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Project Management for the Creation of Organisational Value:

A workbook to augment courses in
project management

An illustrative business case
Short answer questions with representative answers

Version A: Textbook companion

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Project Management for the Creation of Organisational Value:

A workbook

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Preface

This workbook serves as a companion to the project management textbook entitled “Project Management for the Creation of Organisational Value”, published by Springer (Zwikaël and Smyrk, 2011). It is intended to illustrate project management concepts by offering a complete Business Case and a range of exercises—all based on the approach presented in the book.

Reference

Zwikaël, O., Smyrk, J. R. (2011). Project Management for the Creation of Organisational Value. Springer-Verlag, London, UK. ISBN 978-1-84996-515-6 (print book); ISBN 978-1-84996-516-3 (ebook).

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Chapter 1: Introduction

1.1. The workbook

This workbook is intended to provide supporting material for students and lecturers involved in project management courses that use Zwikael and Smyrk (2011) as a textbook.

The workbook covers in turn: a case study, an illustrative Business case, a commentary on that document and exercises with answers.

1.2. Guidance to the student

The workbook should be used after completing a review of the book—or as indicated by the lecturer. In a series of study sessions (of about one hour each), the student should:

- Become familiar with the case study context (Ch. 2).
- Explore the Business case (Ch. 3).
- Progressively attempt the questions in Ch. 4 Section A, check on the correctness of those attempts using the answers appearing in Ch. 4 Section B, and reconcile each answer with the corresponding section of the textbook.

Multiple sessions will be required to address each of these chapters.

Students may find it useful to scan the question pages and use prints of those scans to write on—rather than the originals provided here.

Chapter 2: The case study context

2.1. Purpose of the case study

The Project BuyRite case study is provided to show what a comprehensive Business Case looks like. The structure and content of that document accords with the approach discussed in the book (Zwikaël and Smyrk, 2011).

2.2. Overview of the case study

The Project BuyRite case study is based on a real-life project undertaken by a large international building supplies corporation. That corporation is represented here as ICO (International Concrete Operations). Project BuyRite was an initiative undertaken by ICO to re-engineer its procurement processes.

2.3. International Concrete Operations (ICO): overview of the company

International Concrete Operations (ICO) is a large, Hong Kong-based multinational building corporation. ICO was set up in the early 60s as Platt's Quarry—a small supplier of crushed rock to a regional Australian city. Under the guidance of its visionary founder (Charles Woodstock), Platt's acquired one of its rivals and its two largest vendors (a sand mining company and a cement manufacturer). Over the following 30 years Platt's undertook an aggressive expansion programme by acquiring numerous other operators in the building products industry—growing steadily to become ICO—a significant supplier of building products across 25 countries. The Company's operations now include: quarries, cement factories, concrete plants, additive producers, dredging fleets and sand mines (not all of which are represented in each country).

Some years ago, ICO was restructured into country-based business units.

While Woodstock was a gifted entrepreneur, he had little time for (what he termed) “paperwork”. Consequently, ICO tends to lag its rivals in management and innovation capabilities. Weaknesses in a number of areas have left the company exposed to smaller, faster and more agile rivals.

The business processes in existence across the Company are, in general, slightly modified versions of those used by the various original operators before they were taken over. Procurement, for example, is approached differently—not only by each country—but also by various operations within each country. While some of this difference is necessary (to deal, for example, with the peculiarities of local business practice), much of it appears to be “pointless variation”.

The Board had become increasingly concerned about ICO's vulnerabilities, especially in areas where growth has outstripped the capabilities of its management skill pool. To address these concerns, a leading consultancy, Braye & Rawson was commissioned to lead a significant international benchmarking exercise to determine how well ICO performed in a number of core processes, particularly procurement. The report to emerge from this study (*ICO as leader of the international concrete industry*) not only confirmed what the Board had suspected (that ICO was in the bottom quartile for all processes) but also that:

1. The Company has an unenviable reputation amongst major suppliers of being a very poor payer, with 50% of all invoices still outstanding after 90 days. This has had two effects: (1) reliable

suppliers are pricing their offers to ICO at a premium and (2) ICO is unable to take advantage of early-payment rebates.

2. Purchasing policies in different business units over many years have led to the growth of large and costly autonomous purchasing functions that have not kept pace with modern procurement thinking. Because of the lack of coordination between these departments, few opportunities for volume discounts are available to ICO. Analysis of current procurement practice revealed that that the averages cost of placing an order with a supplier was \$190.
3. Procurement processes have “grown like topsy”, largely the result of maintaining local practice as each new company was acquired. These processes are inconsistent, undocumented, inefficient and slow, forcing most business units to maintain unacceptably large inventories to deal with frequent outages.
4. The report also indicated that, without corrective action, within three years. 50% of supplier invoices would be outstanding after 95 days and the average cost of placing an order would exceed \$200.

Braye & Rawson were then asked to identify and review optional strategies to deal with the issue. They considered three broad approaches:

- A. Outsource all procurement-related processes.
- B. Re-engineer procurement practices and leave them decentralised (within each local operation)
- C. Re-engineer procurement practices and centralise them to the business-unit (i.e. country) level.

Their analysis led to a recommendation that option #C be implemented.

To progress the preferred option, an independent adviser, Rowland Johns, was engaged to develop a strategy to resolve the issues revealed by the benchmarking study. Johns proposed a global initiative code-named International Procurement Enhancement Programme (IPEP). Because of the risks involved in conducting projects simultaneously across all 25 countries, the adviser recommended that **one** business unit be commissioned to undertake a *lead IPEP project*. The lead project would have two objectives: (1) to resolve the procurement issues identified during the benchmarking exercise in the selected business unit and (2) to create a core generic best-practice procurement process that could then be adapted in secondary projects run in each of the other countries. As proposed, the secondary exercises could be initiated before the lead project was complete, but delayed sufficiently to benefit from it. One of the immediate implications of this strategy, is that the lead project would somehow have to be coordinated with the exercises being undertaken internationally

The board decided that the Australian operation was to act as lead business unit by undertaking *Project BuyRite*.

2.4. Project BuyRite

Charles Edwards, the Australian CEO, moved quickly in response to the Board's decision. He had only recently taken up his position at ICO after a very successful career as Chief Operations Officer (COO) with the local subsidiary of a large European food/personal products manufacturer. There, amongst other things, he had implemented a new outcomes-based Project Management Framework, which had then been employed with considerable success in a five-year programme of major business development projects.

Amongst the CEO's early moves, he created a new position—National Procurement Manager, and appointed Nancy Palmer who had been Purchasing Manager in ICO's Australia concrete division to fill the role. Nancy Palmer then secured the services of an experienced business process improvement project specialist (Paul Myer) to serve as BuyRite project manager. Paul Myer had just completed a similar project for an engineering firm, and has brought with him the project administrator from that exercise, Pamela Atkinson, to fill a similar role in BuyRite.

Edwards was keen to approach BuyRite in a thoroughly professional manner and directed that a robust, reliable Business Case be prepared so that the local Executive Management Committee (EMC) could make a confident funding decision.

The background to the case study makes it clear that reduced procurement cost is a desired outcome. Furthermore, because a threshold level of reduction has been set, it becomes a *target outcome* (although others have also been adopted).

Early discussion of Project BuyRite's outcomes suggested the following *outputs* (deliverables):

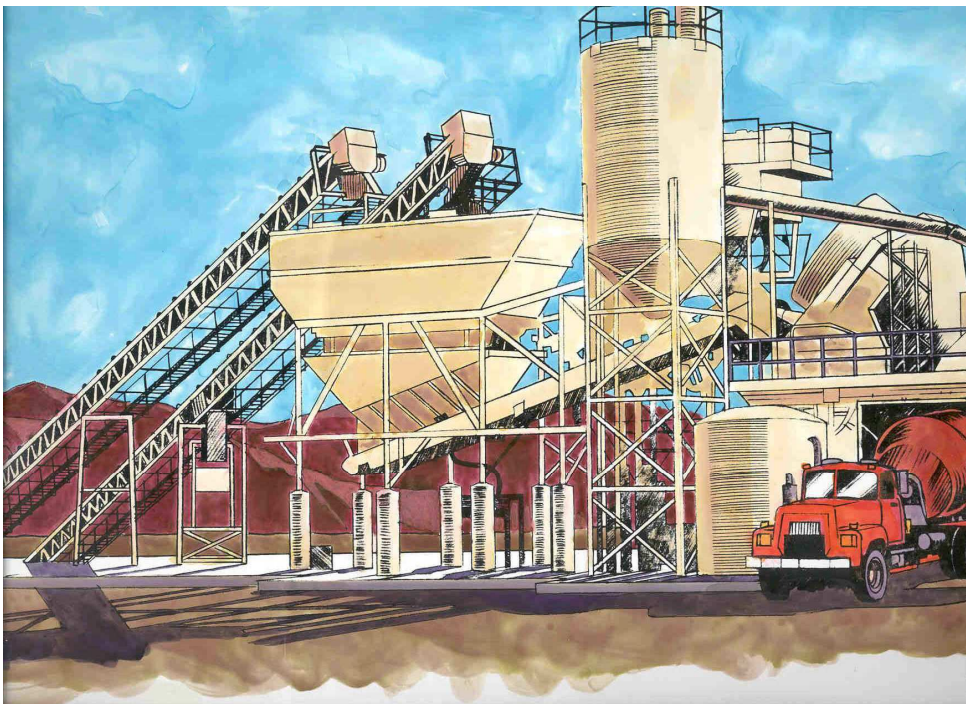
- A new procurement process (in the form of a flowchart-based model)
- An enabling software system
- A panel of preferred suppliers
- A new organisational model for the Procurement Department
- A new office for the Procurement Department
- A performance bonus for Senior procurement staff

Not all of these were accepted in the final version of the Business Case (presented in the next Chapter).

Chapter 3: Project BuyRite Business Case

International Concrete Operations ICO (Australia)

A Business Case in Support of Project BuyRite



1. Introduction

1.1. Purpose of document

This Business Case seeks funding from the ICO Executive Management Committee to undertake Project BuyRite, an initiative to improve the Company's approach to procurement. The document also confirms the project's key parameters and serves as a brief for key stakeholders.

1.2. Overview of the project

Project BuyRite seeks to re-engineer procurement practice and support this with appropriate technologies, staff training and organisational change.

1.3. Summary of project attractiveness

Project BuyRite is a very high yield, high cost, medium risk initiative.

2. Business context

2.1. Background

The recent international benchmarking exercise revealed serious weaknesses in our current procurement arrangements. The Board has mandated a programme of business-unit-level initiatives to address this issue.

The ICO Australian business was selected to undertake a *lead* project. When complete—the core outputs from this exercise will be made available to all other operations—as a starting point for their local initiatives.

This business case covers just the lead project.

2.2. Rationale and Strategic fit

Project BuyRite gives effect to ICO's recently-approved global development strategy, as outlined in the document "*ICO as leader of the international concrete industry*". That paper identified procurement, manufacturing and order fulfilment as our three top-priority business initiatives for the next 2 years.

2.3. Organisational impact

Project BuyRite will have a significant impact on day-to-day operations because of the need to take some of our best staff out of their business units to work on the project for periods of between one and two years.

The resulting operational staffing shortfall will be addressed through the appointment of contractors. Our analysis indicates that this will cause procurement costs to rise somewhat over the course of the project and that there may also be some slow-down in sales growth as the project nears completion (due to an inevitable decline in procurement performance).

2.4. Scenario analysis (2NY Map)

Two performance measures were identified for attention in Project BuyRite:

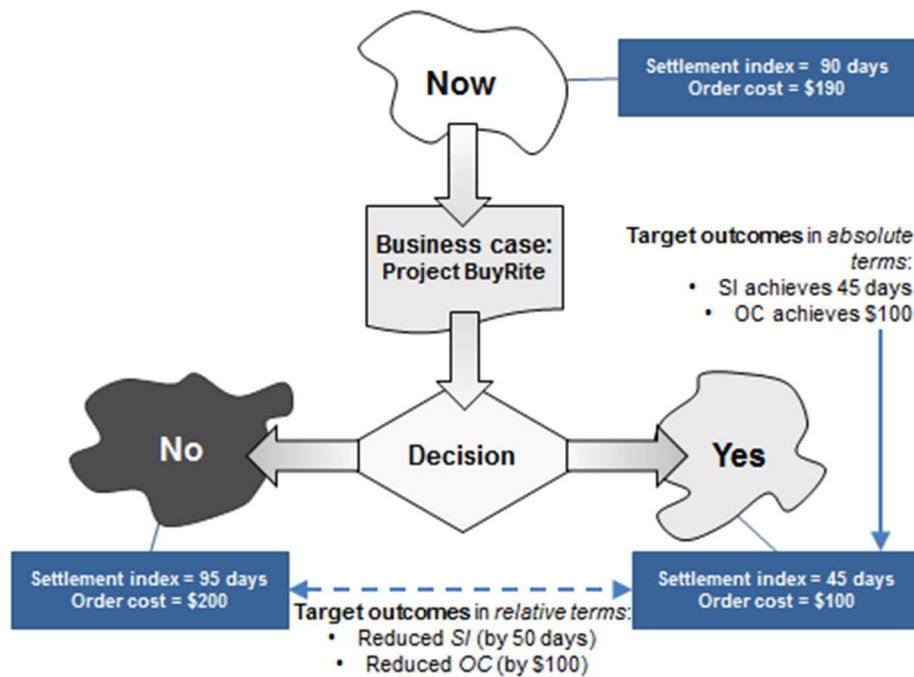
- *Settlement index (SI)*: Average days outstanding for supplier invoices.
- *Order costs (OC)*: Average costs of placing an order on a supplier.

The "Now" scenario. The recent international benchmarking exercise revealed that the Company's current approach to procurement is characterised by two performance measures that the Board has judged as unacceptable: Procurement order costs and settlement of supplier invoices were of particular concern. Poor procurement practice was also causing frequent extended stockouts—forcing business units to maintain extremely high levels of inventory.

The "No" scenario. If no action is taken to address this issue, it is anticipated that the situation will deteriorate because of the rapid growth of all of the larger business units.

The “Yes” scenario. As envisaged here, Project BuyRite will address the two underlying root causes of the problem—by re-engineering the entire procurement process. The exercise will generate significant reductions in procurement costs and settlement times of supplier invoices.

The values for these measures for each of the three scenarios are summarised in the following 2NY map—where they are expressed in both absolute and relative terms.



2.5. Analysis of options

The consultants who undertook the initial benchmarking exercise were later engaged to consider some optional strategies that would address the procurement issues they had identified. They identified three:

- A. Outsource all procurement-related processes.
- B. Re-engineer procurement practices and leave them decentralised (within each local operation)
- C. Re-engineer procurement practices and centralise them to the business-unit (i.e. country) level.

The recommended option is #C.

2.6. Related projects and programmes

Projects dependent on BuyRite. A business case is to be prepared next year for Project BatchRite (which will re-engineer our manufacturing processes). Project BatchRite is heavily dependent on Project BuyRite in that the redesign of our inbound logistics will be constrained by what is done with procurement.

It is proposed to establish an Inbound Logistics Working Party (ILWP) as a reference group in the Project BuyRite governance model. All procurement decisions that impact manufacturing will be referred to this reference group for review. If, as planned, Project BatchRite is approved before BuyRite finishes, then the ILWP will also serve as a reference group for Project BatchRite.

Projects interdependent with BuyRite. The Global Finance Office has just started work on “FINAC” (a project to improve accounting practice across the Company) and, as part of that exercise, replace the existing finance and accounting software system. It is proposed to establish an Accounting Operations Working Party (AOWP) as a reference group in the Project BuyRite governance model. All procurement decisions that impact accounting will be referred to this group for review.

Projects on which BuyRite depends. A decision was taken 12 months ago to outsource the bulk of IT services to Technical Infrastructure Management Services Inc. (TIMS). The plan for this exercise has the transfer of IT operations in Australia taking place about the same time as BuyRite will be implemented. It is proposed that an adviser be appointed from BuyRite to the outsourcing project to ensure that the transfer of Procurement’s infrastructure to TIMS is timed appropriately.

2.7. Assumptions and constraints

Assumptions. It is assumed that no major acquisitions will be made during Project BuyRite. If that happened, it may prove necessary to slow the project so that senior Procurement staff could be made available to support integration of the new business unit into ICO.

Constraints. A subsidiary of ICO will move out of the global HQ building in four months. That will provide adequate long-term accommodation for the BuyRite team. Until then they will have to arrange temporary offices elsewhere.

3. Project Definition

3.1. Statement of scope

Project objective. To achieve world class performance in ICO’s procurement operations.

List of target outcomes

- Reduced procurement costs
- Reduced payment times to suppliers

List of committed outputs

- A new procurement process (as a model)
- New procurement policy and procedures manual
- A restructured procurement unit
- Enabling applications systems and new technical infrastructure
- A panel of preferred suppliers
- Programmes of accredited professional development for staff

3.2. Outcomes definition

Attribute	Target outcomes	
	Reduced procurement costs	Reduced payment times to suppliers
Target outcome title		
Description	Expressed as the average cost per purchase order issued	Expressed as the average time to settle a clean supplier invoice
Measure	Dollars (per purchase order)	Days (to settle)
Target value	\$100	45 days

Table continued over page

Source/method	Calculated over a quarter as the total costs (including consumables and labour) of procurement divided by the count of purchase orders issued over the same period	Calculated over a quarter as the average time interval from receipt of a supplier invoice to its settlement
Target date for achievement	One year from project funding	One year from project funding
Person accountable for realising the target outcome	Nancy Palmer, National Procurement Manager	Nancy Palmer, National Procurement Manager

3.3. Outputs definition

Because the Utilisation Map indicated that some proposed outputs would not contribute to the target outcomes, they were not included in the agreed scoping statement. Each output identified in the scoping statement is defined here by listing its fitness-for-purpose features. [In this illustrative business case, only one output is defined in this way].

New procurement policy and procedures manual:

- Available on-line.
- Structured as hypertext (for ease of navigation).
- Include comprehensive details of all new procurement processes.
- Present as screen-based workflow applications (interactive process models).
- Subject to a quarterly review/revision process.
- Covered in training and development programme for Procurement staff.
- Include guidelines for vendor management.
- Reflect ICO's new probity guidelines

3.4. Utilisation map (UM)

Committed outputs	Target outcomes		Project customers
	Reduced procurement costs	Reduced payment times to suppliers	
A new procurement process (as a model)	✓	✓	<ul style="list-style-type: none"> • Procurement staff • Suppliers
New procurement policy and procedures manual	✓	✓	<ul style="list-style-type: none"> • Procurement staff
A restructured procurement unit	✓		<ul style="list-style-type: none"> • Procurement staff
Enabling applications systems and new technical infrastructure	✓	✓	<ul style="list-style-type: none"> • Procurement staff • Suppliers
A panel of preferred suppliers	✓	✓	<ul style="list-style-type: none"> • Procurement staff
Programmes of accredited professional development for staff	✓	✓	<ul style="list-style-type: none"> • Procurement staff

3.5. Utilisation storyboards

Each output identified in the Utilisation map has an accompanying storyboard—showing step-by-step how the output is utilised by project customers. [In this illustrative business case, only one storyboard is shown].

Output	A panel of preferred suppliers	
Step #	Activity	Implied fitness-for-purpose features
1	Procurement officer finds suitable supplier	Panellists' details to be held in a database
2	Procurement officer checks price and availability of item	Panellists to maintain a list of commonly ordered items—accessible to ICO staff
3	Procurement officer places order electronically	Panellists' sales systems to accept ICO order automatically.
4	Supplier confirms acceptance of order	Panellists to have access to ICO's purchase order system.
5	Procurement officer monitors progress of order	Panellists' sales systems to advise ICO of order status automatically every 5 days.

3.6 Excluded outputs

Early work on the business case identified two candidate outputs:

- A performance bonus scheme for procurement staff
- A new office for the national procurement unit.

For a number of reasons both were subsequently excluded from the scope of BuyRite—the most important of which were:

- ICO is currently reviewing its global remuneration strategy and so the establishment of a performance bonus for Procurement staff may compromise some of the options available to the Company
- Relocation of Procurement staff into an existing office would be less costly—and equally acceptable to staff.

3.7. Undesirable outcomes

It is anticipated that Procurement staff will find aspects of project BuyRite disruptive, and the resulting changes to the procurement environment challenging. This could lower staff morale and even lead to resignations. Two steps are being taken to manage this:

- The project governance model for the project recognises a role for a Procurement staff reference group.
- The training programme in the new processes will acknowledge this situation—and address it.

3.8. Financial appraisal

A complete analysis of the cash flow associated with Project BuyRite appears as an Appendix to this document. [not provided in this particular example]. This indicates an NPV of \$2.5M.

4. Stakeholder analysis

A full stakeholder register would normally be shown here, but for this example we summarise the details that apply to just one stakeholder, the Procurement staff. [These details are displayed vertically here, whereas a typical stakeholder register would show them as a row].

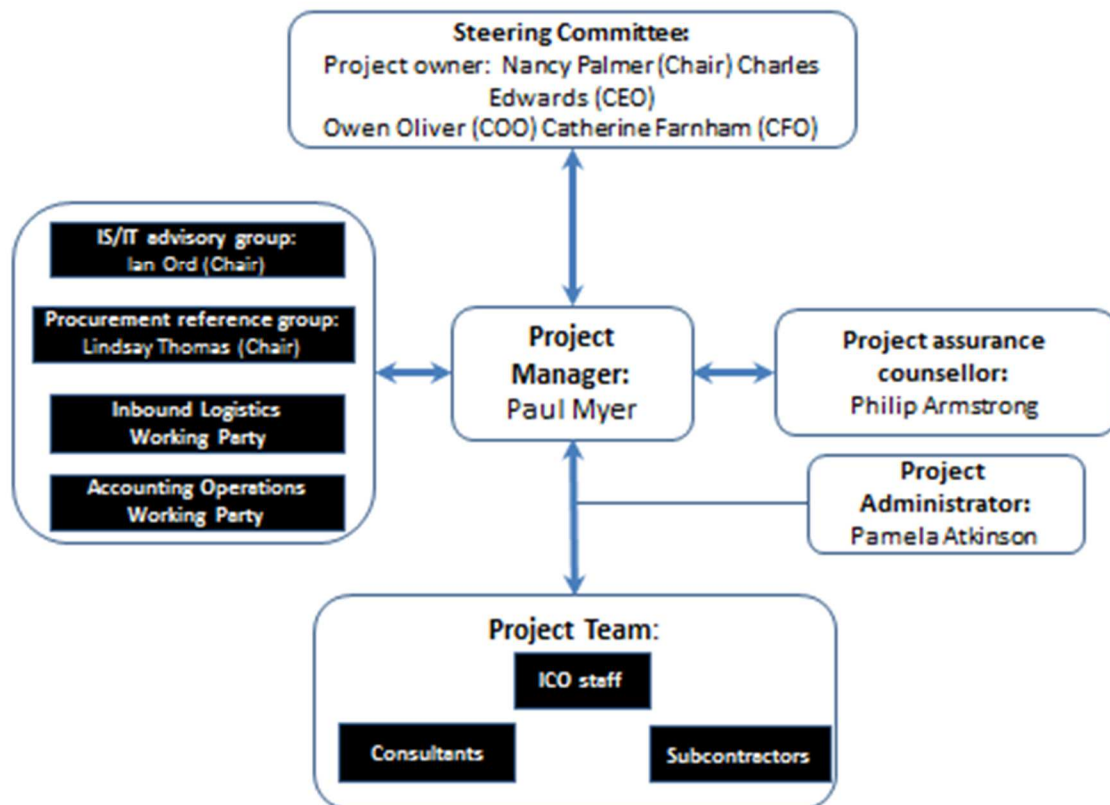
Entity name	Current procurement staff
Potential effects of entity on project?	Their input to the re-engineering of ICO's procurement processes is critical to project success
Potential effects of project on entity?	They are the subject of a significant change programme
Classes of spontaneous stakeholding	Impactees
Issues arising from stakeholding	There will be varying degrees of support for, and resistance to, change
Objectives of engagement	To gain full trust and wholehearted support
Engagement strategy	
1. Include in project communications plan.	Include in the communications plan for project BuyRite (conduct quarterly review workshops, send copies project newsletter and keep updated on project website)
2 Make the subject of a programme of special engagement.	Not applicable
3 Assign a role in the PGM (Project Governance Model).	Include in Project Governance (as members of a Reference Group)

5. Project Governance

[This section would normally include not only the project governance model as a diagram (like that shown in Fig. 5.7), but also the Terms of Reference for all entities identified in that model. Here we show only the Charter for the Steering Committee]

5.1. The Project Governance Model

Add: Fig. 5.7 The project governance model of project BuyRite



5.2. The Steering Committee

Name of PGM role.

Project BuyRite Steering Committee (SC).

Objective of role.

The Steering committee is to guide the project towards successful realisation of the project's two baseline documents (the Modified business case and the Project Plan).

Outputs from role.

- Guidance to Project Manager
- Decisions about course of the project
- Resolved issues
- Mitigated risks
- Acknowledgement of deliveries by project team

Core activities and frequencies.

Monthly meetings at which:

- The project manager presents on the status of the project.
- Decisions are taken.
- Action items accepted.
- Guidance/instructions issued to the project manager.

The steering committee is also to ensure that an *Outcomes close-out report* is prepared and tabled as soon as target outcomes have been secured.

Membership/leader.

- Nancy Palmer (Chair)
- Charles Edwards (CEO)
- Owen Oliver (COO)
- Catherine Farnham (CFO)

Where in PGM does this role report?

The steering committee reports outside the PGM (through Nancy Palmer as project owner) to Charles Edwards as funder.

Review of role.

The role of the steering committee will be reviewed every quarter by Adam Condon (Project assurance counsellor). This is to take place in a special meeting/workshop.

Term.

The steering committee will come into existence immediately and continue its role until target outcomes have been secured.

6. High-level plan

The following schedules of milestones and costs were obtained from output-based estimates provided by our process re-engineering consultants—based on their experiences with similar projects both here and overseas during the past 10 years:

6.1. Preliminary workplan.

#	Activity	Start date	Finish date
1	New procurement processes:		
	Development	1 February	30 April
	Approval	1 May	15 May
2	New procurement policy and procedures manual:		
	Development	1 February	30 April
	Approval	1 May	15 May
3	A restructured procurement unit:		
	Development	1 February	31 May
	Approval	15 June	30 June
4	Enabling applications systems	1 February	31 July
5	New technical infrastructure	1 February	31 July
6	A panel of preferred suppliers		
	Development	1 June	15 June
	Approval	16 June	30 June
7	Programs of accredited professional development for staff	1 April	31 July

6.2. Resource plan and budget.

#	Output	Cost (\$)
1	New procurement processes	10,000
2	New procurement policy and procedures manual	50,000
3	A restructured procurement unit	20,000
4	Enabling applications systems and new technical	150,000
6	A panel of preferred suppliers	10,000
7	Programs of accredited professional development for staff	50,000
Total		290,000

7. Issues and risks

7.1. Critical risks. Based on a Risk report.

A full risk register would normally be shown here, but for this example we summarise the details that apply to just one threat, related to Lindsay Thomas's availability. [The details for this risk are displayed vertically here, whereas a typical risk register would show them as a row].

Attribute	Entry
#	R17
Threat	Lindsay Thomas becomes unavailable during project
Pre-likelihood	Distinct chance (from standard wordscale)
Impact	Benefits delayed, Costs increased
Pre-Severity	Grave (from standard wordscale)
Pre-Risk Exposure	This is a Grade E threat
Risk mitigation plan (RMP)	
P = Preemptives	(P) Accelerate the work on process analysis by employing world's top process analyst (P) Arrange a significant completion bonus to LT
C = Contingencies	(C) Appoint another senior member of the Procurement Staff as an understudy
Post-likelihood	Remote chance (from standard wordscale)
Post-Severity	Significant (from standard wordscale)
Post-Risk Exposure	This becomes a Grade H threat
Effectiveness of proposed RMP	3/11
Cost of proposed RMP	\$150,000

7.2. Key issues—based on an Issues report.

A full issues report would normally be shown here, but for this example we summarise the details that apply to just one issue, related to office accommodation for the project team. [The details for this issue are displayed vertically here, whereas a typical issue register would show them as a row].

Attribute	Entry
#	I42
Issue	The recent sale of ICO's concrete additives R&D business will free an office that could be used by the BuyRite team
Importance	High (from standard wordscale)
Status	Active
Notes	The current lease was negotiated at very attractive rates and runs for another 2 years. Some fit-out would be required
Assigned to	Pasquale Mataro (ICO's Property Manager)

8. Approach to the planning global phase

Planning will take about 3 months. The planning team will be made up of:

- Paul Myer
- Pamela Atkinson
- Rowland Johns (part time)
- A planning contractor (yet to be identified)

Chapter 4: Worked exercises

This chapter is broken into two sections: 4.1 is devoted to the exercise questions, while 4.2 provides suggested answers/responses to those questions.

4.1 Exercise questions

A. Short answer section

Write your answer to each question in the space provided.

A1	In what situation is it desirable to assemble a script for a proposed process?
----	--

Answer:

A2	Draw an <i>ITO model</i> and label its elements.
----	--

Answer:

A3	Indicate on your answer to question 2 above where the IPO model is to be found.
----	---

A4	The PMBoK organises its concepts into “bundles”. What these bundles called? How many are there?
----	---

Answer:

A5	Nominate a project and provide an example of both a related output and an outcome.
Answer:	
A6	The “ <i>equation of Worth</i> ” involves what terms/concepts?
Answer:	
A7	Utilisation involves project customers in the execution of certain operational processes. What is the term we use to identify such processes?
Answer:	
A8	Four <i>sorts of problems</i> can arise if a project is not scoped correctly. What do we call these four situations?
Answer:	
A9	I have in front of me a <i>detailed definition</i> for an output from a project. What am I looking at?
Answer:	
A10	The definition of a target outcome takes the form of a table <i>with six rows</i> . List their headings.

Answer:

A11	What does the <i>Organisational Impact</i> section (in the Business case) discuss?
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Answer:

A12	What is <i>baselining</i>—as it relates to a project's target outcomes?
------------	--

Answer:

A13	What is a project portfolio?
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Answer:

A14	List three sorts of linkages between projects that qualify them for inclusion in a programme?
------------	--

Answer:

A15	Two types of baseline document are produced over the life of a project. What are they?
------------	---

Answer:

A16	What distinguishes Above the Line (AtL) and Below the Line (BtL) work?
------------	---

Answer:

A17	A project can be incorrectly-scoped at Level 1 in either of two ways. What is each form of incorrect-scoping called?
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Answer:

A18	A project can be incorrectly-scoped at Level 2 in either of two ways. What is each form of incorrect-scoping called?
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Answer:

A19	Show—as a simple labelled diagram—the structure of the tool used to solve the scoping problem at level 1.
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Answer:

A20

Show—as a simple labelled diagram—the structure of the tool used to solve the scoping problem at level 2.

Answer:

A21

What role does a *Utilisation Map* (UM) fill when scoping a project?

Answer:

A22

What are the possible explanations of *an empty row* in a *Utilisation Map* (UM)?

Answer:

A23

What are the possible explanations of *an empty column* in a *Utilisation Map* (UM)?

Answer:

A24	What role does a <i>Utilisation Storyboard</i> (US) fill when scoping a project?
-----	--

Answer:

A25	How can I determine <i>the count</i> of Utilisation Storyboards I will need in my Business Case?
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Answer:

A26	The “triple test” of project success involves three judgements of success/failure. What is judged as a success or failure in each case?
-----	---

Answer:

A27	To which of the tests of project success does the conventional <i>iron triangle</i> relate?
-----	---

Answer:

A28	In the first step of a regression test, we take the approved Business Case/Project Plan and change it. <i>How do we change it</i> and what do we call <i>the changed baseline document</i> ?
-----	--

Answer:

A29	In two or three sentences, describe the way in which a regression test is conducted.
-----	--

Answer:

A30	In the second step of a regression test for <i>ownership</i> success, we take the baseline document obtained during the first step: to whom and what question do we ask them?
-----	---

Answer:

A31	<i>Based on the answer</i> given to the previous question how do we judge success/failure?
-----	--

Answer:

A32	What makes an entity a stakeholder in a project?
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Answer:

A33	In Zwikael and Smyrk (2011), we recognise three generic forms of stakeholder engagement. What are they?
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Answer:

A34	List five commissioned stakeholders in a project
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Answer:

A35	Where in a project's baseline documents will I find details of <i>all</i> the project's stakeholders?
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Answer:

A36	Show, as a diagram, a typical <i>Project Governance Model</i>
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Answer:

A37	What are the <i>two characteristics</i> of an event that qualify it for entry into the Risk register?
-----	---

Answer:

A38	I face a risk for which I have a proposed form of mitigation. What must I know about the mitigation action <i>before I implement it</i> ?
-----	---

Answer:

A39	What are the three components of the <i>Event-Impact Model</i> of risk?
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Answer:

A40	There are <i>only six ways</i> that a threat can lower the Worth of a project. What are they?
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Answer:

A41	What is the Risk Exposure of a threat and how is it determined?
-----	---

Answer:

A42	What is a grading table?
-----	--------------------------

Answer:

A43	When analysing a risk, why is it necessary to calculate its Risk Exposure <i>twice</i> ?
-----	--

Answer:

A44	What are the <i>two classes</i> of mitigating action we can take against a threat? How does each of them cause a reduction in Risk Exposure?
-----	--

Answer:

A45	If an entry in the Risk Register is to appear in a Risk report, it must meet either of two conditions. What are they?
-----	---

Answer:

A46	What two variables must be traded-off when deciding on the adoption of a proposed Risk Management Programme?
-----	--

Answer:

A47	What piece of project documentation MUST you have available before you can assemble a WBS?
-----	---

Answer:

A48	Each bar in a Gantt chart has <i>three scheduling parameters</i> . What are they and how are they related
-----	---

Answer:

A49	A project that with negative NPV may still be an attractive investment. Why?
-----	--

Answer:

A50

What are *three broad strategies* to resolve a cost infeasibility?

Answer:

A51

Two sets of milestones are tracked to check the project's progress against its approved timeframe. What are those two sets?

Answer:

A52

The sunk cost rule is used to make *what sort of decision* about a project?

Answer:

A53

The budget summary table has *what columns and what rows*?

Answer:

A54	Hierarchical decomposition is the process of breaking small number of large sets into a large number of small sets. How do we know when to stop decomposing an element of a WBS into smaller steps?
-----	---

Answer:

A55	All tasks on a project's Critical Path share a characteristic. What is that characteristic?
-----	---

Answer:

A56	What are the <i>three broad strategies</i> to resolve a time infeasibility?
-----	---

Answer:

A57	What does PERT analysis tell us about the end date of project execution?
-----	--

Answer:

A58	What <i>word structure</i> do we use to label elements in a WBS?
-----	--

Answer:

A59	What do we call tasks that, while not on the Critical path, have only small “float” (i.e. small delays will cause them to displace another task on the Critical Path)?
------------	---

Answer:

A60	Draw a diagram on which you can plot and then rank projects in terms of their attractiveness.
------------	--

Answer:

A61	Under what conditions can the matrix management problem arise?
------------	---

Answer:

A62	What items of information about each milestone are to be found in the columns of the Schedule of milestones?
------------	---

Answer:

A63	How do we know if a project is <i>cost</i>-infeasible?
------------	---

Answer:

A64	The agenda of a meeting to monitor a project’s status (and the supporting status report) has three parts. What are they called?
------------	--

Answer:

A65	According to the sunk cost rule what happens to a project's Worth as it progresses?
------------	--

Answer:

A66	Two successive project status reports are locked together. How?
------------	--

Answer:

4.2 Answers to exercise questions

A. Short answer section

Write your answer to each question in the space provided.

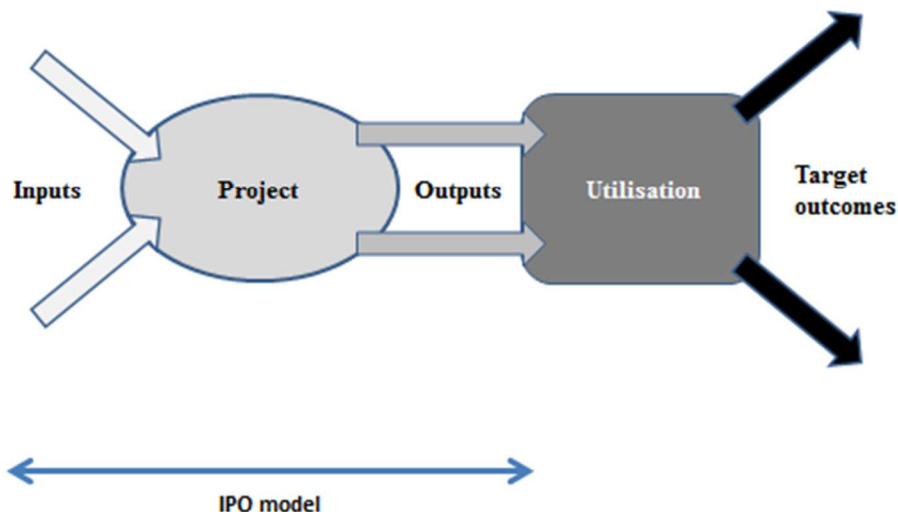
A1 In what situation is it desirable to assemble a script for a proposed process?

Answer:

A script is required when the costs of recovering from “doing it wrong” are unacceptable and avoidable.

A2 Draw an *ITO model* and label its elements.

Answer:



A3 Indicate on your answer to question 2 above where the IPO model is to be found.

A4 The PMBoK organises its concepts into “bundles”. What these bundles called? How many are there?

Answer:

Knowledge Areas.
Ten.

A5	Nominate a project and provide an example of both a related output and an outcome.
-----------	---

Answer:

Project: Refurbishing a take-away food store.

Output: New kitchens.

(Target) outcome: Reduced order fulfilment time.

A6	The “<i>equation of Worth</i>” involves what terms/concepts?
-----------	---

Answer:

Worth “=” Benefits – Disbenefits - Costs

A7	Utilisation involves project customers in the execution of certain operational processes. What is the term we use to identify such processes?
-----------	--

Answer:

Subject processes.

A8	Four <i>sorts of problems</i> can arise if a project is not scoped correctly. What do we call these four situations?
-----------	---

Answer:

Overscoping/underscoping: (A project has the wrong list of outputs).

Over-engineering/Under-engineering: (An output has the wrong list of fitness-for-purpose features).

A9	I have in front of me a <i>detailed definition</i> for an output from a project. What am I looking at?
-----------	---

Answer:

A list of fitness-for-purpose features.

A10	The definition of a target outcome takes the form of a table <i>with six rows</i>. List their headings.
------------	--

Answer:

Title, Description, Measure (unit of measurement), Target (value), Source/Method, Achievement date.

A11	What does the <i>Organisational Impact</i> section (in the Business case) discuss?
Answer: The impact on the business of undertaking the project.	
A12	What is <i>baselining</i>—as it relates to a project’s target outcomes?
Answer: The measurement of the variables used to define an outcome under the “Now” scenario.	
A13	What is a project portfolio?
Answer: The list of projects that an organisation has agreed to fund.	
A14	List three sorts of linkages between projects that qualify them for inclusion in a programme?
Answer: Consider projects “A” & “B”: <ul style="list-style-type: none"> • “A” depends on “B” • “B” depends on “A”. • “A” & “B” are interdependent 	
A15	Two types of baseline document are produced over the life of a project. What are they?
Answer: A Business Case. A Project Plan.	
A16	What distinguishes Above the Line (AtL) and Below the Line (BtL) work?
Answer: BtL work is related directly to the production of an output identified in a project's scoping statement. AtL work is related to the planning/management of BtL work.	

A17	A project can be incorrectly-scoped at Level 1 in either of two ways. What is each form of incorrect-scoping called?
------------	---

Answer:

Over-scoping
Under scoping

A18	A project can be incorrectly-scoped at Level 2 in either of two ways. What is each form of incorrect-scoping called?
------------	---

Answer:

Over-engineering
Under engineering

A19	Show—as a simple labelled diagram—the structure of the tool used to solve the scoping problem at level 1.
------------	--

Answer:

Utilisation Map (UM)

	Target outcomes			
Output	#1	#2	...	Project customers
#A				
#B				

Entries in all Target outcome columns are either 1 or 0

A20	Show—as a simple labelled diagram—the structure of the tool used to solve the scoping problem at level 2.
------------	--

Answer:

Utilisation storyboard (US)

Output	<output name>	
Utilisation step #	Activity	Implied fitness-for-purpose features of output

A21	What role does a <i>Utilisation Map</i> (UM) fill when scoping a project?
------------	--

Answer:

It assists in the validation of project scope.

A22	What are the possible explanations of <i>an empty row</i> in a <i>Utilisation Map</i> (UM)?
------------	--

Answer:

- A redundant output.
- A missing customer.
- An intermediate output.
- An output that is really a component of (required by the utilisation of) another output.

A23	What are the possible explanations of <i>an empty column</i> in a <i>Utilisation Map</i> (UM)?
------------	---

Answer:

- An unnecessary outcome (unlikely situation).
- A missing customer.
- A missing output.

A24	What role does a <i>Utilisation Storyboard</i> (US) fill when scoping a project?
------------	---

Answer:

It assists in the definition of an output.

A25	How can I determine <i>the count</i> of <i>Utilisation Storyboards</i> I will need in my <i>Business Case</i>?
------------	---

Answer:

There will be one US for every output identified in the project scoping statement.

A26	The “triple test” of project success involves three judgements of success/failure. What is judged as a success or failure in each case?
------------	--

Answer:

- The Project Manager.
- The Project Owner.
- The investment.

A27	To which of the tests of project success does the conventional <i>iron triangle</i> relate?
------------	--

Answer:

Project management success

A28	In the first step of a regression test, we take the approved Business Case/Project Plan and change it. <i>How do we change it</i> and what do we call <i>the changed baseline document</i>?
------------	--

Answer:

All parameters that were originally set, estimated or derived are stripped out of the document –giving rise to a “shell”. The shell is now populated with the actual values subsequently observed for those same parameters.

The repopulated shell is now called an *Achieved* Business Case (or Project Plan)

A29	In two or three sentences, describe the way in which a regression test is conducted.
------------	---

Answer:

The Achieved Baseline documents are given to the PO and Funder and asked if they see them as at least equivalent to the originally approved versions.

A30	In the second step of a regression test for <i>ownership</i> success, we take the baseline document obtained during the first step: to whom and what question do we ask them?
------------	--

Answer:

The **achieved** baseline documents are presented to the funder—who is then asked: “*Do you regard the project defined by these documents as being at least as attractive as the one defined by the approved baseline documents?*”.

A31	Based on the answer given to the previous question how do we judge success/failure?
------------	--

Answer:

If the answer is “Yes”, then the Project Owner is judged as successful—otherwise as unsuccessful.

A32	What makes an entity a stakeholder in a project?
------------	---

Answer:

Any entity (individual or group of individuals) who *has an interest in* a project is a stakeholder.

A33	In Zwikael and Smyrk (2011), we recognise three generic forms of stakeholder engagement. What are they?
------------	--

Answer:

- Include in Communications plan.
- Make the subject of a programme of special engagement.
- Assign a role in the Project Governance Model (generally as a member of a Reference Group).

A34	List five commissioned stakeholders in a project
------------	---

Answer:

Any five drawn from the list on P120 of In Zwikael and Smyrk (2011).

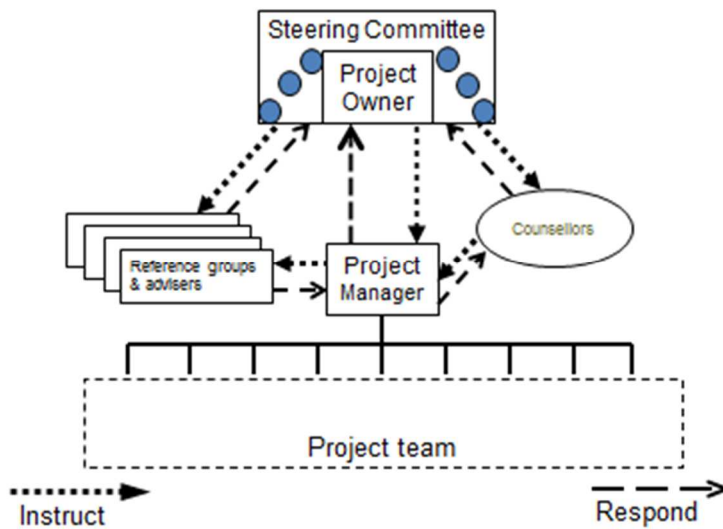
A35	Where in a project's baseline documents will I find details of <i>all</i> the project's stakeholders?
------------	--

Answer:

Commissioned stakeholders: in the Project Governance model—especially in the role definitions.
Spontaneous stakeholders: in the Stakeholder register.

A36	Show, as a diagram, a typical <i>Project Governance Model</i>
------------	--

Answer:



A37	What are the <i>two characteristics</i> of an event that qualify it for entry into the Risk register?
------------	--

Answer:

It is stochastic (i.e. it may or may not happen).
If it does happen, the project will be “damaged” (i.e. it’s Worth will fall).

A38	I face a risk for which I have a proposed form of mitigation. What must I know about the mitigation action <i>before I implement it</i>?
------------	---

Answer:

The *effectiveness* of the proposed action (measured as the resulting change in RE).
The *cost* of implementing that action.

A39	What are the three components of the <i>Event-Impact Model</i> of risk?
------------	--

Answer:

A triggering event (*threat*).
A chain of consequences (resulting in an *undesirable scenario*).
An impact (gauged as the loss of project Worth).

A40	There are <i>only six ways</i> that a threat can lower the Worth of a project. What are they?
------------	--

Answer:

Benefits reduced.
Benefits delayed.
Disbenefits increased.
Disbenefits advanced.
Costs increased.
Costs advanced.

A41	What is the Risk Exposure of a threat and how is it determined?
------------	--

Answer:

RE is a measure of the importance of a threat/risk.
RE is a function of Li (likelihood of threat occurring) and Se (severity of the resulting loss of Worth).

A42	What is a grading table?
------------	---------------------------------

Answer:

In a grading table:

- Each row corresponds to one of the values that can be assigned to Li.
- Each column corresponds to one of the values that can be assigned to Se.
- Each entry indicates the value of RE that corresponds to a particular combination of Li and Se values.

A43	When analysing a risk, why is it necessary to calculate its Risk Exposure <i>twice</i>?
------------	--

Answer:

RE is initially determined for a risk in the absence of any mitigation. Implementation of mitigation plans will reduce Li or Se (or both)—thus changing RE. The first is called *Pre-RE*, while the second is called *Post-RE*. The difference between Pre-RE and Post-RE is a measure of the *effectiveness* of the proposed mitigation plan.

A44	What are the <i>two classes</i> of mitigating action we can take against a threat? How does each of them cause a reduction in Risk Exposure?
------------	---

Answer:

A pre-emptive is a mitigating action that will cause Li to fall.
A contingency is a mitigating action that will cause Se to fall.
Either effect results in a lower RE.

A45e	If an entry in the Risk Register is to appear in a Risk report, it must meet either of two conditions. What are they?
-------------	--

Answer:

The threat has an RE above a pre-set value.
Risk mitigation involves members of the Steering Committee

A46	What two variables must be traded-off when deciding on the adoption of a proposed Risk Management Programme?
------------	---

Answer:

The effectiveness of the proposed RMP and its cost.

A47	What piece of project documentation <i>MUST</i> you have available before you can assemble a WBS?
------------	--

Answer:

A project scoping statement.

A48	Each bar in a Gantt chart has <i>three scheduling parameters</i>. What are they and how are they related
------------	---

Answer:

s (the start date/time of the associated task).
 f (the finish date/time of the associated task).
 If forward scheduling is being used
 $F = s + d$
 d is the duration of the associated task.

A49	A project that with negative NPV may still be an attractive investment. Why?
------------	---

Answer:

NPV accounts only for those components of Worth that have a dollar measure. A project's attractiveness is a function of its *total* Worth (which depends on non-dollar-valued components as well).

A50	What are <i>three broad strategies</i> to resolve a cost infeasibility?
------------	--

Answer:

Substitute non-premium-cost resources for premium-cost resources.
 Descope the project.
 Accept the cost overrun.

A51	<i>Two sets of milestones</i> are tracked to check the project's progress against its approved timeframe. What are those two sets?
------------	---

Answer:

Those milestones scheduled for achievement since the last report.
 Those milestones scheduled for achievement before the next report.

A52	The sunk cost rule is used to make <i>what sort of decision</i> about a project?
------------	---

Answer:

Decision to proceed following a change in estimates of remaining project costs.

A53	The budget summary table has <i>what columns and what rows</i>?
------------	--

Answer:

Columns:

- Costs incurred to date (c).
- Costs forecast over the remainder of the project (f).
- Projected costs over life of project (p): $p = c + f$

Rows:

- Actual/forecast/projected.
- Planned.
- Variance.

A54	Hierarchical decomposition is the process of breaking small number of large sets into a large number of small sets. How do we know when to stop decomposing an element of a WBS into smaller steps?
------------	--

Answer:

When the element can be undertaken by those assigned responsibility for its execution can undertake the work without further instructional detail.

A55	All tasks on a project's Critical Path share a characteristic. What is that characteristic?
------------	--

Answer:

A delay in any one of them will delay the project by the same amount.

A56	What are the <i>three broad strategies</i> to resolve a time infeasibility?
------------	--

Answer:

Increase the rate of application of resources.

Descope the project.

Accept the time over-run

A57	What does PERT analysis tell us about the end date of project execution?
------------	---

Answer:

PERT analysis gives the probability of achieving any future completion date.

A58	What <i>word structure</i> do we use to label elements in a WBS?
------------	---

Answer:

Every task (the lowest level in the WBS hierarchy) must be expressed as an imperative (i.e. as a command).

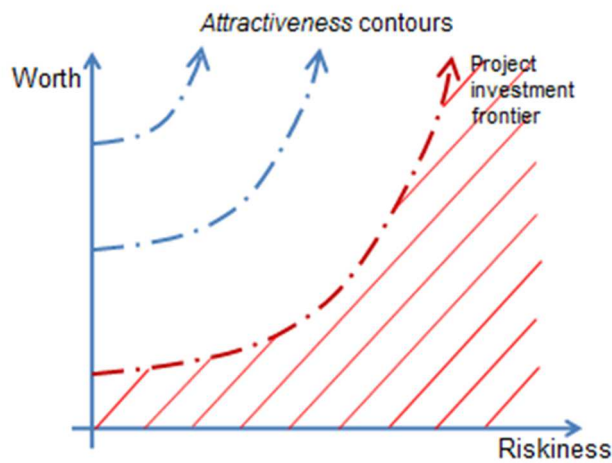
A59	What do we call tasks that, while not on the Critical path, have only small "float" (i.e. small delays will cause them to displace another task on the Critical Path)?
------------	---

Answer:

Near-critical tasks.

A60	Draw a diagram on which you can plot and then rank projects in terms of their attractiveness.
------------	--

Answer:



A61	Under what conditions can the matrix management problem arise?
------------	---

Answer:

When staff are assigned to a project either part-time—or on short-term secondment, they may face contention for their time from the Project Manager on one side and their line manager on the other.

A62	What items of information about each milestone are to be found in the columns of the Schedule of milestones?
------------	---

Answer:

Milestone

- #
- Name (of associated task)

Planned

- Finish date
- Task cost
- Cumulative task costs

Actual

- Finish date
- Task cost
- Cumulative task costs

A63	How do we know if a project is cost-infeasible?
------------	--

Answer:

A project is cost infeasible if reliable estimates of costs exceed the approved budget

A64	The agenda of a meeting to monitor a project's status (and the supporting status report) has three parts. What are they called?
------------	--

Answer:

Project environment management.

Project execution control.

Project baseline revision.

A65	According to the sunk cost rule what happens to a project's Worth as it progresses?
------------	--

Answer:

Most project costs are incurred before target outcomes can be achieved. The sunk cost rule can be interpreted as saying that, at the point of a decision about proceeding further, only the remaining costs can be used to calculate (effective) Worth. Since the remaining costs on a project fall as it progresses, the (effective) Worth of the project rises.

A66	Two successive project status reports are locked together. How?
------------	--

Answer:

Each report has two tables entitled:

A. Milestones scheduled for achievement since the last report.

B. Milestones scheduled for achievement before the next report.

Table "B" from one report becomes Table "A" in the next (and so the two must use the same milestones).