: <i>Sam Ng</i>		
Date:		
Project Manager: <i>Sam Ng, Awesome Landscapes</i>		
Project Phase:	Overall Project Status:	
Audit Date:	Audit Number:	Audit Leader:
Audit Team:		
Goal(s) of This Specific Audit: To set up if quality confirmation and quality control measures comparable to Council and Building Regulations have been met.		
Audit of Management of Project:		
1. Did the Cascade Peak Shire Council sign off on all aspects of the development in a timely with no recommendations?	Assessment:	Comment:
2. Were building regulations adhered to for construction of structural retaining walls.	Assessment:	Comment:
3. Were building regulations adhered to for standards for underground services and utilities.	Assessment:	Comment:

4. Was Delivery of granite boulders followed landscaping procedure.	Assessment:	Comment:
5. Were building construction plan adhered to for installation and compaction of soil behind wall.	Assessment:	Comment:
6. Was erosion control and soil stability acceptable.	Assessment:	Comment:
7. Was the preservation of removed vegetation signed off	Assessment:	Comment:
8. Were noxious weeds regulations followed.	Assessment:	Comment:
9. Was landscaping and plant selection on properties adjacent to national parks criteria satisfied.	Assessment:	Comment:
Overall Assessment of Management of Project:		
Recommended Action(s)/Lessons Learned Regarding Management of the Project:		
1. 2. 3.		
Additional Audit Comments:		
1. 2. 3.		
Have you attached additional material(s)?		
	ye	n

Name(s) of attachment(s):	
1.	
2.	
Audit Report Submitted To:	Date:

20. Sam has provided you with the following audit from a previous project (landscaping the new Cascade Peak Shopping Centre). Evaluate the audit report below and answer the following questions:
- What was the cause of the unsatisfactory results?
 - What action would you recommend to prevent the issue coming up again in this project?

a. Communication issues between the PM and Site Supervisor as insufficient data is being given to the Site Supervisor to clarify the undertakings that are in the Gantt Chart with the vital beneficial data required, for example, site plans and specifications. Some delays in commencing tasks have been experienced as the site supervisor has waited for clarification from the project manager. b. Make sure Project Manager prepares detailed plans of work ahead of time of when they are required along with beneficial data and give to Site Supervisor.

Quality Audit Template
Project Name: <i>Cascade Peak Chalets Landscaping Project</i>
Prepared by: <i>Sam Ng</i>
Date: <i>17 August 2015</i>
Project Manager: <i>Sam Ng, Awesome Landscapes</i>

Project Phase: Implementation	Overall Project Status: <i>On schedule</i>	
Audit Date: <i>17 August 2011</i>	Audit Number: <i>26</i>	Audit Leader: <i>Sam Ng</i>
Audit Team: <i>Sam Ng, John Cowley, Ann Deak.</i>		
Goal(s) of This Specific Audit: <i>To evaluate the communication and reporting processes.</i>		
Audit of Management of Project:		
1. Are tasks being communicated to site supervisor in a reasonable amount of time?	Assessment: Satisfactory.	Comment:
2. Are tasks being communicated to site supervisor of sufficient detail?	Assessment: Not satisfactory.	Comment: Tasks only being communicated as per Gantt chart. Site supervisor having to seek clarification regularly on requirements of tasks.
3. Are tasks being communicated by the site supervisor to the team members and contractors done in a reasonable amount of time?	Assessment: Not satisfactory.	Comment: Timing of communication can be improved if there wasn't the need for clarification of the details of the tasks.
4. Are tasks being communicated by the site supervisor to the team members and contractors of sufficient detail?	Assessment: Satisfactory.	Comment:

Overall Assessment of Management of Project:

Tasks being communicated to the supervisor do not have the level of detail required by the site supervisor. In particular detailed plans are not provided with the task briefs. Some delays in commencing tasks have been experienced as the site supervisor has awaited clarification from the project manager.

Recommended Action(s)/Lessons Learned Regarding Management of the Project:

1. Project manager to prepare task briefs in enough time to add the required level of detail.
2. Task briefs are to be supplied with all relevant attachments such as detailed plans.

Additional Audit Comments:

- 1.
- 2.
- 3.

Have you attached additional material(s)?

		ye	x	n
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Audit Report Submitted To: Kim Nguyen**Date:**
24/08/2015

21. The quality plan is very weak on cost management. Write a Cost Management Plan (of 200 – 300 words) for managing the quality of the financial processes while the project is in progress.

Guidance: Your Cost Management Plan must cover the following quality objectives and criteria.

- a. Meeting with contractual requirements.
 - b. Paying invoices on time.
 - c. Ensure invoices are sent out in time.
 - d. Ensuring financial reporting is done on time.
 - e. Include a calendar of when payments are likely to be due.
 - f. Comparison of actual cash flow against projected cash flow.
-

Cost Management Roles and Responsibilities

Project Sponsor

The Project Sponsor for the construction of Cascade Peak Chalets is Susan Wills. Susan Wills is responsible for the approval of the Project's cost management plan. Additionally, Susan Wills is responsible for approving the project's budget and is the approving authority for any additional funding that may be needed.

Project Manager

The Project Manager for the Building Expansion Project is Sam Ng. He is responsible for the day to day management of project funds. Sam is responsible for the development of an internal Work Breakdown Structure (WBS) which covers all work to be performed by the operations group. Sam is authorized to execute the expenditure of project funds as necessary in accordance with the cost management plan and allocated project budget.

Project Team

The project team is responsible for executing assigned work in accordance with the cost management plan.

Cost Management Approach

The project team will finalize the resource and staffing requirements necessary for the successful completion of the project. Based on the labor costs and planned duration of each WBS element, an estimate will be determined.

Phase	Labour	Procurement	Purchase	Total
1. Pre-building.	\$58,438	\$44,050	\$133,880	\$247,768
2. Building Support	\$38,391	\$32,000	\$2,000	\$71,891
3. Planting and Landscaping	\$88,114	\$34,400	\$20,250	\$142,494
TOTAL	\$184,943	\$110,450	\$155,630	\$462,153

The funding for the project is \$550,000.

All project team members and contractors will record their work associated with Project on the appropriate timesheets using the appropriate labor categories and WBS cost accounts. Progress claims will be submitted on time in accordance with the contractual requirements. Invoices will be raised on time in accordance with the contractual requirements.

Payment Schedule 1	Progress Claim due	Invoice Raised	Payment due	Amount exc GST
Commencement Phase 1	27/7/20	1/09/20	29/9/20	\$275,000
Completion Phase 1	22/9/20	1/10/20	29/10/20	\$110,000
Completion Phase 2	5/01/21	1/02/21	1/03/21	\$110,000

Completion Phase 3	10/03/21	1/04/21	29/04/21	\$55,000
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Establish actual costs against budget for each phase of the works.

The payments will be as follows

Expected payment date:	Payment	Proportion	Amount (pre-GST)	Amount (GST incl.)
1 October 2020	Payment 1	50%	\$275,000	\$302,500
29 October 2020	Payment 2	20%	\$110,000	\$121,000
1 March 2021	Payment 3	20%	\$110,000	\$121,000
29 April 2021	Payment 4	10%	\$55,000	\$60,500
	TOTAL	100%	\$550,000	\$605,000

For suppliers' invoices become due for payment in the final week of the stage they are performing the tasks in. Payment is due immediately upon completion.

For purchases the assumption is that all purchases occur during the first week of each stage and will become due for payment 30 days after receipt of invoice.

All invoices should be cost coded and evaluated against the budget by the Project Manager on monthly basis so we can track actual costs against budget and forecast costs to completion.

The project cashflow should be analysed monthly to ensure our projected spend is on target and compared against the budget with actual costs monthly.

A project cashflow s-curve could be produced to track forecast value with actual cost

WORKBOOK CHECKLIST

When you have completed this workbook, please ensure you have completed all parts of it:

- ☒ **Written Questions**
 - ☒ **Part 1 – Project Scope**
 - ☒ **Part 2 – Project Time**
 - ☒ **Part 3 – Project Cost**
 - ☒ **Part 4 – Project Quality**
- ☒ **Case Study**

IMPORTANT REMINDER

Students must achieve a satisfactory result to ALL assessment tasks to be awarded COMPETENT for the unit relevant to this subject.

To award the student competent in the units relevant to this subject, the student must successfully complete all the requirements listed above according to the prescribed benchmarks.

End of Document