RATIONALE

Financial management plays a pivotal role in ensuring the responsible and efficient use of taxpayers' money. Government agencies are entrusted with public funds and assets, and it is imperative that they maintain a high level of transparency, accountability, and accuracy in their financial operations. One significant aspect of this process involves the participation of procurement bidders who have been awarded contracts. That is why procurement bidders, including DSA Marketing, Inc., were awarded the responsibility of financial management stand as a pivotal element. There are compelling reasons why governments, particularly the barangays in the Philippines, necessitate the active involvement of procurement bidders in financial management.

The foundation of this imperative lies within the legal framework underpinning the Philippine governmental structure. Article IX-D, Section 2(2) of the 1987 Philippine Constitution grants the Commission on Audit (COA) the authority to promulgate accounting rules and regulations. Meanwhile, Section 334(c) of Republic Act 7160, also known as the Local Government Code of the Philippines, emphasizes the simplified manner prescribed by the Commission on Audit for maintaining the financial records of barangays within the city or municipality. Furthermore, COA Resolution No. 2014-003 mandates the adoption of the Philippine Public Sector Accounting Standards (PPSAS) by all government agencies, reinforcing the necessity for alignment between barangay accounting practices and these standards. Hence, procurement bidders like DSA Marketing, Inc., who have been awarded contracts by government agencies are essential stakeholders in the financial management process.

Procurement bidders play a crucial role in ensuring compliance with procurement laws, including Republic Act No. 9184 or the Government Procurement Reform Act. These bidders possess a deep understanding of the legal and regulatory framework governing government contracts and procurement, helping agencies navigate the intricacies of procurement processes while adhering to these laws. Additionally, procurement bidders are responsible for generating and maintaining crucial financial documents such as Acknowledgment Receipts, Purchase Orders, Financial Statements, and various documents needed. They ensure that these documents adhere to the prescribed formats and standards, promoting transparency and accountability in financial transactions.

Government financial management is not just a matter of handling public funds but also a commitment to transparency, accountability, and adherence to established standards. The legal framework, including the 1987 Philippine Constitution, the Local Government Code, and COA resolutions, places significant

emphasis on following specific financial management practices. Procurement bidders like DSA Marketing, Inc., who have been awarded contracts play a pivotal role in this process, ensuring that government agencies comply with the law, maintain accurate financial records, adhere to international standards like PPSAS, and engage effectively with platforms like PhilGEPS. By doing so, they contribute to the efficient, responsible, and ethical management of public resources, ultimately benefiting the Filipino people.
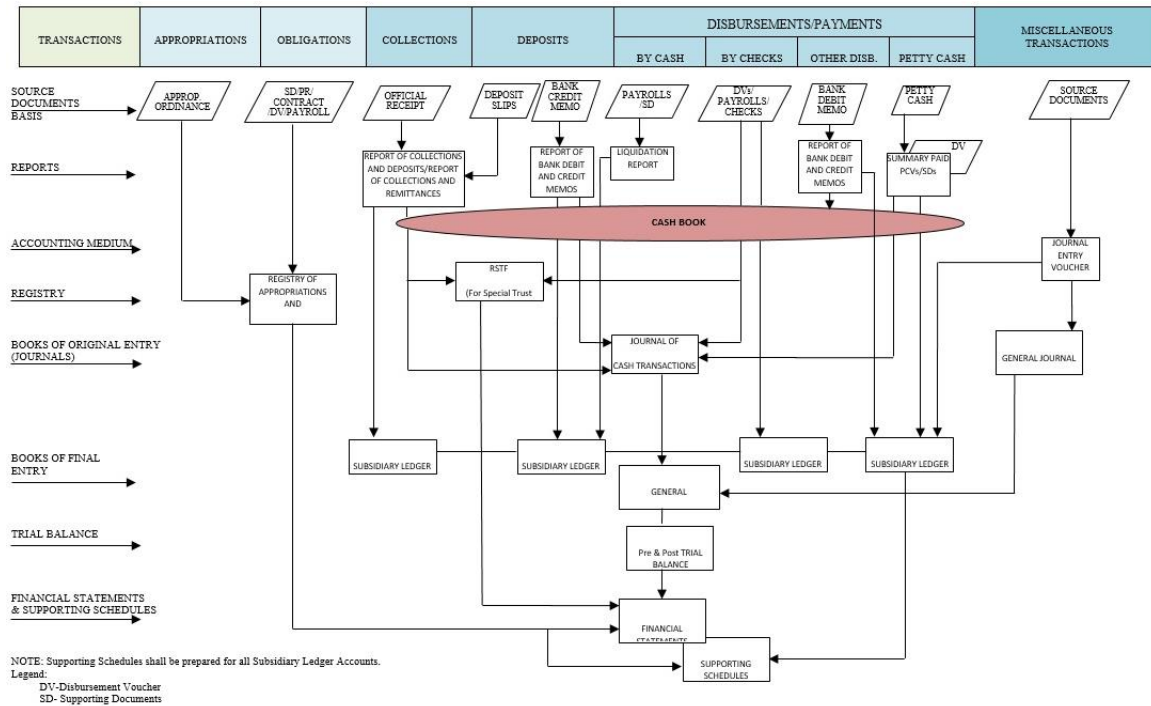

Figure 1. Barangay Accounting Plan

In the context of DSA Marketing, Inc., it is unequivocal that financial documents play a vital role in managing government procurement projects. However, the current process of handling financial documents, such as Acknowledgment Receipts, Purchase Orders, Financial Statements, and other various documents that are needed is manual and time-consuming. For years, the company has handled financial management through manual data entry process, which presents tremendous amounts of inefficiency as well as prone to errors. Thus, this inefficiency is expected to result in delays in project execution and hinders compliance with legal and regulatory requirements. To address these challenges, the author proposes the development of a Project called Aneta, which is a simple comprehensive Government Procurement Financial Management System (GPFMS) tailored to the specific needs of DSA Marketing, Inc.

MISSION STATEMENT

The project mission is to help our clients achieve their goals by providing them with the tools they need to manage their finances effectively and comply with legal and regulatory requirements.

The mission objective is to develop a system with a robust database system that empowers DSA Marketing to efficiently manage their financial operations while ensuring strict adherence to legal and regulatory mandates. This entails the creation of a comprehensive database that seamlessly integrates existing transactions, associated transaction documents, and ordered items within each transaction, streamlining financial record-keeping, compliance tracking, and reporting processes. The following are the specific objectives:

Efficiency Improvement. Reduce the time and effort required to create financial documents, ensuring that project documentation is generated quickly and accurately.

Standardization. Implement standardized templates and formats for financial documents to enhance transparency and accountability in financial transactions.

Maintain Information. The system must maintain information about the existing transactions as well as its transaction documents. The transaction documents are the Purchase Request, Purchase Order, and Abstract Quotation.

With this, the project aims to enhance DSA Marketing's financial management capabilities, foster efficiency, and facilitate informed decision-making in alignment with their specific financial objectives and regulatory obligations. Hence, the database will provide the existing transactions with its transaction documents and the items ordered that are within this transaction.

PROJECT BENEFITS

The implementation of the Government Procurement Financial Management System will yield several benefits for DSA Marketing, Inc. and its clients, including:

Time Savings. Drastically reduce the time required to generate financial documents, enabling faster project execution.

Enhanced Compliance. Ensure strict adherence to government procurement laws and regulations, reducing the risk of legal issues.

Improved Transparency. Standardized formats and integration with PhilGEPS will enhance project transparency, fostering trust and accountability.

Accuracy. Minimize the risk of errors associated with manual document creation, ensuring accurate financial records.

Efficient Resource Management. Optimize the use of resources, leading to responsible financial management.

User-friendly Interface. A user-friendly interface accessible to DSA Marketing, Inc. staff, enabling them to easily create and manage financial documents.

Document Generation. Automated generation of financial documents in compliance with prescribed formats and standards.

Database Management. A secure database to store and manage all project-related financial data, ensuring data integrity and accessibility.

PROTOTYPE

The viability of the project lies in the meticulous selection of an appropriate system design and application technology stack. This selection should align with the goals of feasibility, measurability, achievability, and cost-effectiveness. Fortunately, achieving this goal is possible by adhering to a methodical process, which guarantees the successful realization of Project Aneta, from prototyping to implementation.

Envisioned Project Development Stages

Project Aneta will embrace the Agile methodology as its core framework within the Software Development Life Cycle (SDLC). While the conventional Waterfall approach is commonly used in software and web development, applying it to a real-world web application development project like Aneta is unrealistic due to its challenge and idealistic nature.

The linear and sequential structure of the Waterfall SDLC doesn't align with the needs of Project Aneta. In practice, unexpected challenges can arise during development, necessitating alternative solutions that can impact earlier stages of the process. Therefore, Project Aneta will pivot towards the Agile Model, departing from the anticipated linear and sequential trajectory of the Waterfall Model. This shift promises notable benefits, primarily centered around increased flexibility.

The primary objective of adopting the Agile Software Development model is to expedite project completion while preserving adaptability. Agile's defining characteristic, illustrated in Figure 1, revolves around its iterative and incremental approach, empowering developers to respond dynamically to unforeseen circumstances as the development journey unfolds.

In contrast to the Waterfall SDLC, which demands meticulous upfront planning and structuring, the Agile Model allows developers to continuously

refine and adjust the project as it progresses. The inflexible, sequential nature of the Waterfall model can lead to unaddressed issues or errors.
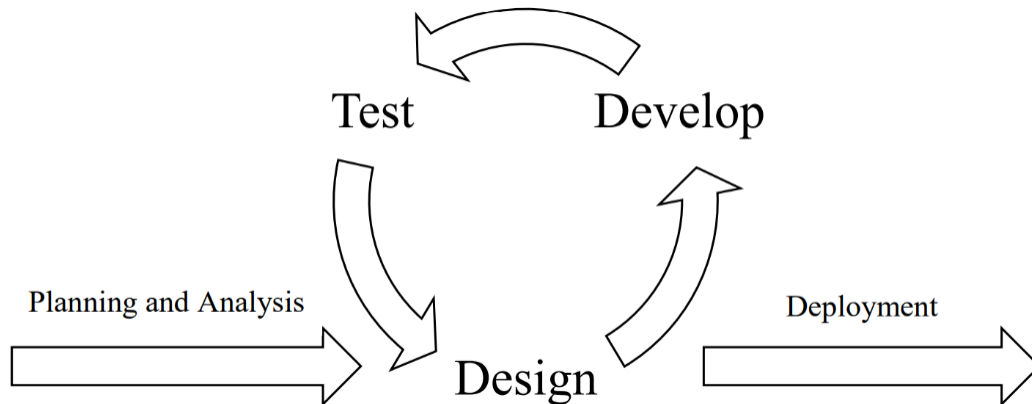

Figure 2. Agile Software Development Life Cycle Model

Considering these compelling reasons, the project leader has made an informed decision to embrace the Agile Model, aligning it with the unique requirements of Project Aneta. This SDLC model offers a plethora of advantages, including enhanced adaptability, efficiency, flexibility, ongoing iteration, a heightened success rate with reduced time commitments, risk mitigation, and cost-efficiency. Consequently, the planned phases of the project will be carried out under the Agile Model's umbrella.

Planning and Preliminary Analysis Phase

In the Planning and Preliminary Analysis Phase of Project Aneta, we will lay the foundation for the development of the Government Procurement Financial Management System (GPFMS). This phase is critical to ensure that the project is well-structured, feasible, and aligned with the objectives outlined in the project proposal. This is a crucial step in ensuring the successful development of the Government Procurement Financial Management System. By conducting a feasibility study, gathering requirements, defining the technical stack, and planning the project's scope and schedule, we will establish a solid foundation for the project's execution under the Agile methodology. This phase will set the stage for efficient development, alignment with project objectives, and stakeholder satisfaction.

Feasibility Study

We will begin by conducting a feasibility study to assess the viability of the project. This study will involve evaluating technical, economic, operational, and

scheduling aspects to determine if the proposed GPFMS is both achievable and cost-effective. Key considerations will include:

Technical. The evaluation of whether the chosen technology stack can support the development of the system and if it aligns with the project's goals. This includes assessing the compatibility of Blazor, Dapper, MySQL, TailwindCSS, and MudBlazor for the project.

Economic Feasibility. The estimate of the project's budget requirements, considering factors such as development costs, hardware and software expenses, and potential return on investment (ROI).

Operational Feasibility. The analyzation of how the GPFMS will fit into the existing operations of DSA Marketing, Inc. and whether it will improve efficiency and streamline financial management.

Scheduling Feasibility. We will create a preliminary project timeline, identifying key milestones and potential bottlenecks.

Requirements Gathering

During this phase, we will engage stakeholders, including DSA Marketing, Inc. staff, to gather detailed requirements for the GPFMS. This will involve conducting interviews, surveys, and observation to understand the specific needs and preferences of the end users. However, prior to the proposal, the project lead has already conducted surveys with the employees and the owner of DSA Marketing. Furthermore, observations were also conducted for more than years. Hence, the Key areas of focus will now only include document generation and management requirement; compliance with procurement laws and regulations; User interface design preferences; and access control requirements.

Review of the Current System

After thorough observation within the company, the current data exports are done through mutable files. Moreover, the following are the characteristics of the current system that is adopted in DSA Marketing:

- Outdated Financial Management Practice
- Word and Spreadsheet Document Files
- Paper records in file folders

Missing Requirements

The current system clearly adopts a traditional financial management system. Hence, the system does not utilize the modern practice of handling such management system. The current system suffers from a bottleneck, specifically, in the data entry process since it is done manually. The project will use the current system as a guide, however, not a model. Otherwise, the same problems may arise in the deployment of the system within the company.
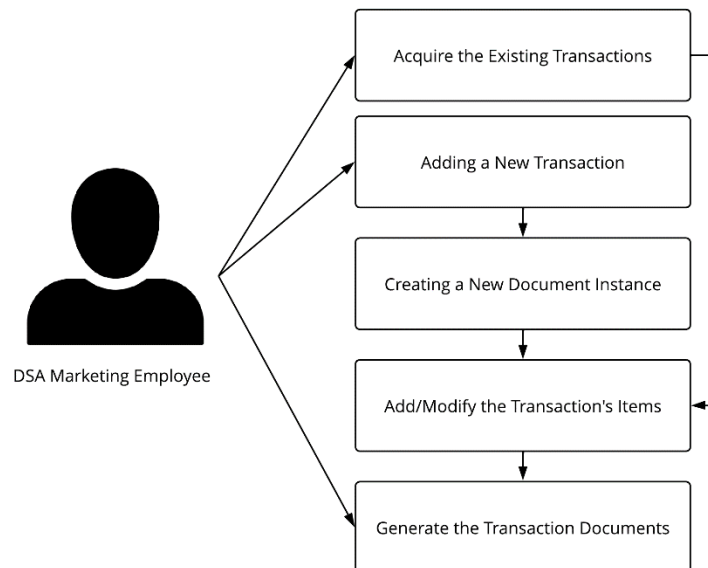
Locating Stakeholders

Figure 3. DSA Marketing Employee Tasks

Business Rules

After conducting an observation and interview within the company, the following are the business rules that must be followed:

- Every Transaction must have the information about the client Municipality and a Barangay Name
- Each Transaction must label the Punong Barangay and Treasurer
- Each Transaction will always have a list of transaction items with the following information:
    o Unit
    o Particulars
    o Cost
    o Amount

- o Total Price
- Each Transaction must generate Purchase Request, Purchase Order, and Abstract Quotation.

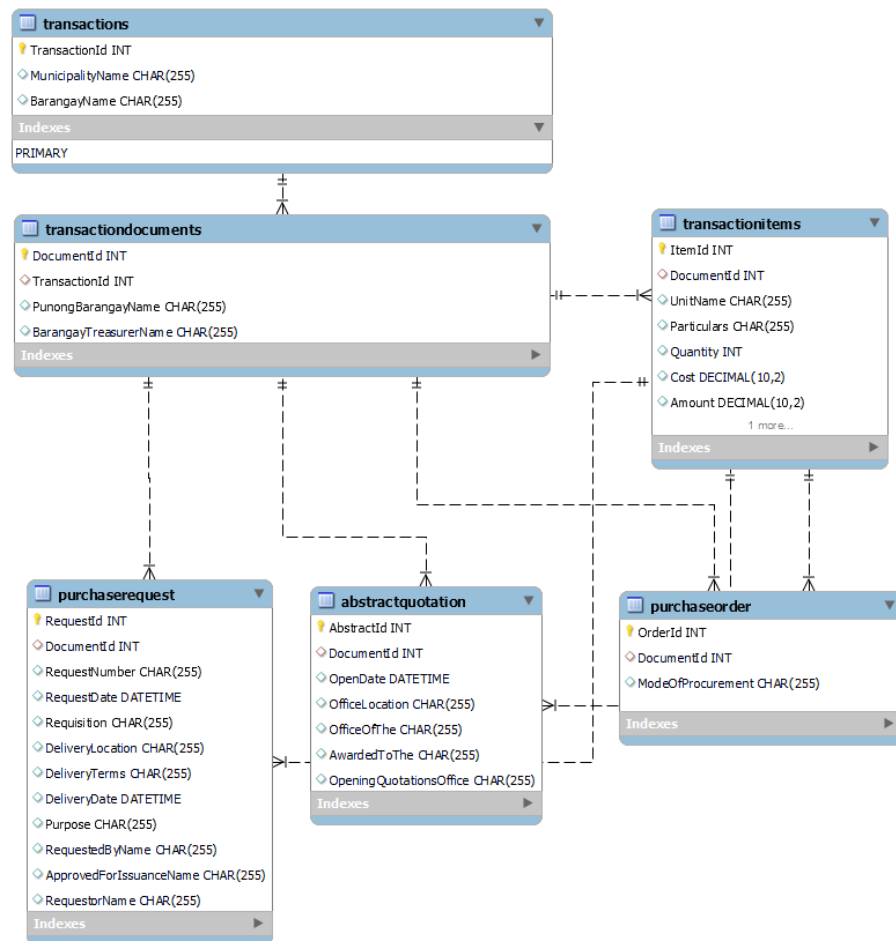**Database Entity Diagram**

Figure 4. Tentative DB Entity Diagram

Technical Stack

The selection of the appropriate technology stack is crucial to the success of Project Aneta. Our choices are based on the project's objectives, the skills of our development team, and the compatibility of the technologies. The following technical stack has been chosen for this project:

Front-End Development: We will leverage Blazor, a framework for building interactive web applications using C# and .NET. Blazor's ability to use C# for both

server-side and client-side development aligns well with the project's goals. TailwindCSS will be used to create a modern and responsive user interface. Its utility-first CSS framework will enable us to rapidly design and develop a user-friendly interface. Moreover, MudBlazor, a popular Blazor component library, will be employed to enhance the UI's functionality and aesthetics. It offers a wide range of pre-built components that can be customized to suit the project's needs.

Back-end Development: MySQL will serve as the relational database management system (RDBMS) for storing and managing project-related financial data. Its robustness, performance, and open-source nature make it a suitable choice.

Project Scope Definition

During this stage, we will define the specific scope of the GPFMS project. This includes outlining the features, functionalities, and modules that the system will comprise. The scope will be documented in a detailed project scope statement that will serve as a reference point throughout the project's lifecycle.

Work Breakdown Structure (WBS)

A Work Breakdown Structure will be used to divide the project into manageable tasks and sub-tasks. Each task will be assigned, and dependencies between tasks will be identified to ensure a smooth workflow.

Risk Assessment

Potential risks and challenges that may arise will be identified during the project and develop mitigation strategies to address them. This proactive approach will help us minimize disruptions and ensure project success.

Stakeholder Engagement

Effective communication with stakeholders, including DSA Marketing, Inc. and end users, will be a priority throughout this phase. We will keep stakeholders informed about project progress and seek their feedback to ensure the system aligns with their expectations.