VR1Family Charity Aid Services

Assignment 01

Student Name	**Chaoyi Shi**
Student ID	**1069250**
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Question 1: Business Case

What is the business case (need for this project). Keep your answer to a few sentences. (Suggested Word Limit: 100 – 150 words)

The VR1Family's business case is about addressing the current limitations of IT system and introducing a new system called initial build'. The organization believes that the current IT system is inefficient and results in an overhead cost of 30% of financial donations. Therefore, the organization wants the new system to reduce operational overheads and improve aid service.
By conducting a small pilot case study to test the feasibility of the new system, the organization aims to reduce costs to under 10% and use the additional 20% saving to support more people in need. The new system is expected to offer visualized data on aid supplies, data capture from donors and recipients, and enable them efficiently and timely requisition or receiving of the items.
Furthermore, the new system can streamline the cumbersome distribution process with a more simplified method such as email support to help dispatch aid supplies to people in need.

Question 2: Risk Analysis

Identify two things that could go wrong in this project – otherwise known as *Risks*, resulting in the project not achieving the intended goal/s. Clearly mention the *Justification* and *Impact* that each of these risks could have on the project. (Suggested Word Limit:250 – 300 words)*

- Ensure that you identify risks that are *unique to the characteristics of this case study.*
- If you are arguing for generic risks (such as project budget or timelines), you ***must*** mention clearly why these generic risks are important in the context of this case study.
- While you are encouraged to identify both risks unique to this case study, at-least an argument for one unique risk is needed.

Generic risks that can occur in any project include project members leaving the project, or project running out of budget before completion. If you discuss on the generic risks alone (without their relation to the case study), the maximum score for this question will be capped at 2 out of 4.

Risk – 1	
Risk Statement	The end users are unable to easily manipulate the new system due to the User Interface is challenge for the retirees. The developers may require additional effort and time to make UI easier to understand and use, thereby causing project delivery can be delayed and overruns in cost and schedule may occur.
Probability of Risk	65%
Impact of the Risk	7
Justification	Most staff in the organization are composed of retirees. They may lack skill updates, including a lack of familiarity with new technologies and tools because the elder group have not been exposed to new technologies and tools for a long time, so their skills may lag behind the current market demand. The team has difficulty switching to the new system along with the availability of the volunteer's time will arise a high risk of the project. Since new UI manipulation is a prerequisite in the new system, the impact is very high considering that older people may require longer learning time when using new technologies and UI, which could lead to lower work efficiency and thus affect work progress.

Risk – 2	
Risk Statement	The new system security may be hacked by hackers due to organizations being distributed around the Australia. The organization may require additional effort and money to develop the system in order to protect the privacy of the aid recipients and donors, thereby causing additional overhead and privacy leakage during system operation.
Probability of Risk	30%
Impact of the Risk	8
Justification	

	The new system is securely hosted which means the security has been highly safeguarded, but the complexity of information systems and the openness of the new system also increase the risk of system attacks. Although the system is under complete scrutiny, the low budget for the system building will still have some risks. Since the new system has to capture data information from the aid recipients and donors at the beginning. The hacker can attack many satellite depots at the same time to acquire sensitive information, once any depot is compromised, sensitive information could potentially be leaked on a large scale, therefor the impact is very high by the importance of privacy which could be used for malicious activities such as harassment, threats, extortion, and more.

Question 3: SDLC Recommendation

Discuss two possible Software Development Lifecycle models (SDLCs) that you would consider for this case study. This should include the pros and cons of each of your choices, referring to specific project characteristics as outlined in the case study. Use at-least two external references to support your argument. You should clearly link which Section of the case study is being supported by these external references, in your arguments. Without this link in your arguments, the maximum score will be capped at 6/10. (Suggested Word Limit: 1350 – 1500 words)

Note: You are not required to choose one SDLC from your two recommendations. You are giving sufficient information for the clients to make the decision themselves, based on two SDLC's that you are arguing for.

Software Development Life Cycle (SDLC) – 1	
SDLC Name	Scrum model
Justification	In the case study, the Scrum model is recommended. The scrum model can deal with complex projects as it promotes collaborative goal-setting, divides ten functional areas into small, manageable parts that are completed over brief time intervals, and encourages team members to communicate, take responsibility, and reflect on their work[1]. Firstly, the Scrum model emphasizes deliverables, transparency, and sustainability in the new system. To begin with, the team can make a one-week period for the first sprint about how to design minimalistic user interfaces for end users. Sprint comprises a sequence of Sprint processes that are conducted iteratively[2]. Thus the project can be delivered at each iteration cycle, the team can conduct the sprint review for the employees and volunteers recruited by VR1Family, which helps them to show the work they have done for the stakeholder and get some feedback after the sprint is done. When the sprint review is finished, the team can use the feedback to conduct a sprint retrospective, further improving and optimizing the workflow on functional areas such as aid receiving and distribution for the next Sprint in line 72. Secondly, for data capture in line 70, there are big differences between general information and private information. Therefore, it is important to negotiate and collaborate with team members to achieve the different functions in the data capture. The team should have meeting frequently to address the issue and share progress efferently to separate the UI with donors and recipients. As the result, daily scrum meetings can improve the communication and coordination of teamwork, besides issues can be identified and resolute timely. The main reason is that the daily stand-ups is a very short meeting that discusses the progress, issue and plan of the current period, which can improve the communication and collaboration efficiency of the team. Furthermore, the new system needs to develop many complex functions such as tracking aid items and visualization of aid supplies in line 71, each function has different specific requirements. The sprints can effectively break down a complex and large project into smaller tasks with specific requirements and deadlines. It is easier for the team to manage the implementation of features. In addition, the backlog of

	the sprint allows the team to identify the priority order and accountability of tasks. In use cases, the function of system security for users is very important, therefore the team should complete this function with high priority to protect the user's privacy and assets. To increase the progress of the system build, the product owner will assign the task to the different team members, and make sure everyone can participate in the project. To some extent, accountability can clarify job responsibilities and ensure the team's progress and quality. Moreover, assigning priority to functional tasks can help the team allocate tasks and resources in a reasonable manner. This can also facilitate the rapid development of the system and continuous improvement of its functionality in future. On the other hand, there are some limitations about sprint in the scrum model. Firstly, due to the complexity of the Scrum model, if the team is new to Scrum, they will need to spend extra time learning and adapting how to use it. Because the scrum model involves many scrum activities such as sprint planning, daily scrum, sprint review and sprint retrospective and so on. All the team members must follow the rules and principles of the scrum model, which will increase the development time and cost of the project. In addition, the team should make a plan for each sprint at the beginning and the features were documented in the sprint backlog [3], which cannot be changed in order to avoid delays in project delivery. This requires team members to complete all sprint backlog within the sprint timebox within short period. To build the new system with a low budget in line 87, the team size with only 4-6 members may encounter communication and technique barriers. Because the team should cope with each phase of the Scrum methodology, it is necessary for every team member to possess a high level of expertise in the IT field, as well as a high level of motivation[4]. In fact, a team with these abilities is rare and expensive to recruit, which could force the projected excess budget of 20000 dollars in line 86. Another disadvantage of the scrum model is the daily meeting. In use case, the employees cannot always have time for daily meetings, because they are students who will focus on studying and homework instead of building the new system in line 88. Otherwise, the most of employees are retirees (in line 47) who cannot always concentrate on the meeting. Therefore, if the discussions are not centred around how to complete and improve the simple UI design, the efficiency of the meeting will be greatly diminished and consume a significant amount of time.

Software Development Life Cycle (SDLC) – 2	
SDLC Name	Waterfall model
Justification	In the case study, the waterfall model is recommended. The waterfall model is a well-known SDLC model and it is distinctive in its sequential progression through distinct stages, which include requirements analysis, design, coding, testing, and maintenance, in a downward manner[5]. Firstly, the waterfall model is an ideal candidate for a small-scale project. In the case study, the functional areas are not too much, the new IT system can be seen as a small project. The reason to use the waterfall model is it is easier to use and make new IT system initiated in the early stages tend to be more cost-effective, require less effort, and result in fewer wasted resources [6]. In the use case, the organization indicate that the project has to complete in six weeks in line 86, so time is valuable and short in this case study. The waterfall model is well-known and easier to use which can guarantee that most of team members can manipulate this model in a short period, especially for students in the team who may lack experience in team development. Therefore, choosing the waterfall model can help VR1Familiy organization decrease the learning budget on the model to achieve the goal of a low budget to build the new IT system. In addition, the waterfall model supports explicit goals and outcomes at each stage. Based on the specification, the client already fully define the requirement through the ten functional areas from lines 70 to 80. The use of the waterfall model provides the approach to systems development is characterized by a linear and sequential process[7], dividing the development process into five independent phases to lower the risk of the project complexity. Therefore, the team can use those functional areas as a requirement, it can not only decrease planning overhead[5], but also build the system at a low budget within 20000 dollars in line 86. On the other hand, the case study indicates the students who may not be familiar with the project plan will assist in system building in line 88. Because the waterfall model with the explicit requirement at each independent phase can help those students to collaborate with the team of system building efficiently and help the team manager to monitor the progress and quality of the project. On the other hand, although the separation stages in the waterfall model can make the development process explicit, each activity should be completed before the other. During the development process, the model only allows the staff in the organization will participate in the two parts of system building, which are about providing requirements and verifying project, thereby employees may have limited chances to preview or test the system until it is too late[5]. During the development stage, if the UI is too complex for the users who are retirees want to get a minimalistic UI in line 47. Therefore, it is inevitable for the team to modify the UI repeatedly after the finishing UI design, which would waste a lot of time at the design stage and impede the completion of system building in six weeks in line 86.

	The other limitation of the waterfall model is about too much paperwork in the design phase. In the case study, the team requires to design a simple UI for users such as dashboard in line 74. Before the team works on the design UI, they should spend too much time and effort on how to write good paperwork about UI, which will distract the team from real UI design and result in not really completing the tasks about IT system. Due to system building only having six weeks, the documentation part may consume a big amount of time, which is not desirable. In addition, that documentation may constrain the creativity and flexibility of the team member, for example, the team may not combine the security consideration (in line 76) with data capture (in line 70) or aid receiving and distribution in line 72, according to the required documentation, the team may only have few security measures such as restricting the number of login attempts in line 76, which is not enough to protect the privacy of the users.

Question 4:

To be released later as a part of Assignment 2 in Week 5.