FINANCIAL REQUISITION SYSTEM: ADOPTING AGILE TECHNIQUES IN SOLVING CORPORATE FINANCIAL MANAGEMENT CHALLENGE

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ABSTRACT

This paper addresses a longstanding problem in corporate financial management by introducing a financial requisition system (FRS) using the Agile software programming methodology. While various branches of financial management, including procurement, have evolved their requisition processes, the financial requisition process has lagged in efficiency and transparency. Recognizing this gap, this paper focuses on developing an advanced tool specifically tailored to the financial requisition as an aspect of the financial management system. The proposed financial requisition system integrates user-friendly interfaces and robust backend functionalities, acknowledging the unique complexities of financial requisitions. By learning from the evolution of other branches of financial management, this paper aims to adopt agile methodology in rectifying inefficiencies, enhance transparency, and establish an advanced framework for managing financial needs. The paper contributes to the evolution of financial requisition processes, providing stakeholders and indeed all players in the financial industry with a dedicated and effective solution for managing financial workflows.

Keywords: Financial Requisition, Financial Management, Agile Methodology, Digitised Workflow

INTRODUCTION

Requisition process is a formal way to request specific items or services within an organization (TechTarget, 2023). Over time, it has evolved to include requisition systems that aim to improve organizational management. These systems have multiple layers of review, ensuring effective resource management and alignment with the organization's goals, and checks and balances. One specialized branch of this system is the financial requisition system, which deals with fund allocation and management for projects while handling sensitive financial data.

Despite significant progress, the financial requisition system still encounters several challenges due to its reliance on paper-based forms as evident in most organizations. These issues include fraud, errors, inconsistencies and administrative burdens (2023). To overcome these limitations, a digitalized financial requisition system is developed based on current development methodology. It features a user-friendly interface and a simplified workflow that prioritizes efficiency and transparency. The goal of this paper is to present an enhanced financial requisition process and to enable a more seamless experience for users.

The work done in this paper has the potential to simplify requisition processes, lower expenses, and improve accountability. By providing access to financial data in real time, it enables informed decision-making, simplifies workflows, and fosters success (Kumar, 2023). The paper covers design, development, and implementation, with a focus on capturing and storing comprehensive data and generating automated reports while considering budget constraints all within the confine of the agile software methodology.

LITERATURE REVIEW

A requisition system is a structured process employed by organizations to initiate, approve, and manage requests for specific items, services, or resources (ProcurePort, 2023). According to RVJ (2023), the historical roots of these systems date back to early record-keeping practices in organized societies. During this period, systems heavily depended on handwritten documents and paper forms to formalize requests, a practice that frequently involved approval processes (ControlHub, 2023).

Types of Requisition Systems

Over time, requisition systems have undergone significant changes. Technological advancements and organizational growth have resulted in the categorization of requisition systems into two types - Manual requisition systems which involve filling out paper requisition forms, routing them for approvals, and storing physical documents and Digitized requisition systems which leverage technology to efficiently manage financial requests. With the digital initiation of requests, paperwork is eliminated (Chen, 2023). It makes use of digitized forms, automated routing, and electronic storage while offering a user-friendly interface.

The Financial Requisition System

Requisition systems consists of specialized branches tailored to distinct organizational functions such as the purchase requisition system (Oboloo, 2023), the financial requisition system, the expense requisition system (Tradata Staff Writer, 2023), job requisition systems (Indeed Editorial Team, 2020), and project requisition systems.

The financial requisition system operates systematically, facilitating the initiation, approval, and management of fund allocations for specific financial purposes. It starts with a formal request that outlines financial needs (Frevvoblog, 2021), and goes through a structured approval workflow to ensure alignment with organizational goals and policies (Tipalti, 2023). Once approved, funds are allocated, and the financial transaction is executed, with meticulous record-keeping to maintain transparency and compliance.

This systematic approach is crucial for effective financial resource management within organizations, enabling alignment of financial decisions with budgetary constraints and organizational priorities. By fostering a structured and accountable process, organizations optimize their financial resources, make informed decisions, and contribute to their overall financial well-being and success.

Other Requisition Systems

Digitized Requisition Systems play an important role in facilitating streamlined processes for requesting, approving, and managing resources, expenses, and projects. Some examples include ProcureDesk, Kissflow, and Planergy, each of which meet distinct organizational needs.

ProcureDesk(ProcureDesk, 2021) is an efficient purchase requisition system that is cloud-based. It automates and simplifies manual procurement processes. The system comes with a centralized dashboard that offers real-time visibility, built-in budget tracking controls, customizable approval workflows, catalog management for a marketplace with preferred vendors, automatic purchase order generation, and comprehensive purchase order tracking. ProcureDesk's functionality is further enhanced with its integration with e-commerce websites and robust reporting and dashboard capabilities.

Kissflow Procurement Cloud(Kissflow, 2023) is a powerful source-to-pay platform that aims to improve the efficiency of procurement processes. It prioritizes transparency, control, and operational efficiency by eliminating outdated paper-based and manual workflows. Kissflow operates throughout the procurement lifecycle, enabling seamless communication between suppliers and customers for a quicker and streamlined process. It offers customizable workflows, automated approvals, integration with external systems, robust document management, and vendor management tools. These capabilities, along with additional features like purchase order generation, auditing, and scalability, all contribute to more efficient procurement management.

Planergy(Planergy, 2021) is a cloud-based platform designed for mid-market businesses, which offers comprehensive spend management and accounts payable automation services. This solution is tailored for various industries and empowers procurement, operations teams by streamlining the procure-to-pay process and enabling deep spend data analysis. Key features include easy conversion of approved requests into purchase orders, advanced AI capabilities for automated invoice processing, seamless integration with major accounting software, and extended capabilities in inventory and asset management. Planergy is a versatile choice for organizations seeking to enhance spend management and accounts payable processes, thanks to its user-friendly features and seamless integration options.

These platforms undoubtedly offer a wide array of benefits and enticing features that can significantly enhance an organization's operational efficiency and financial control. However, it is essential to acknowledge that these advantages come at a cost, as these platforms are not typically available for free. Organizations are required to pay recurring fees to access and use them. The subscription fees can vary based on factors like the number of users, the scope of features, and the level of customer support provided. Additionally, implementing these systems often entails upfront costs.

These initial costs cover the setup and configuration of the platform to align with an organization's specific needs and the integration of the system with existing processes and systems. The extent of these implementation expenses can vary widely, depending on the platform's complexity and the organization's size.

While these platforms offer remarkable benefits, it's important for organizations to be prepared for the financial commitment they entail, considering both subscription fees and implementation costs. An accurate evaluation of the platform's potential for improving operational efficiency and financial control should guide the decision, ensuring that the benefits outweigh the costs.

MATERIALS AND METHODS

The development of the system followed Agile principles, which emphasized collaboration, flexibility, and independent feature delivery. This approach allowed the creation of a modular system where each feature underwent independent development and functionality testing before moving on to the next one. The Agile methodology is a five-step approach to software development as follows: (a) Evaluation of processes and the determination of the current structure of the company involving the mapping out of processes to determine the current state and structure and the starting point of the project. (b) Adoption of tested approaches and the combination of optimised processes and technologies for improvement. (c) Client's participation on project design with vital feedbacks. (d) The development and implementation with end-users' involvement in the development process and testing. (e) The evaluation and monitoring stage involving the determination of key performance indices (KPIs), generation of reports and other metrics as agreed by stakeholders.

By embracing Agile principles, the development took a flexible approach to

feature development, treating requisition submission, approval workflows, document attachments, and reporting capabilities as independent units. This methodology allowed for a quick response to changing requirements without disrupting the overall development process (see Figure 1).

Figure 1: The Agile Development Methodology

Unlike the traditional sprint-based model, the focus was on releasing fully functional features independently. This adaptive approach allowed for the addition or modification of features without affecting the overall system. Importantly, the Agile development process adopted embraced flexibility and independent feature releases, constructing a modular and adaptable system capable of efficiently responding to changing requirements while ensuring the autonomy and usability of each feature.

At the design phase, the digital financial requisition system prioritized a user-centred approach, emphasizing efficiency and user-friendliness to meet stakeholder needs. Wireframes and mock-ups played a crucial role during this phase, serving as the foundation for defining the framework. Collaborative design platform (Figma) streamlined the process, translating wireframes into user-centric interfaces that balanced visual appeal with functionality.

Firebase formed the backbone of the system's backend infrastructure, offering scalability and real-time database capabilities supported by

various cloud services. This integration simplified backend development, ensuring seamless operations and system responsiveness while providing an efficient runtime environment capable of handling multiple concurrent requests. On the front-end, *React* with *Vite* accelerated development speed and efficiency was used to create a highly responsive and interactive user experience through *React's* component-based structure and *Vite's* rapid bundling.

The effective combination of *React* with *Vite* and *Firebase* technologies facilitated a seamless transition from detailed interface design to implementation. This cohesive blend of methodologies and technologies ensured a comprehensive approach, resulting in a robust digital financial requisition system that excels in both functionality and user experience. The remainder of this paper discusses the development and functionality of the system through the adoption of this methodology.

Implementation Strategy

The FRS has been designed to prioritize users' needs, with three distinct profiles tailored to specific roles: the Company User, the Requester, and the Approver. The Company User acts as the administrator, responsible for overseeing and managing the company's profile. The Requester takes the lead in initiating requests and managing requisitions, while the Approver has a dual role, responsible for initiating requests and approving routed ones. Each profile is assigned specific responsibilities, including setting up, logging in, creating requisitions, and managing user access, contributing to a well-defined and organized user hierarchy. This design aims to streamline processes, enhance collaboration, and ultimately contribute to the overall effectiveness of the system.

The digital financial requisition system consists of multiple interfaces that together make up the entire system. These interfaces cover a wide range of functions, helping users to navigate the entire process from creating requests, getting them approved, routing and finally recording them meticulously.

The Financial Request Execution Process

To start the requisition process, users are required to fill out a request form that includes important details such as the request title, purpose, the department generating the request, and required amount. Once the request is submitted, it goes through a thorough approval process which includes vetting and recommendation by the requisite authority. Figure 2 is a pictorial of the flow of the various modules and components of the requisition system.
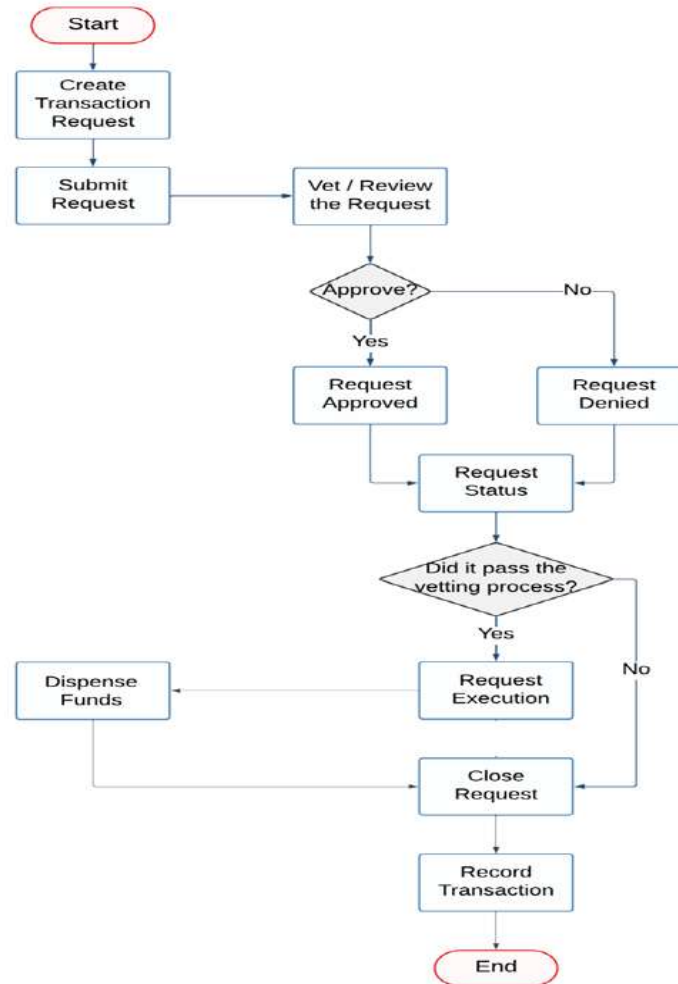

Figure 2: Flow Chart Diagram of the FRS

The lead approver is required to review the request before transmission to the vetting officer. The aim is to ensure that the request aligns with the company's values and that it fulfils other financial requirements. If the request meets the criteria, it is then passed on to a panel of designated approvers for further evaluation. Each approver casts their vote by either approving or rejecting the request. Figure 2 is a pictorial of the flow of activities within the FRS.

After the individual assessments, the request goes back to the lead approver, who reviews it again based on the collective responses and feedback from the vetting officer. If the lead approver decides to reject the request, it is formally declined and the request closed, but the decision must be based on recommendation from the vetting office, or he may veto a decision to override the vetting department, but with explanations. On the other hand, if approved, the request moves on to the approver with the funding authority.

After the funding authority receives the request, the final approval stage starts. Once the request is approved, the funds will be

disbursed according to the approved request tom the requesting department.

Once the task is completed, the requester or requesting department submits evidence of execution alongside the initial request. This is the fund retirement process. The approver with vetting authority then verifies that the funds were used for the designated purpose, thus concluding the request process.

An Overview of the Active Pages with their Dependencies

The active pages are in themselves modules incorporating various functionalities. Single or multiple modules were developed and reviewed with experts with basic accounting knowledge adopting the guiding development methodology. There are eleven active pages that form the entire modules of the system.

The landing page is the first impression of the system granting access to other parts of the system, howbeit, after a successful login has been established. It provides a clear overview of all the functionalities of the system. The users are offered two navigation options - the first is to proceed to the login page if they already have an account, and the second is to sign up if they are new to the system. A summary of the essential features and benefits is prominently displayed on the landing page, which encourages users to explore the system further.

(i) User Type Selection Page

This page simplifies the sign-up process by allowing users to specify their account type. They can choose to register as a business entity or an individual/employee within an organization. The page has clear prompts and an intuitive design to guide users through this crucial decision-making step seamlessly.

(ii) The Sign-Up Page

This page is dedicated specifically to businesses, and it facilitates the creation of organizational accounts within the system. Businesses are prompted to provide essential details such as company name, company email, and password. This information is crucial for establishing a comprehensive company profile within the system.

(iii) Set-Up Pages – Company and Individual

Once the organizational accounts have been created, the next page that appears is the set-up page. This page provides administrators with the ability to configure the system according to the specific needs and structure of their organization. They can add departments, set budgets, designate and organize approvers with funding and verification authority, establish approval hierarchies, and set workflow rules to ensure seamless request processing within the system.

Users or employees can create an account on this page by providing their personal information such as their company ID (which is linked to the registered business), department affiliation, email address, and name. The system verifies the entered company ID against its database to ensure accuracy. After validation, the system provides a list of associated departments for the user to choose from, which ensures a personalized and relevant user experience.

(iv) Login Page

As it is applicable to every authentication-dependent platform, the FRS is designed to accept login details from registered users to access the system. To gain entry, users must input their credentials, which consist of an email and a password. Once users are authenticated, they are then directed to the dashboard where users are given access to the financial requisition system functionalities.

(v) Dashboard Home Page

The dashboard home page (see Figure 3)acts as the central hub for accessing all system functionalities. It provides users with a comprehensive overview of relevant information, such as pending requests, recent requests, notifications, and quick links to essential features.
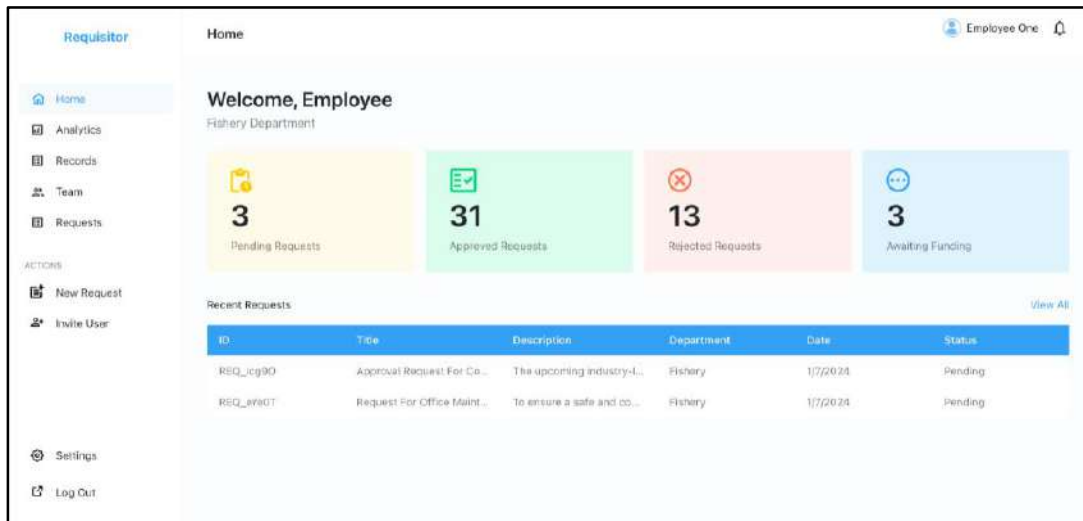
Figure 3: The Dashboard Home Page

(vi)   Dashboard Analytics Page

Designed for decision-makers such as approvers and company administrators, the analytics page offers detailed financial insights through interactive visualizations like charts and graphs. Users can analyse spending trends, track budget allocations, and gain valuable insights to inform strategic financial decisions. The pictorial of the dashboard analytics page is shown in Figure 4.

Figure 4: Dashboard Analytics Page

(vii)   Dashboard Teams Page

This page offers a consolidated view of team members within the organization. Administrators can manage user roles, permissions, and access rights from this centralized location, fostering efficient collaboration and task delegation within teams.

(viii)   Dashboard Records Page

The records page(Figure 5) acts as a comprehensive repository, storing detailed information about all requests processed within the system. Users can search, filter, and review past requests, including their statuses, approvals, and associated documents, promoting transparency and accountability.
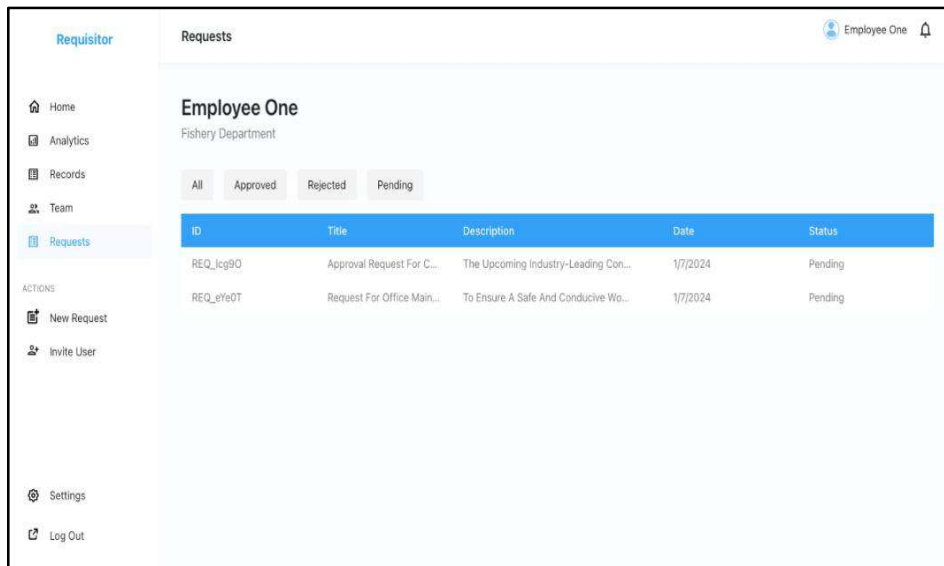
Figure 5: The Dashboard Records Page

(ix) Dashboard Settings Page

Users can access and manage their profile or company information through the settings page. This includes updating contact details, modifying notification preferences, and adjusting security settings to ensure data integrity and privacy.

(x) New Request and Invite Modals

Facilitating the initiation of new requests, this modal provides users with a structured form to input request details such as title, description, request, and any necessary attachments such as images or documents. Clear prompts and validation checks ensure accuracy and completeness before submission (Figure 6).
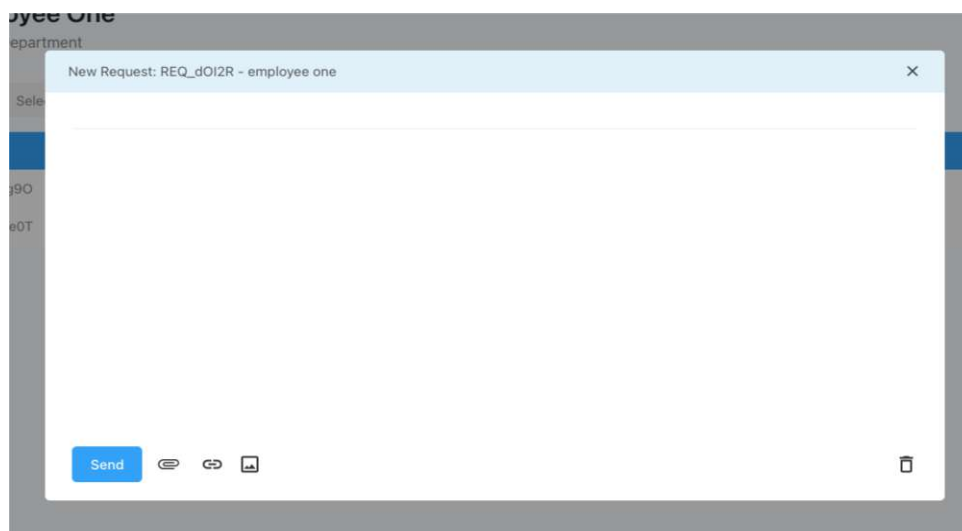

Figure 6:The New Request Modal

(xi) Invite User Modal:

Users can effortlessly invite colleagues to join the system through this intuitive modal. Invited users receive personalized invitations, guiding them through the sign-up process as requesters within the system, fostering seamless onboarding and collaboration across teams(see Figure 7).
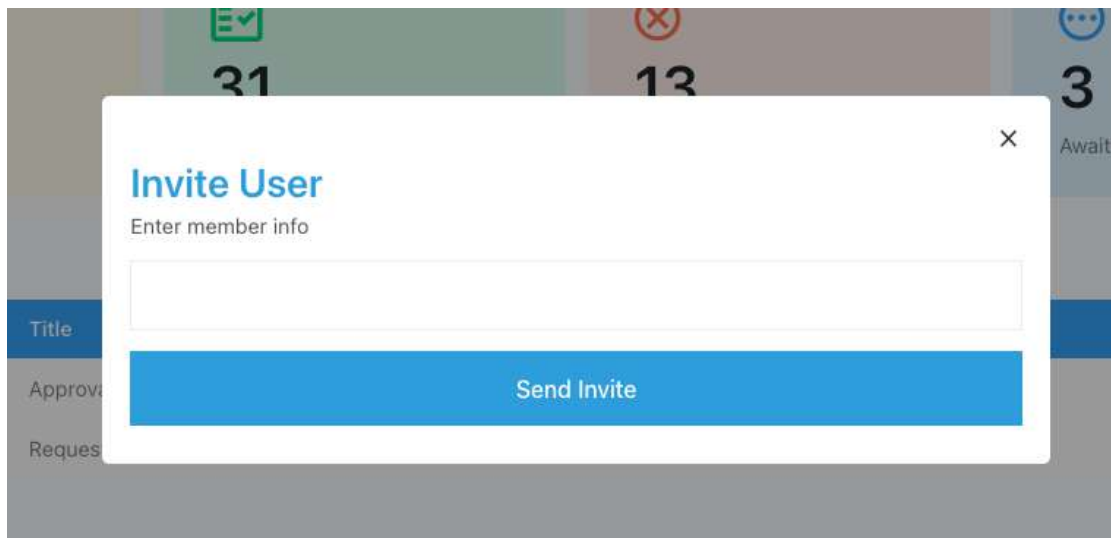
Figure 7: The Invite User Modal

Analysing the Results of FR System

Before the advent of system automation, manual methods were employed to solve problems. Financial requisition was not left out as new methods were developed to solve technological challenges. Despite its low initial cost, simplicity of implementation, easy to understand and use, and flexibility in processing, the challenges with the manual financial requisition systemno doubt outweighs its advantages. These include: time-consuming and labour-intensive, prone to human error with limited scalability, the lack of real-time tracking and monitoring, increased paperwork and storage needs, delayed approval and payment processes, and limited visibility and control.

The introduction of the automated Financial Requisition System led to increased efficiency and speed, reduced human error, scalability and flexibility with the ability of real-time tracking and monitoring, usage of electronic storage leading to minimal paperwork, faster approval and payment processes, improved visibility and control, automated workflows and reminders, and enhanced reporting and analytics.

Despite the advantages, suffice it to say that there are potential obstacles that must be checked to effectively benefit from the advantages. These include: higher initial cost, requirement of technical expertise, training and support needs, dependence on technology and system downtime risks, and potential for technical glitches and errors.

CONCLUSION

Efficient financial management is crucial in today's business environment, but it comes with complexities that need to be tackled. The Financial Requisition System is a solution that simplifies the allocation of financial resources. It offers robust features that enable seamless financial workflow management.

However, there are a few identified gaps that need to be addressed. These gaps include the need for a deeper examination of user experiences, feedback, and usability issues. The limited time and funding during the development of the system suggest untapped potential for additional features and enhancements. Additionally, the system's focus on general financial requisition needs leaves certain branches unexplored. Therefore, there is a need to investigate the system's applicability across diverse industries. By addressing these gaps, the system will become more refined and contribute to the understanding of digitized financial requisition systems in various contexts.

The Financial Requisition System is a game-changer for financial management. It seamlessly integrates digital methodologies to tackle challenges and improve efficiency,

transparency, and adaptability in the requisition processes. While we acknowledge the progress made, it is important to understand that the system's development is a continuous process that requires ongoing efforts to refine and enhance it. The future promises even more advancements, positioning the system to play a pivotal role in shaping the financial requisition landscape.

In summary, the automated financial requisition system offers significant advantages over the manual system, including increased efficiency, reduced errors, and improved visibility and control. While it requires a higher initial investment and technical expertise, it can lead to long-term cost savings, improved productivity, and better financial management.

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