Software Project Management

INF3708

Assignment 02: Solution

ASSIGNMENT 02 - SEMESTER 1

ASSIGNMENT 02	
Due date	16 March 2018
Study material	Hughes & Cotterell: Chapters 1 and 2
Total marks	40 marks
If your assignment is late, please DO NOT PHONE OR E-MAIL asking for an extension but include a note in your assignment stating the reason for the late submission and we will decide whether or not it will be marked.	

UNIQUE NUMBER:
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Question 1 **(20 Mark)**

1.1 Discuss in detail what a project authority is, why the need of project authority is necessary in the project development? (4)

Answer

Project authority also known as project steering committee or project management board is a group of people with the overall authority over the project. Project authority is necessary in project development because, they are the people with overall responsibility for setting, monitoring and modifying the project objectives.

To have a successful project one need to have a clear and concise objective. Since project is made up of several stakeholders, the stakeholders are likely to have different objectives and claims to project ownership. To manage all these, there is a need to have a recognized project authority who will be responsible for the setting, monitoring and modifying project objective.

1.2 *A software house has developed a customized order processing system for a client. You are an employee of the software house that has been asked to organize a training course for the end-users of the system. At present, a user handbook has been produced, but no specific training material. A plan is now needed for the project which will set up the delivery of the training courses. The project can be assumed to have been completed when the*

first training course starts. Among the things that will need to be considered are the following:

- *Training materials will need to be designed and created;*
- *A timetable will need to be drafted and agreed;*
- *Date(s) for the course will need to be arranged;*
- *The people attending the course will need to be identified and notified;*
- *Rooms and computer facilities for the course will need to be provided for.*

A. *Identify the main stakeholders for this project;* *(6)*

B. *Draw up a statement of the objectives for this project;* *(4)*

C. *For the objectives, identify the measures of effectiveness;* *(2)*

D. *For each objective, identify relevant sub-objectives or goals and who would be responsible for each of them* *(4)*

Answer

A. Main stakeholders

These might include:

- Client management – concerned that they have an effective accounting system and one aspect of this is that staff can use it effectively; also concerned about costs
- User management – at a lower level than the above, they would share the higher management concerns, but also have operational ones such as cover in the office when staff attend training courses.
- Users – they must feel that training is effective and relevant, concerned that it should not be inconvenient in terms of travel, timing etc.
- Trainers – that appropriate training materials are produced that will meet the expectations of users etc.
- Technical support – that a version of the new software is set up in a training environment suitable for use on the courses
- Premises management – availability of rooms for training
- Catering services – to provide refreshments for course delegates
- Reprographics services – to produce copies of training material correctly and on time

B. Objectives

Something along the lines:

'To have in place by dd/mm/yy all the materials and arrangements needed to enable the delivery of the training courses relating to the user of the accounting package ABC at organization XYZ within the budget specified'.

Note that the actual delivery of the material and training of staff is just outside the boundary of the 'project'.

C. Measures of effectiveness

An obvious one is that the training courses can actually go ahead. However, this is rather late if things are missing. An alternative would be to produce a checklist that can be used on dd/mm/yy that the necessary arrangements are in place. e.g.

- Rooms and equipment booked
- Delegates notified
- Training materials prepared

Etc., etc

D. Goals/sub-objectives

The checklist mentioned in the previous section could also be used to identify goals, e.g.

- Rooms booked – training administrator, premises manager
- Dates/ times of course notified to selected delegates – training administrator
- Training materials prepared – trainer
- Catering booked – training administrator, catering manager
- Installed software – technicians
- Training materials copied – reprographics

Question 2 **(20 Mark)**

The cash flows of Projects 1, 2 and 3 are given in the table below (in ZAR, South African rand, R):

Year	*Project A*	*Project B*
0	*-210,000*	*-350,000*
1	*27,000*	*100,000*
2	*35 000*	*50,000*
3	*33,500*	*100,000*
4	*15,000*	*120,000*
5	*58,200*	*5,000*
6	*45,000*	*15,000*

Table of cash flows for Project A and B

Use this information to calculate the **Net Profit**, the **Return on Investment** (ROI), the **payback period** and the **Net Present Value** at 12% for **each** of these projects. Then answer Questions 1 – 5.

Q2.1. Calculate the Net Profit for each project. **(4 marks)**

Project**A:**

Answer

Net profit is the difference between the total costs and the total income over the life of the project.
27 000 + 35 000 + 33 500 + 15 000 + 58 200 + 45 000 = 213 700
213 700 - 210 000 √
= **R3700** √

P**roject B:**

Answer

Net profit is the difference between the total costs and the total income over the life of the project.

100 000 + 50 000 + 100 000 + 120 000 + 5 000 + 15 000 = 390 000
390 000 - 350 000 √
= **R40 000** √

Q2.2 Based on your calculation of the Net Profit, which project select and why? **(1 mark)**

Answer:

Project B would be selected because it has the highest Netprofit of R40 000 compare with Project A

Q2.3 Calculate the Return on Investment for each project. **(4 marks)**

Project A:

Answer

Return on Investment (ROI), also called Accounting Rate of Return (ARR), provides a way of comparing the net profitability to the investment required.

ROI = $\frac{\text{average annual profit}}{\text{total investment}} \times 100$

= $\frac{3700/6}{210\,000} \times 100$ ✓

= $\frac{617}{210\,000} \times 100$

= 0.29% ✓

Project B:

Answer

ROI = $\frac{\text{average annual profit}}{\text{total investment}} \times 100$

= $\frac{40\,000/6}{450\,000} \times 100$ ✓

= $\frac{6667}{350\,000} \times 100$

= **1.90%** ✓

Q2.4 Based on your calculation of the individual Return on Investment (ROI) of each project in question 2 above, which project would you select to develop? **(1 mark)**

Answer:

Based on the calculation of ROI, Project B would be selected because it has the highest return of 1.90% on investment ✓

Q.2.5 Calculate the Payback Period for each project. **(4 marks)**

Payback is the time taken to break even or pay back the initial investment

Project A:

Answer =

Year	Project A	Calculations for pay back period
0	-R210 000	- R210 000

1	R27 000	(- R210 000) + 27 000	= - 183 000
2	R35 000	(-183 000) + 35 000	= - 148 000
3	R33 500	(-148 000) + 33 500	= - 114 500
4	R15 000	(- 114 500) + 15 000	= - 99 500
5	R58 200	(- 99 500) + 58 200	= - 41 300
6	**R45 000**	**(- 41 300) + 45 000**	**= 3 700**

To calculate is Payback period = breakeven year – (profit made in breakeven year/ income in breakeven year)

Project A: (6 - (3 700/45 000) = 5.917year OR 5.92) √√ (Please give one mark for the actual answer and one mark for showing how he/she got the answer)

Project B:

Answer =

Payback is the time taken to break even or pay back the initial investment

Year	Project B	Calculations for paid back period
0	-R350 000	- R350 000
1	R100 000	(- R350 000) + 100 000 = - 250 000
2	R50 000	(-250 000) + 50 000 = - 200 000
3	R100 000	(-200 000) + 100 000 = -100 000
4	**R120 000**	**(-100 000) + 120 000 = 20 000**
5		
6		

Project B: (4 - (20 000 /120 000) = 3.83 year √√ (Please give one mark for the actual answer and one mark for showing how he/she got the answer)

Q2.6. Calculate the Net Present Value for each project. **(6 marks)**

Note: the *Table of NPV Discount Factors* is available in the prescribed text book.

Project A:

Answer

√√√ (Please give one mark for the correct NPV calculation and the remaining mark for each correct discounted cash flow for each year)

Year	Project A	Discount Factor at 12%	Discounted cash flow (R)
0	-R210 000	1.00	-210 000
1	R27 000	0.8929	24108.3
2	R 35 000	0.7972	27902
3	R33 500	0.7118	23845.3
4	R15 000	0.6355	9532.5
5	R58 200	0.5674	33022.6
6	R45 000	0.5066	22797
NPV			**-R68 792.3**

Project B:

Answer

√√√ (Please give one mark for the correct NPV calculation and half a mark each correct discounted cash flow for each year)

Year	Project B	Discount Factor at 12%	Discounted cash flow (R)
0	-R350 000	1.00	-350 000
1	R100 000	0.8929	89290
2	R50 000	0.7972	39860
3	R100 000	0.7118	71180
4	R120 000	0.6355	76260
5	R5 000	0.5674	2837
6	R15 000	0.5066	7599
NPV			**- R62 974**