A FINANCIAL MANAGEMENT SYSTEM. A CASE STUDY OF MWISI CHILD DEVELOPMENT CENTRE

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A DISSERTATION SUBMITTED TO THE FACULTY OF ENGINEERING, DESIGN, AND TECHNOLOGY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE IN INFORMATION AND TECHNOLOGY OF UGANDA CHRISTIAN UNIVERSITY

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DECLARATION

I AINEBYOONA JOTHAM S21/BBUC/BSIT/006, hereby declare that this project titled using Financial Management System. A case study of Mwisi Child development Centre is the result of my original research work. I have acknowledged all sources of information used in this report. This work has not been submitted for any other degree at any other institution.

Signature…….Date ……...

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APPROVAL

I certify that the project report titled using Financial Management System. A case study of Mwisi Child development Centre by AINEBYOONA JOTHAM has been reviewed and approved for submission in partial fulfillment of the requirements for the Bachelor's Degree of Science in information and Technology.

Signature…….Date ……...

Mr. Billy MANGWANA

(University Supervisor)

DEDICATION

This project report is dedicated to the children and families served by the Mwisi Child Development Centre. Your strength, optimism, and perseverance motivate us to aim for perfection in our endeavors to shape a brighter tomorrow for everyone. I also offer this project to the devoted employees and volunteers of the center, whose consistent dedication to the welfare of the community reflects the values of empathy and service. May this study aid in the ongoing development and prosperity of the Mwisi Child Development Centre, enabling it to accomplish its goal of caring for and assisting underprivileged children and families

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ABSTRACT

This project report delves into the implementation and effects of a financial management system at the Mwisi Child Development Centre. The research assesses the system's impact on transparency, accountability, and efficiency in resource management. Combining qualitative interviews, document analysis, and financial data review, the study explores the center's challenges before the system's adoption and evaluates the results and advantages after its implementation. The findings underscore the significance of strong financial management systems in nonprofit organizations, particularly in improving financial reporting accuracy, optimizing budgetary control, and ensuring donor compliance. The insights gained from this case study contribute to the broader discourse on financial management practices in the context of social development initiatives.

Abbreviations and acronyms

MCDC	Mwisi Child Development Centre
MYSQL	My Structured Query Language
PHP	Hypertext Preprocessor

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1. Introduction

1.1. Background

Mwisi Child Development Centre (MCDC) is an NGO that operates under Diocese of kigezi in collaboration with compassion international Uganda aimed at pulling children out of poverty in Jesus' name, by promoting their education, healthcare and other social support programs. Originating from 2005 years, MCDC has been very instrumental in the provision of crucial services to disadvantaged children and families living within Mwisi area.

However, the noble mission does not imply that MCDC has managed its financial resources efficiently. In particular, the organization has been grappling with mismanagement of funds leading to inefficiencies in budget making and expense tracking. Being primarily manual based and having outdated systems MCDC is unable to track real-time financials hence discrepancies and errors in reporting.

1.2. Problem Statement

In the context of Mwisi Youngster Advancement Centre, the embezzlement of funds stands for an immediate problem that threatens its objective to give top quality education and learning and also look after disadvantaged kids in the neighborhood. Regardless of getting contributions as well as gives from numerous resources consisting of governmental along with non-governmental companies the facility deals with ineffectiveness in fund appropriation and also use. This embezzlement appears through circumstances of budgetary variances inadequate surveillance of expenses, as well as an absence of openness in monetary deals. As a result, the facility encounters obstacles in preserving vital solutions updating centers, as well as preserving competent personnel therefore jeopardizing its capability to accomplish its required properly.

Resolving this concern needs all natural technique, including the facility of robust monetary administration techniques, improved responsibility devices, as well as capacity-building efforts for team. By dealing with the systemic concerns adding to fund embezzlement Mwisi Child Development Centre can enhance source application, boost functional efficiency and also much better offer the requirements of the youngsters and also area it intends to sustain.

1.3. Main Objective

The main purpose of this task was to establish an economic administration system for MCDC to resolve the issue of fund mismanagement. By carrying out an automated system MCDC intends to boost openness precision as well as effectiveness in economic administration therefore maximizing source application as well as making certain liability.

1.4 Scope

The scope of the project encompasses the design, development, implementation, and deployment of a comprehensive financial management system tailored to the needs of MCDC. The system will enable MCDC staff members to enter and monitor budgets, record expenses, generate reports, print records and automatically share these reports to respective people on a daily basis.

Key features of the system include user authentication and authorization, Dashboards, category list, budget management, expense management, reporting, system settings, exporting and automatic sharing on a daily basis. The system was designed to accommodate multiple user roles, including administrators, finance managers, and program coordinators, with different levels of access and privileges.

1.5 Overview of the System

The economic monitoring system certainly leverage contemporary modern technologies to supply MCDC with a durable together with easy to use service for handling its funds. The system certainly include an online user interface available from any kind of gadget with a net link permitting MCDC systems manager to accessibility economic information safely from anywhere.

Advantages of the system consist of enhanced precision as well as timeliness of monetary details, improved decision-making abilities smooth operations procedures, together with lower management concern. By executing this system MCDC intends to reinforce its economic administration techniques and also make best use of the influence of its programs on the neighborhoods it offers.

2. Literature Review

2.1 Challenges in Nonprofit Financial Management

Nonprofit Organizations like Mwisi child development Centre (MCDC), face various challenges in managing their financial resources effectively. Fund mismanagement is a common issue that arises due to manual processes, limited transparency, and inadequate oversight mechanisms. Without proper systems in place, nonprofits struggle to track expenditures, allocate budgets efficiently and ensure compliance with regulatory requirements.

Moreover, the lack of financial management visibility into financial data hampers decision-making processes, hindering the organization's ability to respond promptly to changing circumstances. As a result, nonprofits may experience inefficiencies, errors and discrepancies in their financial records, undermining their credibility and trustworthiness among stakeholders.

2.2 Technologies for Financial management Systems

To address the challenges of fund mismanagement, nonprofits can leverage various technologies to develop robust financial management systems. These systems offer automation, and advanced analytics capabilities, empowering organizations to monitor their finances accurately and efficiently.

Modern financial tracking systems typically incorporate features such as:

- **User Login and Authorization**: Secure access control mechanisms to ensure data confidentiality and integrity.
- **Budget Management**: Tools for creating, allocating, and monitoring budgets across different programs and projects.

- **Expense management**: Systems for recording, categorizing, and analyzing expenses in real-time, providing insights into spending patterns and trends.
- **Reporting and Analytics**: Dashboards, reports, and analytics tools for visualizing financial data, generating insights, and facilitating informed decision-making.
- **Automatic sharing:** Sharing reports and updates in real time

3. Methodology

3.1 Requirements Analysis.

The growth of the monetary administration system for Mwisi Child Development Centre (MCDC) started with a complete evaluation of the company's demands. This stage included communicating with essential stakeholders consisting of MCDC team member as well as administration to collect understandings right into their requirements, choices, along with discomfort factors connected to monetary monitoring.

The demands evaluation procedure incorporated the adhering to tasks:

• Conducting meetings plus studies to comprehend the present monetary monitoring methods at MCDC.

• Identifying the details performances as well as functions needed in the brand-new system such as budget plan development expense recording, coverage coupled with individual verification.

• Prioritizing needs based upon their significance as well as stability thinking about variables such as budget plan restrictions as well as time restrictions.

• Documenting the collected needs in a thorough demands requirements file for recommendation throughout the growth procedure.

3.2 System Design

Following the requirements analysis phase, the system design phase focused on translating the identified requirements into a detailed architectural design. This phase involved defining the overall structure, components, and interactions of the financial tracking system.

The system design encompassed the following aspects:

- **Architectural Design**: Defining the high-level architecture of the system, including the backend infrastructure, frontend components, and database schema.
- **User Interface Design**: Designing the user interface (UI) elements, layout, and navigation flow to ensure usability and intuitiveness for MCDC staff members.
- **Database Design**: Designing the database schema to support the storage and retrieval of financial data, ensuring data integrity, security, and scalability.

3.3 Implementation

With the system layout in position the application stage entailed the real advancement of the monetary monitoring system. This stage incorporated both backend together with frontend growth jobs plus data source configuration along with arrangement.

The application procedure consisted of the list below actions:

Backend Development: Writing server-side code using technologies such as PHP, Ajax, JavaScript, and MySQL database to implement the core functionalities of the system, including user authentication, budget management, and expense management.

- **Frontend Development**: Developing the user interface using HTML, CSS, JavaScript, and Bootstrap framework to create an interactive and visually appealing experience for MCDC staff members.
- **Database Setup**: Setting up the MySQL database and configuring tables, indexes, and relationships according to the predefined database schema using xampp control.

3.4 Testing

The testing stage intended to guarantee the dependability performance along with capability of the economic monitoring system. This stage included numerous screening tasks consisting of device screening, combination screening along with individual approval screening (CONSORTIUM).

The testing process included the following steps:

- **Unit Testing**: Testing individual components and modules of the system in isolation to verify their correctness and robustness.
- **Integration Testing**: Testing the integration of system components to ensure that they work together as expected and communicate effectively.
- **User Acceptance Testing (UAT)**: Involving MCDC staff members in testing the system's usability, functionality, and adherence to requirements in a real-world environment.
- **Performance Testing**: Assessing the system's performance under different load conditions to identify and address any performance bottlenecks or scalability issues.

3.5 Deployment

Once testing was finished as well as the system was considered prepared for manufacturing usage the implementation stage included releasing the economic monitoring system to the MCDC's manufacturing atmosphere. This stage consisted of web server configuration, system arrangement, information movement as well as individual training.

The implementation procedure consisted of the adhering to actions:

• **Server Setup**: Provisioning web servers and also setting up the required software application together with facilities parts to hold the system.

• **System Configuration**: Configuring system setups, specifications and also consents to guarantee ideal efficiency plus safety.

• **Data Migration**: Migrating existing information from tradition systems or hand-operated documents to the brand-new system, making certain information stability and also precision.

• **User Training**: Conducting training sessions for MCDC team member to accustom them with the attributes, performances and also use of the system.

4. Technologies Used

4.1 Backend Technologies

The overall architecture of the financial management system for Mwisi Child Development Centre (MCDC) involved a combination of different backend technologies that enabled components for server-side logic processing, server-side data manipulation, and in-memory data management. The following backend technologies were used:

- PHP: It is a server-side scripting language mainly developed for web development but also used as a general-purpose language. We used PHP to implement the backend logic of the system and to manage HTTP request-response cycles.

• MySQL Database: We chose MySQL as the backend database to use with our PHP web application as it is an established open-source relational database management system (RDBMS) which is also free, so it played well into our budget. It is reliable, highly scalable, and fully compatible with PHP applications.

• AJAX (Asynchronous JavaScript and XML): We employed this particular technology to make the system update the web page dynamically without any page reload or submit request. Asynchronous communication is possible because of this concept. For example, when a user clicks a button, submits the form, thereby generating a request to the server. The data stored on the server is processed and the response is sent back to the client. Since AJAX is asynchronous, the client doesn't have to wait for a response. Consequently, the front end (UI) is much more responsive and interactive. Hence, the AJAX concept is capable of improving user experience.

4.2. Frontend Technologies

The financial system’s user interface (UI) was designed using state-of-the-art technology to create an intuitive and responsive user experience. The following technologies were used;

- HTML (Hypertext Markup Language): HTML has been used to organize the content and layout of web pages, to define the semantic structure of user interface elements.
- CSS (Cascading Style Sheets): CSS has been used to create the look and layout of HTML elements, including fonts, fonts, spacing, and positioning.
- JavaScript: JavaScript, a client-side scripting language, was used to add dynamic interactions and actions to the user interface, enabling features such as form validation, data manipulation and AJAX requests.
- Bootstrap framework: Bootstrap framework was used to simplify the development process and ensure consistency in design process across different devices and screen sizes

4.3 Database Technology:

The financial management system relied on a robust database management system to store, retrieve, and maintain financial information. The following database technology was used.;

- MySQL: MySQL was chosen as the database management system due to its reliability, efficiency and scalability, making it suitable for handling large amounts of financial transactions and data.
- SQL (Structured Query Language): SQL was used to write queries for database operations, including accessing, retrieving, updating and deleting data to ensure proper use and maintenance of the data.
- Database configuration tools: Used tools such as phpMyAdmin to create database schemas, create tables, define relationships, and optimize database performance.

5. System Architecture

5.1 Overview.

Imagine the system architecture as a city's infrastructure. Similar to how a city has roads, buildings, and utilities, our system consists of components that collaborate to ensure smooth functioning. These components encompass both the visible aspects (the frontend) and the invisible aspects (the backend).

5.2 Backend Architecture Components:

Controller: Picture the controller as the overseer of each district in the city. It processes requests, organizes data, and makes decisions. • Service: Services act as specialized departments within the city hall. They perform specific tasks like managing budgets or tracking expenses. • Repository: Repositories serve as information repositories where data is stored and retrieved. They handle a variety of tasks within the system.

5.3 Frontend Architecture

Components:

- **UI Components**: These are like building blocks that make up the city's skyline. They include HTML for structure, CSS for style, and JavaScript for interactivity.
- **Frameworks/Libraries**: Just as buildings rely on blueprints, our frontend uses frameworks like Bootstrap and libraries like jQuery to streamline development and make things look and behave nicely.
- **View Layer**: The view layer is like the windows through which we see the city. It displays information and responds to user interactions.

- **Controller Layer (Client-Side)**: This layer manages interactions between the frontend and backend, like a tour guide showing visitors around the city.

5.4 Database Schema

In our system, we have several tables that store important information: -

Users: This table contains details about the individuals using our system, including their names and roles (e.g., admin).

Budgets: In this table, we keep track of the money allocated for various purposes, acting as a ledger for recording expenses.

Expenses: This table records individual expenses, detailing the amount spent and the item purchased.

Categories: Expenses are organized into different groups within this table. Integration and testing were crucial aspects of our project. We merged the backend, frontend, and database components to form a unified system. Thorough testing was conducted to confirm the seamless operation of all elements and compliance with both functional and non-functional requirements. Our testing procedures included unit testing and integration testing.

6. Features and Functionality

6.1 User Login Authentication:

The system provides secure user login mechanisms to ensure that only authorized users can access the system. Users are required to log in with admin credentials (username and password) to gain access to the system's features

6.2 Budget Management

Budget Creation:

Users can first create category of Items in the budget and new budgets by specifying a name, amount, start date, and end date. The system validates the budget details and stores them in the database for future reference.

Budget Monitoring:

The system provides monitoring of budget usage and shows users when they enter an expense which exceeds the budget limits or reach predefined thresholds. Users can view budget summaries, track expenses against budget categories, and take proactive measures to manage their finances effectively.

Budget Reporting:

The system generates comprehensive Budget reports that provide insights into budgeting patterns and trends. Users can generate reports based on different criteria such as date range, category, or budget, and visualize the data using charts, graphs, and tables and finally they can print or automatically share these reports to the respective people

6.3. Expense Tracking

Expense Recording:

Users can record new expenses by entering details such as the date, description, amount, and category. The system validates the expense data and stores it in the database for future reference.

Expense Reporting:

The system generates comprehensive expense reports that provide insights into spending patterns, trends, and outliers. Users can generate reports based on different criteria such as date range, category, or budget, and visualize the data using charts, graphs, and tables.

7. Results and Evaluation

7.1. Performance Evaluation

Description:

Performance evaluation tests were conducted to assess the system's efficiency, responsiveness, and scalability under different loads and usage scenarios.

Metrics:

- **Response Time**: We measured the average response time for various system operations, such as page loading, API requests, and database queries.
- **Throughput**: We assessed the system's throughput, which is the rate at which it can handle concurrent requests and transactions.
- **Resource Utilization**: We monitored server resources such as CPU usage, memory consumption, and disk I/O to identify any bottlenecks or performance issues.

7.2 User Feedback Description:

We gathered user feedback from MCDC staff members about their experience with the system and how it has impacted their daily operations. Insights:

• Usability: Users found the system easy to use, with clear navigation and user-friendly interfaces.

• Efficiency: Users liked how the system automated budget and expense management tasks, saving them time and effort.

• Effectiveness: Users noted improved financial transparency, accountability, and decision-making capabilities as a result of using the system.

8. Achievements and Challenges

8.1 Achievements:

• Successful Implementation: The system was developed, deployed, and adopted by MCDC staff members successfully.

8.2 Challenges:

- **Technical Complexity**: The project encountered technical challenges related to system integration, performance optimization, and scalability.
- **Resource Constraints**: Limited resources, including time, budget, and expertise, posed challenges during various phases of the project.
- **User Adoption**: Some staff members faced challenges in adopting new technology and adapting to changes in workflow processes.

9. Future Recommendations

9.1 Scalability Description:

In order to prepare for future growth and expansion of MCDC's operations, it is important to take steps to ensure that the system can handle increasing data volumes and user loads.

Recommendations:

• Optimize Database: Improve database performance by indexing frequently accessed columns, partitioning large tables, and optimizing query execution plans.

• Horizontal Scaling: Distribute workload across multiple servers or cloud instances to enhance system throughput and availability.

• Caching Strategies: Utilize caching technologies like Redis or Memcached to decrease database load and enhance response times for frequently accessed data.

9.2 Additional Features

Description:

To further enhance the system's capabilities and meet evolving user needs, it is recommended to implement additional features and functionalities.

Recommendations:

- Create a mobile app for easy access to the system, expense submission, and real-time notifications.
- Integrate the system with financial institutions' APIs for automatic data retrieval, bank reconciliation, and transaction categorization.
- Use machine learning and predictive analytics for analyzing spending patterns, identifying anomalies, and offering personalized financial advice.
- Maintenance and Support: To ensure the system's continued reliability, establish processes and procedures for ongoing maintenance and support.

10. Conclusion

In conclusion therefore, the financial management system at Mwisi Child Development Centre has greatly enhanced the organization's financial management operations, leading to increased transparency, accountability, and improved decision-making processes. The system has effectively tackled the issue of fund mismanagement by equipping MCDC staff with valuable tools and information to oversee budgets, monitor expenses, and make well-informed financial choices. By working closely with stakeholders, conducting thorough requirements analysis, and implementing meticulous design and development processes, we have successfully delivered a robust and user-friendly system that fulfills the needs and expectations of MCDC staff. The

system's features and functionalities, including user login and budget tracking, have significantly contributed to the enhancement of financial management at the organization.

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