UTM

UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING

SEMESTER 2

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SECP2613 - SYSTEM ANALYSIS AND DESIGN (WBL)

SECTION 01

ASSIGNMENT 1

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Question 1

a) How would you assess the feasibility of the systems project Ahmad is proposing?

In order to assess the feasibility of the systems project Ahmad is proposing, I would look at the current state of technology, discover any flaws, and figure out how the proposed system may fix these problems. I would also take into account any possible advantages and difficulties that might arise when the new system is put into place. Before making any modifications, it is essential to get approval from managers, system staff, and potential users to secure their support.

b) Based on what Abu has said about the managers, users, and systems people, what seems to be the operational feasibility of the proposed project?

Abu's comments suggest that there isn't enough of an operational feasibility. A new system could cause a lot of disturbance if the current one is working as it is supposed to and the users are not experiencing any problems. While there is the technological capacity to create a new system, it is doubtful if this move is in keeping with the aims and objectives of the business. As such, there's a chance that a new system won't be well-received or fully adopted.

c) What about the technological feasibility?

Make sure the present team has the necessary tools to implement the suggested solution before evaluating its technological feasibility. Abu's research shows that the technology needed for the new system is available, but he also raised questions about whether or not it would be wise to make changes to the current system. This evaluation is going to help in determining whether the proposed changes are achievable and compatible with the capabilities of the present system.

d) Based on what Ahmad and Abu have discussed, would you recommend that a full-blown systems study be done? Discuss your answer in a paragraph.

In context with the discussion between Ahmad and Abu, I would advise against moving forward with an extensive system redesign just now. Abu's research reveals that managers and users of the current system are mostly satisfied, meaning that significant modifications would cause unneeded change. Although there is technology available for an improvement, considering the existing level of satisfaction, it doesn't seem necessary. It is advisable to carry out an in-depth cost-benefit analysis in order to make an informed conclusion. This would make it easier to assess whether the possible advantages of a new system exceed any expenses and any disruptions related to its implementation.

Question 2

Think of all tasks chat you perform when you want to proposed a new computer system for student registration. Include any research, decisions, or financial issue that related to the development of new computer system. Create a Work Based Schedule(WBS) that shows all the tasks, their estimated duration, and any predecessor tasks.

PHASE	**ACTIVITY**
Research	Requirements Market Research
Planning	Develop System Technology Selection
Analysis	Budgeting and Financial Analysis
Design	Prototype Development
Testing	User Acceptance Fixing and Optimization
Implementation	System Deployment
Post-Implementation	User Training Feedback Collection

Figure 1 : Beginning to plan a new system by breaking it

ACTIVITY	PREDECESSOR	DETAILED ACTIVITY	WEEK REQUIRED
A. Requirements	(none)	Gather requirement to understand the needs of new system	1
B. Market Research	**A**	Look over the existing system	2
C. Develop System	**A**	Develop high-level architecture for new system	3
D. Technology Selection	**A**	Use appropriate programming language, database and framework	2
E. Budgeting and Financial Analysis	**A**	Estimate cost needed for implement new system	2
F. Prototype Development	**C**	Build and demonstrate prototype	4
G. User Acceptance	**F**	User need to test the prototype and give feedback	3
H. Fixing and Optimization	**G**	Identify the issues and optimize the system performance	2
I. System Deployment	**H**	Finalize the system in controlled environment	1
J. User Training	**I**	Provide a trial session for staff and students	2
K. Feedback Collection	**K**	Collect feedback for further enhancements	1

Figure 2 : Refining the Planning and Scheduling of Analysis Activities by Adding Detailed Tasks and Establishing the Time Required to Complete the Tasks

WBS Computer System for Student Registration

1. **Research**
   - 1.1. Requirements
   - 1.2. Market Research (Predecessor : 1.1 Requirements)
2. **Planning**
   - 2.1. Develop System (Predecessor : 1.1 Requirements)
   - 2.2. Technology Selection (Predecessor : 1.1 Requirements)
3. **Analysis**
   - 3.1. Budgeting and Financial Analysis (Predecessor : 1.1 Requirements)
4. **Design**
   - 4.1. Prototype Development (Predecessor : 2.1 Develop System)
5. **Testing**
   - 5.1. User Acceptance (Predecessor : 4.1 Prototype Development)
   - 5.2. Fixing and Optimization (Predecessor : 5.1 User Acceptance)
6. **Implementation**
   - 6.1. System Deployment (Predecessor : 5.2 Fixing and Optimization)
7. **Post-Implementation**
   - 7.1. User Training (Predecessor : 6.1 System Deployment)
   - 7.2. Feedback Collection (Predecessor : 7.1 User Training)

Question 3

Comparing Traditional and Agile Project Management Approaches in Distributed Teams

I. Introduction

The System Development Life Cycle (SDLC), which consists of seven stages—problem identification, human requirements determination, system analysis, system design, software development and documentation, system testing and maintenance, and final implementation and evaluation—is frequently followed by the traditional project management methods. As a result, the five steps of the flexible methodology—exploration, planning, modifications leading up to the first release, productionizing, and maintenance—offer a more adaptable option. This paper examines the differences between traditional and flexible project management techniques for teams working remotely in various time zones.

II. Key Differences

a. Project Duration

Team members in the exact same location or time zone are usually involved in traditional project management, which may accelerate the completion of the project. The agile method generally distributes work between team members who are located in different time zones, which could cause the project to take longer to complete. More flexibility is needed for agile periodic method, which lets team members finish and test their tasks separately before merging them into the finished product.

b. Bug Detection

Traditional methods typically require finishing the design before running tests, increasing the probability of discovering multiple faults at once. The Agile method, on the other hand, includes testing into the entire development process, making it possible to find and address defects one at a time. This lessens the workload for system analysts and enhances the quality of the final result during the execution of the project.

c. Communication Among Team Members

Traditional project management frequently depends on face-to-face meetings, where team members physically come together at a specified site. Teams with agile methods frequently employ virtual meeting platforms like Microsoft Teams, WebEx, or Zoom, especially when they split up across time zones. This decreases the time-consuming tasks associated with locating a physical meeting venue and enhances the scheduling of meetings. Agile methodology encourages more frequent and adaptable interactions between team members because it depends heavily on online interaction.

d. Customer Involvement

Feedback from clients is typically obtained through initial meetings or interviews in traditional projects, with little to no follow-up communication. On the contrary, clients are actively involved in the project along the agile methodology. Through this ongoing feedback repeating cycle, clients can shape the project's path and guarantee that the finished result meets their requirements and expectations. Project managers have the ability to modify the project based on input from clients, which increases client satisfaction.

III. Conclusion

Particular issues arise when directing tasks with team members spread across multiple regions and time zones. Logistically speaking, agile technique is more flexible and adaptable than traditional ways. Agile is a great option for faraway teams because of its periodic structure, attention to continuing client interaction, and focus on virtual communication. Project managers may effectively address the challenges of distant interaction by implementing the principles of agile.

QUESTION 4 (10 MARKS)

SKORBISTARI leading preschool was established with the dream of bringing quality of preschools to greater high based on Islamic principles, English emphasis, and cheerful well-designed facilities. The company grows to over 53 centres all over the country. Recently, the top management has decided to consider an information system to help their growing business. You have been hired as the system analyst to handle the project. Before continue with the development of the project, you need to assess the economic feasibility from the budget that the company plans to invest. Table 1 shows the information given by the company.

Table 1: Estimated cost and expected benefits for SKORBISTARI

Development Cost	
Hardware	RM50,000
Software	RM15,000
Training	RM30,000
Consulting	RM80,000
Data Conversion	RM40,000

Production Cost	
Supplies	RM 15,000 Per Year
IS Supplies	RM 75,000 in year 1; 10% Annual Increase
Upgrades	RM 10,000 Per Year over 3 Years

Assumptions	
Discount Rate	35%

Benefits	
Improve Customer Service	RM 150,000 in Year 1; 20% Increase Annually
Increase Productivity	RM 150,000 Per Year; 25% Increase Annually

(a) Calculate the cost-benefit estimation using the Present Value (PV) analysis (for 3 years) to assess the economic feasibility for the SKORBESTARI project proposal in the worksheet.

(9 marks)

Cost-Benefit Estimation - Costs

Costs	**Year 0**	**Year 1**	**Year 2**	**Year 3**
Development Costs • Hardware • Software • Training • Consulting • Data Conversion	 50 000 15 000 30 000 80 000 40 000			
Total	215 000			
Production Costs • Supplies • IS Salaries • Upgrades		 15 000 75 000 10 000	 15 000 82 500 10 000	 15 000 90 700 10 000
Annual Production Costs (Present Value)		100 000 74 074	107 500 58 984	115 750 47 045
Accumulated Costs		289 074	348 058	395 103

Cost-Benefit Estimation - Benefits

Benefits	**Year 0**	**Year 1**	**Year 2**	**Year 3**
• Improve Customer Service • Increase Productivity		150 000 150 000	180 000 187 500	216 000 234 375
Annual Benefits Total (Present Value)		300 000 222 222	367 500 201 646	450 375 183 051
Accumulated Benefits (Present Value)		222 222	423 868	606 919
Gain or Loss		**(66 852)**	**75 810**	**211 816**

(b) What is the profitability index (PI) value for this PV analysis? What is your recommendation based on the PI value and justify it.

(1 marks)

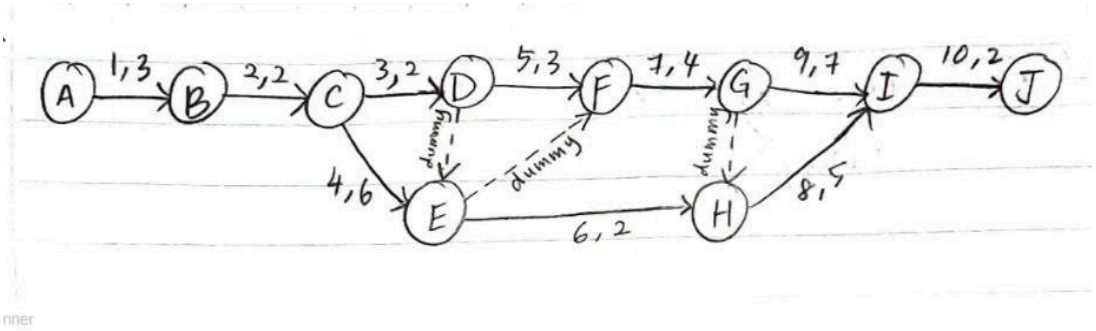
Profitability Index (PI) = $Total\ Gain/Loss \div Total\ Development\ Costs$

= 211 816 ÷ 215 000

= 0.99 ; This is not a good investment because the PI is less than 0.

Question 5

a)



b) Path 1: 1 - 2 - 3 - 5 - 7 - 9 - 10
Path 2: 1 - 2 - 4 - 6 - 8 - 10

c) Length for Path 1 = 3+2+2+3+4+7+2
= 23 weeks
Length for Path 2 = 3+2+6+2+5+2
= 20 weeks

The critical path is Path 1: 1 - 2 - 3 - 5 - 7 - 9 - 10 which needs 23 weeks to finish the project.

d)