SUCCESSION TRAINING

BSB51415 Diploma of Project Management

Constraint Management

Version 1.11 Produced 18 October 2018

Assessment Workbook 2

Version control & document history

Date	Summary of modifications made	Version
5 May 2016	Version 1.0 produced following Training Package update	1.0
22 June 2017	Updated Table of Contents	1.1
18 October 2018	Change to Practical Assessment	1.11

TABLE OF CONTENTS

This is an interactive table of contents. If you are viewing this document in Acrobat, clicking on a heading will transfer you to that page. If you have this document open in Word, you will need to hold down the Control key while clicking for this to work.

TABLE OF CONTENTS **3**

ASSESSMENT WORKBOOK COVERSHEET **4**

WRITTEN QUESTIONS **5**

Part 1 – Project Scope 5

Part 2 – Project Time 17

Part 3 – Project Cost 26

Part 4 – Project Quality 30

CASE STUDY **36**

Instructions to Student 36

Introduction 37

WORKBOOK CHECKLIST **55**

ASSESSMENT WORKBOOK COVERSHEET

WORKBOOK:	Workbook 2
TITLE:	Constraint Management
FIRST AND SURNAME:	BENJAMIN DICKSON
PHONE:	0457 560 160
EMAIL:	bdickson@watpac.com.au

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: **BENJAMIN DICKSON**

Signature: B Dickson

Date: 14/5/20.

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.

Project time, cost and project scope are fully interrelated.

If the timeframe has been shortened this could create scheduling issues with contractors and contribute to poor workmanship and quality due to "rushing". This would affect the project scope in a negative manner.

Costs can increase on a project with if deviation occurs from the agreed scope. This can lead to quality issues if "cost cutting" is required. An example, if the quality of decorating, furnishings etc has been lowered due to a cheaper product being used to absorb costs, then the finished product is not what was originally desired from the client.

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 phases of the project lifecycle as the first level of decomposition, with the product and project deliverables inserted at the second level.
b. Using major deliverables as the first level of decomposition.
c. Using subprojects which may be developed by organizations 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 can occur if an effective change management process in not utilized. If small changes are made once the project commences, they may not be noticed or have an effect. But many small changes can become an uncontrolled growth which could in turn have a major effect on the project. Ensuring you have implemented a concise, definitive and controlled scope this issue can be minimalized.
Sponsor / project owner approval	It is imperative that any changes made to the scope have been drafted by the project manager and submitted to the sponsor/project owner for approval. If the sponsor/project owner does not approve the changes, then there is no guarantee that payment will be made for the changes. If the project sponsor/owner doesn't approve required changes in a timely manner, then this can then have an effect on the scope regarding time and quality. Less time can lead to a rushed job, which can lead to poor quality.
Project team accountability	The project team must be fully aware, understand and agree to the scope presented. By using the scope, the team is made aware of time constraints and clearly defines a timeframe of milestones and targets which need to be achieved.

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

Do not exceed 150 words.

Scope management is an essential part of any project.

Without a scope, the project has limited structure or parameters. An effective scope outlines goals within a project and how those goals will be executed in an efficient, cost effect, quality assured and timely manner. The project scope acts as governing tool, regarding requirements and controls of what can be added and/or removed from the commencement of the project through to completion of the project.

Without a well-structured and established scope, which has been agreed upon by all parties involved, the project can end up being an expensive, time consuming project which in turn can affect the quality of the finished project.

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	Facilitated workshops.
Define scope	Expert judgement.
Create WBS	Decomposition.
Verify scope	Inspection.
Control scope	Variance analysis.

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	Know why the project was initiated.
Scope Management	Take all requirements and convert them into work packages that will soon be deliverables.
Time Management	Scheduling the project.
Cost Management	Develop the cost baseline.
Quality Management	Define what good quality means in the project from the stakeholders.

Part 2 – Project Time

1. 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	The earliest time at which the task can start, given that any predecessor tasks must be completed first.
EF	The earliest start time for the task, plus the time required to complete the task.
LF	The latest time at which the task can be completed without delaying the project.
LS	The latest finish time minus the time required to complete the task.

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 mange 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 useful tool to assist in the planning and scheduling of a project. A Gantt Chart helps you assess the resources required, the duration of the project and assists in the planning of the order in which you complete tasks.

b. -Start and End date of the project.
-Key milestones within the project.
-Shows relationships between tasks.

c. -The area of the Gantt Chart is very large and often difficult to print.
-The progress of each chart is only useful and accurate as the information the project manager puts into it. If the project manager incorrectly guesses the duration of a task along the critical path, then the entire duration of the project could be blown out.
-The progress of each task is very subjective so a project manager can be tempted to exaggerate the progress of a task to make the Gantt chart look better.

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. Critical Path Method is a step by step technique which identifies activities. It assists in breaking down the project into numerous manageable tasks. These tasks are displayed in a flow chart, and then calculates the duration of the project based on estimated durations for each task.

b. -Activities on the critical path.
-Critical elements in the project.
-Parameters of each task: Earliest Start, earliest Finish, Latest Start, Latest Finish.

c. The Critical Path method does have its limitations. Depending on the size of the project the Critical Path method be complicated and confusing. Estimation of time completion is not always clear or effective and can be subject to educated opinions which is not always fool proof. Finally the Critical Path method does not incorporate all facets of the project such as allocation of personnel to task or 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	This process approximates the monetary input required to complete the project. Estimates are based on the information known at a given point in time. It identifies and considers costing alternatives to commence and complete the project.
Determine budget	Determining the budget is a breakdown of the project into works packages. Estimated cost are allocated to each individual works package.
Control cost	Controlling the cost of a project helps monitor the budget and expenditure of the project. It ensures that the project is not overspending. Controlling costs ensure money is being spent where it has been originally allocated.

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 asses and measure project performance and progress.

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. Background demonstrates that Bigger than Big have established and utilize project management procedures and templates. It gives a generic description of the expectations and prerequisites of Bigger than Bigs projects.
   Purpose section of the Project Management Policy demonstrates the benchmark or guidelines of how Bigger than Big's operate their projects. It explains that regardless how big, small, simple or complex the project is the guidelines established can be effective and utilized.
   Scope this demonstrates the parameters in which all projects conducted by Bigger than Big must be run. It states projects must operate in the context of policies and procedures of the company.

b. Bigger than Big explains within the sub sections titled Purpose and Scope that as a company they have developed established processes and policies which apply to the life of projects. It demonstrates that their projects have a management structure which should be adhered to.

c. Bigger than Big have developed phases within their policy. It explains in greater detail the core components on how their projects are run. Pre-Initiate phase discusses what the project endeavors to achieve. Initiate Phase is the early stages of the preparation of a project, Plan Phase explains in full and outlines how the project will be conducted from commencement to completion. Implementation Phase outlines all processes, procedures and activities which will be required to deliver a successful project. Finally, the Closing Phase completes and finalizes the project.

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	If a customer is not satisfied with the "end product" then essentially the project has failed to address the customers expectations. Poor quality, failure to meet expectations or poor project management are some of the reason for the customer not being satisfied. The customer is always right and pleasing the customer is a critical activity within Project Management.
Prevention over inspection	Identifying and preventing a defect or mistake in the early stages of project proves to more cost effective then addressing the defect, mistake or issue when the project or product is finished.
Continuous improvement	Is an ongoing effort to improve products, materials, the ways things are completed, conducted or executed. Previous experience and lessons learnt are ways in which continuous improvement can be implemented.

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

   Do not exceed 100 words.

Quality Assurance is process orientated. Quality assurance is facilitated by adhering to or adopting standards and techniques such as review, training etc. Quality assurance can assist in the prevention of defects.
Quality Control is product orientated and primarily an inspection function. Products or items specified are tested to ensure a specific standard has been achieved. This is tested against a specification.

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	This ensures the correct people that are allocated for the project, have the right qualifications and experience to deliver a project to the standard which is required. It is ensuring the right person is person is picked for the right job. For example, you would not engage a bricklayer to erect structural steel.
Process standards	Process standards are standards for delivering the project or task. An example if a door has been hung it is tested to ensure it opens smoothly.
Product / service standards	These are specific requirements by which a product or service must comply with. Australian Standards is one measuring tool which is commonly used.

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.
A	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. Ensuring all organizational quality requirements are met for the delivery of the project.
e. 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	Is a set of management techniques that are implemented with the intention to improve processes by identifying and removing the causes of an error or defect.
Lean Six Sigma	Is reliant on a combined project team effort. Improvement with performance is achieved by systematically remove waste, combining lean manufacturing/lean enterprise and Six Stigma to eliminate the eight kinds of waste. The eight kinds of waste are broken down into Time, Inventory, Motion, Waiting, Overproduction, Over-processing, Defects and Skills.
Total Quality Management	With continuous feedback , this structure endeavors to improve the quality of products and services.

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, including three additional retaining walls as per updated plan.

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

Scope	Strict Council requirements for environmentally sensitive areas. Natural environment must be carefully preserved.
Time	An allocation of 9 months for completion has been set.
Cost	A fixed budget of $550,00 + GST has been set.
Quality	Due to the nature of the development i.e occurring in an environmentally sensitive area near a national park, far stricter standards of building are required and adhered to.

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.
   a. What is the change in scope?
   b. How does this change in scope impact the overall duration of the project?
   c. How does this change in scope impact the quality aspect of the project?

a. Addition of three new retaining walls and services to additional units.
b. The overall duration of the project has been extended by 1 week. Start date of the project has been brought back one week. No other timeframes have changed.
c. This change in scope does not impact the quality aspect of the project.

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.

Construction of access roads costings has been affected due to additional access requirements that are needed to construct the additional retaining walls. The additional cost has increased due to additional gravels needed for road installation.

Additional boulders and additional soil are required due to the additional retaining walls. J.P Digging require extra funding to cover the increase of hours required to install the extra retaining walls. Therefore J.P Digging have engaged extra staff to complete these walls to prevent any changes to the timeframe.

Project Management and Project Support Staff have increased due to the extra time and effort required to manage the construction of the additional retaining walls.

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?

Project Manager Sam Ng. As the Project Manager it is his responsibility.

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

a. Change Request 1 has not been added to the Gantt Chart.
b. All change requests, additional time and resources must show as amendments within the Gantt Chart. This procedure is outlined within the Project Plan page 11 of 143, 1.3 Change Control note 5 "all changes need to be reflected in project documentation". This includes the Gantt Chart. These changes must be made and made visible to all stakeholders. If these changes do not occur and are not reflected, effective project management and contract management cannot occur, and the client will not be handed over the correct revised requirements.

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

a. Susan Wills (Program Manager, Massive Eco-development)
b. Stephen Lyons (Planning Manager, Cascade Peak Shire Council)
c. Kim Ngyuen (Director, Awesome landscapes Pty Ltd)

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

As reflected within Appendix 6-Summary Costing per Phase page 48 of 143 the total cost increase is $17,900.00.

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

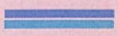
a. Monitoring and maintaining partially and fully constructed buildings.
b. Monitoring and maintaining the main road.
c. Onsite security (this is provided by the chalet development project).
d. Any building, decorating, or furnishing of the chalets.
e. Installation of utilities.

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

Do not exceed 50 words.

One item has not been followed within the change management procedure.

As per 1.3 Change Control page 11 of 143, Item 6 states "The project plan must include all change request, along with an up to date change register." It was noted that the change register Appendix 37 had not been completed.

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

a. The colored bars represent current progress.
b. The grey bars represent the project program established at the commencement of the project.
c. The grey and colored bars do not match up due to the additional works (Change Request 1) and subsequent delays to the program.

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

    Do not include the task 'Project Management'.

a. Moving plants to glasshouse. Dispose of weeds. (Start 16/08/16, Finish 23/08/16)
b. Delivery of granite boulders. (Start 18/08/16, Finish 25/08/16)

14. If Sam was to visit the site on Thursday, 22 September, he will see that two (2) tasks are in progress, namely:
    a. Construction of retaining walls.
    b. 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?

Back filling of a retaining can commences on a completed retaining wall prior to the last retaining wall being complete.

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

a. 1)Erect signs.
   2)Landscape around signs.
   3)Soil Preparation.
   4)Add boulders
   5)Remove weeds.
   6)Plant plants from greenhouse.
   7)Purchase additional plants.
   8)Plant additional plants.
   9)Remove greenhouses.

b. Yes, because it is the Critical Path.

c. Extra staffing requirements.

d. Extra costings associating with the supply of extra staff.

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

Total revised budget is $462,153.

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

a. Prior to the initial project payment being cleared in the bank Awesome Landscape's budget will be running at a negative.

b. Request more funds to be released from Massive Eco-developments through the change process outlined page 11 of 143 Project Plan, 1.3 Change Control.

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.

Awesome Landscapes should seek increased funding from Massive Eco-development Corporation to absorb all the cost increases associated with the addition of three new retaining walls.

Massive Eco-developments as the Project Sponsor requested, agreed, and approved the altering of the original agreed deliverables. The request was done as per the agreed formal procedure within the Project Plan, page 11 of 143, 1.3 Change Control. All relevant stakeholders had signed off on this request. This request is outside the agreed scope of works and has an impact on time and cost of the project and in turn affects Awesome Landscapes. Extra staffing requirements will be required to complete the extra three retaining walls which will incur cost that have not been previously budgeted for. Extra raw resources will have to be sourced and that has also not been previously allowed for within the original budget.

If extra funding is not approved, as previously discussed in Question 17, then Awesome Landscaping's budget will run at a negative and this is not efficient project management. Extra funding will also assist in maintaining good relationships between the two parties.

Massive Eco-developments requested this change and will be the people financially benefiting from this change. This change has not occurred because of any wrongdoing or poor management by Awesome Landscapes. Massive Eco-development should be obligated to provide extra funding to Awesome Landscapes for the three additional retaining walls.

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'.

Quality Audit Template		
Project Name: ***Cascade Peak Chalets Landscaping Project***		
Prepared by: Ben Dickson		
Date:		
Project Manager: ***Sam Ng, Awesome Landscapes***		
Project Phase:	**Overall Project Status:**	
Audit Date:	**Audit Number:**	**Audit Leader:**
Audit Team:		
Goal(s) of This Specific Audit: To evaluate the effectiveness of Awesome Landscapes financial processes.		
Audit of Management of Project:		
1. Are Change Requests being completed as outlined within the Project Plan, 1.3 Change Control?	**Assessment:**	**Comment:**

2. Are payments being made from Massive Eco-development to Awesome landscapes as per the agreed invoicing cycle?	**Assessment:**	**Comment:**
3. Are contractors payments made on the final week of each stage of the project?	**Assessment:**	**Comment:**
4. Are payments made to contractors immediately upon the completion of the work done for the stage?	**Assessment:**	**Comment:**
5. Is the monthly progress report being made available to all stakeholders within the timeframe agreed upon?	**Assessment:**	**Comment:**
6. Does the monthly report contain all the relevant information required?	**Assessment:**	**Comment:**
7.	**Assessment:**	**Comment:**
8.	**Assessment:**	**Comment:**
9.	**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:
    a. What was the cause of the unsatisfactory results?
    b. What action would you recommend to prevent the issue coming up again in this project?

a. More detailed communication is required. Timing of the communication also needs to be addressed.

b. Sam Ng to implement Project Team Meetings with all relevant parties to attend. This will provide a forum for discussions, clarification of details and requirements. Tasks could be prepared for in advance and everyone could then be on "the same page".

Quality Audit Template
Project Name: ***Cascade Peak Chalets Landscaping Project***
Prepared by: ***Sam Ng***

Date: *17 August 2015*		
Project Manager: *Sam Ng, Awesome Landscapes*		
Project Phase: *Implementation*	**Overall Project Status:** *On schedule*	
Audit Date: *17 August 2011*	**Audit Number:** *26*	**Audit Leader:** *Sam Ng*
Audit Team: *Sam Ng, John Cowley, Ann Deak.*		
Goal(s) of This Specific Audit: *To evaluate the communication and reporting processes.*		
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
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.

Massive Eco-developments Corporation is paying a fixed sum of $550,000. The revised project budget is $462,153. Awesome landscapes have a cash reserve to cope with potential to expend up to $224,724, this can be utilised prior to the initial project payment being cleared by the bank. Timeframes for payments from Massive Eco-developments to Awesome Landscapes are as follows (dates have been generated from the Gantt Chart):

- Payment 1: 50% initial payment ($302,500 GST Incl.) at the commencement of Phase 1. Commencement of Phase 1 as per Gantt Chart is 27/7/16.
- Payment 2: 20% progress payment ($121,00 GST Incl.) upon completion of all Phase 1 deliverables and the delivery of the progress report. Date as per Gantt Chart is 15/9/16.
- Payment 3: 20% progress payment ($121,00 GST Incl.) upon completion of all Phase 2 deliverables and delivery of project progress report. Date as per Gantt Chart is 29/12/16.
- Payment 4: 10% final payment ($60,500 GST Incl.) upon completion of all Phase 3 deliverables and delivery of the final project report.

All contract administration will be conducted by Awesome Landscapes project administrator and he will report to Project Manager Sam Ng. His role consists of ensuring deliverables are being met by comparing audit reports with contract schedules and advising the project manager and the payroll officer of invoices to pay.

Awesome Landscaping will raise an invoice on the first working day of the month, following the due date of each progress payment. Dates are as follows:

- Payment 1: Date invoiced raised 28/7/16.
- Payment 2: Date invoiced raised 16/9/16.
- Payment 3: Date invoiced raised 30/12/16.
- Payment 4: Date invoiced raised 11/3/17.

Employees of Awesome Landscapes are paid on a fortnightly basis. Suppliers and contractor payments will be made on the final week of each stage of the project they are performing the tasks in. Payments made upon completion of the work done for the stage. Purchases must be calculated to occur during the first week of each stage of the project. All these aspects are used to calculate the project cash flow. The project administrator and project manager must ensure that that actual cash flow does not exceed the projected cashflow for the duration of the project. This ensure the project does not "creep".

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