Requirements Analysis and Project Management

Name

Institutional Affiliation

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**Question 1: Requirements Taxonomy**

The requirements management plan is used to document the necessary information needed to manage project requirements effectively, from the definition to project delivery. In preparing the requirements management plan for the Scooter Vile Library PAMS Project, it is a must to specify what requirements taxonomy is to be justified. Ideally, the requirements taxonomy for Scooter Vile Library PAMS may comprise both business requirements and system (or technical) specifications. Based on the first requirement taxonomy for the project under consideration categorized under business requirements, it captures the core functions, facts, or behavior that will exhibit. Both business requirements and business specifications for the project have been described as follows.

**Functional Requirements**

 Functional requirements taxonomy is critical in defining what functions the solution has to do. Additionally, functional requirements are relatively concrete and easy to define (Requirements Solutions Group, 2008). For the Scooter Vile Library PAMS Project, below are the functional requirements as per the requirements management plan.

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| **Functional Business Requirements** | **Functional Technical Specifications** |
| ***Category*** | ***Definitions/ Clarifications/ Example*** | ***Category*** | ***Definitions/ Clarifications/ Examples*** |
| 01: Processes Procedures | Specific steps are required to achieve a result.*Serious actions have done to check-in assets, making a reservation of assets, and extending the deadline period.**The system has to accurately allow users to search for the library assets and generating the required reports.* | 51 Modules/ Programs  | Such technical specifications are keen on describing the functionality of each module in the system.*From the object perspective, this category provides the specification of assemblies, classes, and applications.**The system will allow the user to log in, perform the required operation, and obtain the required results.* |

**Information Requirements.**

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| **Information Business Requirements** | **Information Technical Specifications** |
| ***Category*** | ***Definitions/ Clarifications/ Example*** | ***Category*** | ***Definitions/ Clarifications/ Examples*** |
| 01: Knowledge | Facts, skills, or information acquired by an individual as a result of experience.*I want to know how to borrow an asset from the library facility via the system.* | 61 Algorithms | An algorithm is a finite set of procedures followed to complete a given task.*An algorithm can be a function in the system structured in a way that it will perform a specified functionality.**A good example is an algorithm comprising of an asset inventory listing* |
| 12 Information | The information comprises facts learned or provided from something.*Sooter Vile PAMS Project is well optimized, and users can mine the required data easily* | 62: Databases  | The goal of database specifications is to support program coding and the generation of the database from the development group. Additionally, with database specifications, it becomes possible to determine the technology to be adopted in a grouping of data in line with the algorithms. *Implementation of the database for the Scooter Vile PAMS Project will use the MYSQL database* |
| 13 Business Rules | Business rules define specific constraints on performing particular instructions.*The primary goal of business rules, in this case, is to define entities, relationships, attributes, and behaviors from the business perspective.**One or more customers can borrow an asset. A customer can borrow one or more assets* | 63 Access Paths | Access paths specifications provide an overview of the required fields and relationship that determines how data is accessed.*The UserID, ISBN, and LibraryReNo will be used to access the library system and perform critical operations via the system.* |

**Behavioral Requirements**

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| **Qualitative Business Requirements** | **Qualitative Technical Specifications** |
| ***Category*** | ***Definitions/ Clarifications/ Example*** | ***Category*** | ***Definitions/ Clarifications/ Examples*** |
| 33: Usability | Usability is the degree of how well the user can easily use a product/ design.*The graphical user interface of the system will be based on interface design principles.* | 81 Maintainability | Maintainability specification addresses the issue of ease in modifying the behavioral aspect of the specification.*The process of adding new features relating to the borrowing of assets by customers must be added without any complexity.* |
| 34 Availability | Availability ensures there is up time on the behavioral aspect of the application.*At all times, the system should ensure availability and operational 99.9%. Access to the system should be 24/7/365 days*  | 82: Portability  | Portability specifications provide the ability of the application to run and be installed in multiple applications. |

**Question 2: Requirements Negotiation**

The requirement is an iterative process where stakeholders make tradeoffs between the required system functions, capabilities of envisioned technologies, delivery schedule, cost. Ideally, for the case of Scooter Vile Library PAMS, the tradeoffs comprise of the negotiation process will comprise of different steps; the first one is engaging in the pre-negotiation phase of the requirements, which will entail the following:

1. Definition of the requirements negotiation problem.
2. Identification and solicitation of the project stakeholders.
3. Requirement elicitation goals from the stakeholder.
4. Analysis of goals to find conflicts.

The consideration in the negotiation phase in the implementation of this project will involve actual conduct of negotiations and definition of agreements by the project stakeholders, and based on the elicited goals as well as identified conflicts, the stakeholders of the project will seek benefits solutions mutually as well as developing alternatives through requirements definition to solve the problems. As a requirements manager for the PAMS project, I will negotiate the requirements negotiation to explain the problems on the solutions, which is a key prerequisite for the stakeholders to agree on the key decisions and establish the judging criteria for the solutions the project implementation. Additionally, as a manager of the PAMS project, I would focus on carrying out preparatory negotiation sessions to agree on the judgment criteria.

Concerning the requirements post-negotiation phase, stakeholders must focus on analyzing and evaluating the negotiation outcomes and suggesting the renegotiation of the requirements, project timeline, and cost. Therefore, in the PAMS project's managerial role, I would focus on determining if there is an ideal solution for one party from the project without causing any loss to another party or stakeholders. Additionally, as a manager for the said project, I would develop a framework for requirements negotiation which should address the following dimensions relating to the project implementation:

1. Conflict resolution strategies among the stakeholders.
2. Collaboration situation among the stakeholders.
3. Degree of tool support

Furthermore, the dimensions in the requirements negation cover key questions, which include the following:

1. How the arising conflicts resolved?
2. How the collaboration of different stakeholders done?
3. Which tools are used in supporting the negotiation process in the implementation of the PAMS project?

In ensuring that the outcomes of the negation process are binding, I would employ a Win-Win approach to make each stakeholder be a winner and not a loser. Additionally, as a manager of this project, I would focus keenly on building a shared vision among the stakeholders by employing this approach. The requirements negotiation process must put consideration on different project collaboration situations-based time and place. Based on this, I would organize a face-to-face meeting with the project stakeholders to define agreements and resolve any conflicts that might be existing from some stakeholders. My main concern as a requirements manager would be to cooperate with the PAMS project stakeholders in a consensus-oriented and problem-solving team process.

**Question 3: Justification for Budget, Time and Money and its Benefits**

Project and requirements managers need to under the current system "as-is" before expending resources in defining the requirements of a new system. Additionally, as a project manager, the focus needs to be put on the total business analysis. According to Parker (2014), implementing a new system can be risky if the requirements are not well understood; hence this may amount to the implementation of inconsistent functionalities of a system. Understanding the current system or processes before implementing a new system reduces the risk and provides an opportunity to identify the weak points in the current processes. Additionally, it is beneficial to perform the current business process review and definition before implementing the new system since it is a mechanism for reducing the risk of software implementation (Bevan et al., 2018). The beneficial aspect of this is to provide efficiency gains amounting to lower overheads and understanding the requirements to set a reasonable project timeline.

The role played by the project manager in planning, executing, monitoring, controlling, and closing the projects is paramount and can determine the success rate of any project. As a project manager, you are expected to deliver the project on time and within the budget constraint. In making a good impression on the project stakeholders and clients, as a project manager, you need to look at to ensure that the project has succeeded and been able to negotiate achievable deadlines and have a similar discussion with the team. Based on the given project, the project manager must focus on delivering the value of the project by focusing on the requirements given, objectives of the project, the process, estimation duration (timeline), schedule development, schedule control, and cost control (Maguire & Bevan, 2002). Ideally, the project manager of the given project needs the impact strategy, including the full list of the project activities, timeline, and project cost. The key responsibility of the project manager, in this case, is budget planning and scheduling of the project to ensure there is no delayed implementation. The procedure for implementation should be efficient enough to ensure the delivery has been done in accordance with the given budget and time.

Ideally, understanding user requirements more so from the current system’s perspective is paramount. Such requirements form an integral part of information systems design which is critical for the success of the interactive system. The benefits accrued from understanding the current system and/ or process may include enhanced quality of work, improved system, improved user satisfaction (Maguire & Bevan, 2002). Additionally, the problems that may arise during the requirements elicitation and development of the system can be resolved by studying the current system, then mapping this with the user's needs before coming up with a requirements specification document. Therefore, the requirement manager must focus on these aspects, which may reduce costs in the long run, among other benefits. Understanding the current system also goes beyond stakeholder analysis which identifies all users and the stakeholders who may be impacted or influenced by the system.

**Question 4: Do Programmers Make Good Requirements Analysts?**

Based on the above question, programmers must possess requirements analysis skills and vice-versa. Where system analysts work primarily on existing systems, software developers are keen on creating new applications where such systems improve the overall efficiency in an organization by tackling the stated problem. Based on the similarities between systems analysts and software developers, it is important to recognize that both work with software and computer technologies. On the other hand, the key difference is based on the skills required to run the day-to-day responsibilities.

In understanding whether programmers can make good requirements, analysts can be traced from the career path of the two. Typically, software developers create software based on the key stages of software developments (Altalbe, 2015). Software developers can work in various areas due to the wide spectrum of software applications and systems used by businesses and other institutions. Conversely, system analysts understand software; however, their work focuses on taking an organization's information system. The role of system analysts is primarily based on requirements gathering, and not all system analysts can find software development jobs. On the same note on whether programmers make good requirements analysts, not all software developers can make good systems analysts because some do not have skills and understanding of requirements elicitation and gathering process and other aspects involved in systems analysis (Firesmith, 2003). System analysts are bestowed with gathering facts regarding existing information systems, analyzing the basic approaches and procedures of the current system, determining information needs, and redesigning and performing integration of the existing procedures relating to the specifications of the new systems. Since the specialization of the programmer is in software development, shifting focus to system analysts' work might be hectic and may not deliver the best of requirements gathering for any given project. Therefore, based on the comparative analysis performed, in most cases, it is difficult for the programmers to become good system analysts and vice versa as each of the two has different job specifications and specializations.

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