ISSN (online): 2094-9030

Studies in Technology and Education

Volume 5, Issue 2, 2026 | https://www.azalpub.com/index.php/ste

OPEN ACCESS

RESEARCH ARTICLE

COSMITTO: Document Management System

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Article Info

Received: 1-7-2026

Accepted: 3-9-2026

Published: 5-24-2026

Abstract

The developed COSMITTO: Document Management System is necessary due to the increasing quantity of digital documents and the challenges associated with inefficient, manual document handling in Cagayan State University – Aparri Campus. The general objective of this study was to design, implement, and assess COSMITTO System, particularly for the Office of the Campus Executive Officer of CSU-Aparri, to improve the efficiency and accessibility of document management. The study employed an Agile Development Methodology, utilizing PHP, MySQL, and JavaScript, with evaluation conducted by 23 faculty and personnel selected through purposive sampling. The primary tool for evaluation was the ISO 25010:2023 standard, focusing on functional suitability and performance efficiency. The results showed that end-users are satisfied with the COSMITTO System with both functional and non-functional parts, demonstrating significant improvements in processing time and user satisfaction compared to the existing manual system. It was concluded that COSMITTO is highly acceptable, reliable, and addresses the critical documentation bottlenecks. The primary recommendation is for the campus to adopt and integrate COSMITTO to establish a standardized, campus-wide digital document management, with mandatory user training to ensure system integration and adoption.

Keywords: COSMITTO, Document Management System, Agile Model, Document Processing, PHP, MySQL, Javascript

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INTRODUCTION

Cagayan State University is one of the leading higher learning institutions in Region 02. The use of manual filing of documents is a significant challenge in handling the documents, it's time-consuming and requires substantial physical storage space. Also, it introduces the risk of misplacement, loss, or damage to crucial documents. The introduction of digital technology provides a feasible answer to the responsibilities associated with manual document management Document digitization, electronic storage, and automated data management systems improve operational efficiency, increase accessibility, and reduce the dangers associated with physical records. Cloud storage, document management software not only reduce physical space, but also allow for speedy retrieval, secure sharing, and effective cooperation among organizations.

The COSMITTO is a document management system, where it's focused on managing, storing, and tracking active documents, preserving and protecting documents. Also, it provides easy access to information by digitally sharing it with concerned individuals or offices. In the study of Alade (2023) it was concluded that implementation of an electronic document management would enhance user satisfaction, increase productivity, and ensure efficiency in terms of time and data. It was also highlighted that document management system plays a major role in storing and managing a significant portion of an organization's assets.

In Cagayan State University – Aparri Campus, the transition from manual to digitize management of document can emerge as a pivotal transformation. Documents become searchable and accessible, enabling retrieval and sharing of data. This study reduced the time and resources spent on manual document handling. It will also ensure robust data security and integrity that will safeguard sensitive information, ensuring compliance with data protection. The system mitigated the risks associated with natural disasters or unforeseen circumstances.

OBJECTIVES OF THE STUDY

This study aimed to address the existing challenges within the manual record-keeping processes at Cagayan State University - Aparri. By identifying the specific needs of faculty, staff and students, the researcher developed a new system that significantly improves the campus management of records.

CONCEPTUAL FRAMEWORK

The study is derived from RA 9470, which mandates the preservation, management, and accessibility of public records through the National Archives of the Philippines (NAP). To support this, the COSMITTO system was developed to provide secure digital storage and efficient management of records, aligned with the Electronic Records Management Policy (ERMP), which standardizes how electronic records are created, stored, and disposed.

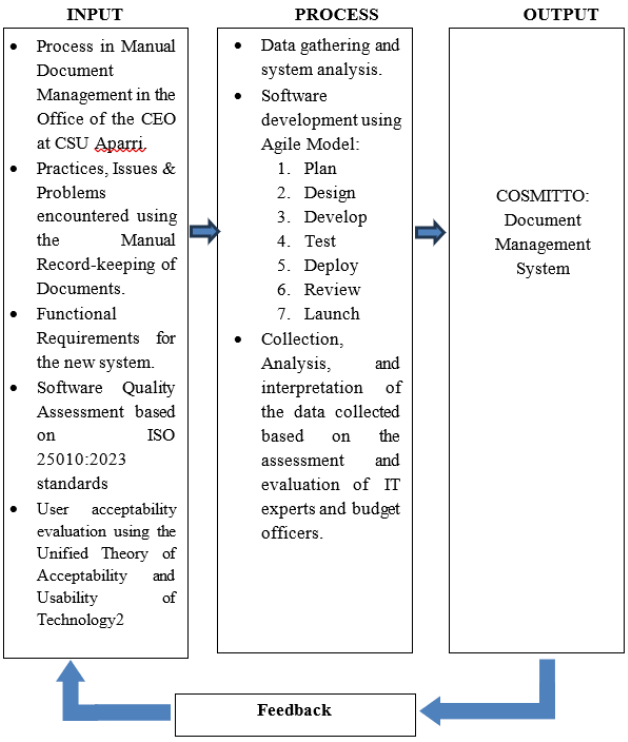

Figure 1. The Input, Process and Output Framework of the Study.

The Input-Process-Output (IPO) Model was used for the development and evaluation of the COSMITTO System for Cagayan State University - Aparri Campus. The IPO (Input-Process-Output) framework describes the new system's component, it shows how it successfully improved the specific needs of the campus for their document management system.

METHODOLOGY

The study made use of System Development using the Agile Model and descriptive research design. The agile software development framework was used to create a more adaptive and collaborative development environment. The model covered the process in the making of the study which includes planning, designing, development, testing, deployment, review and launch.

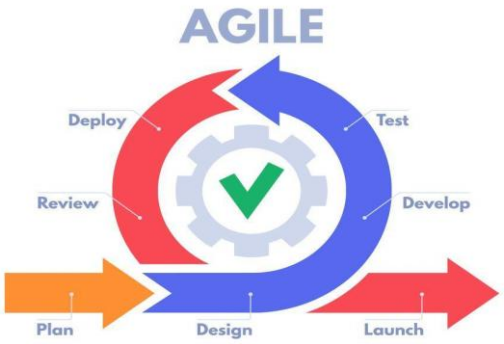

Figure 2: Agile Model for System Development

The respondents of the study were divided into four (4) groups namely: (a) Staff of the Office of the CEO, (b) Records Officer, (c) Campus Officials and Heads of Offices, and (d) IT Experts. Participants were carefully selected based on their current roles and experience within Cagayan

State University. Specifically, end-users are consisting of individuals presently employed in campus administration, including records officers, staff members from the CEO's office, campus officials, and heads of various offices. To ensure relevant insights, these end-users must possess at least one year of experience in their respective administrative roles. At the same time, IT experts participated in the study is derived from the university's IT faculty or staff, requiring over three years of experience and specialized knowledge in information technology and system assessment.

For data gathering, the research instruments employed in the study includes interviews using structured questionnaire, evaluation using the Unified Theory of Acceptability and Usability of Technology2 (UTAUT2), and the ISO 25010:2023 assessment tool. The interview guide was semi-structured, focused on current campus practices, challenges with the existing manual record-keeping, and expectations for a digital solution. Documentary analysis was used to examine the structure of different types of documents. The evaluation and assessment tools were based on the ISO 25010:2023 software quality model, which assessed eight key characteristics: functional suitability, performance stability, compatibility, usability, reliability, security, maintainability, and portability. In addition, Unified Theory of Acceptability and Usability of Technology2 (UTAUT2), is applied to evaluate factors such as perceived usefulness, ease of use, and adoption intention from the perspective of the end-user.

The participants were briefed on the purpose of the study, and to uphold ethical standards, they were asked to complete an informed consent form. Consent was also secured before the interview takes place. To ensure privacy, all data were kept strictly confidential in accordance with RA 10173, also known as the Data Privacy Act of 2012.

RESULTS AND DISCUSSION

In Cagayan State University – Aparri Campus, document handling is dependent on manual filing of documents and it is a significant challenge is in handling the documents, it's time-consuming and requires substantial physical storage space. Also, it introduces the risk of misplacement, loss, or damage to crucial documents. The developed COSMITTO was successfully addressed the critical need for digital transformation. It proves that the system is relevant and accurate tool that save users time and effort. The study also identified opportunities for improvements, including improved user interface, additional functionality, system- level integration, user support, and the development of supporting policies for effective implementation.

A system with features to address the identified problems was developed

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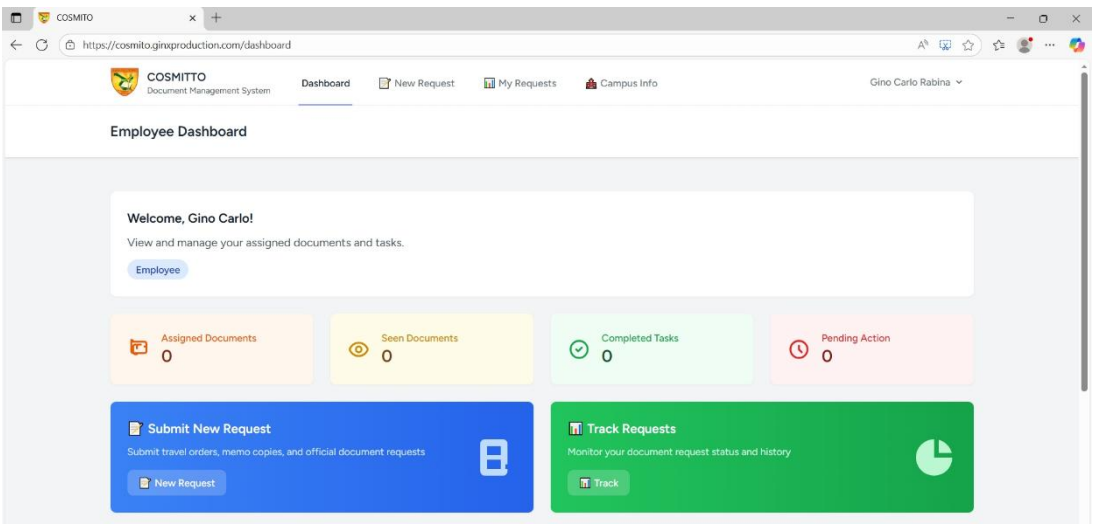

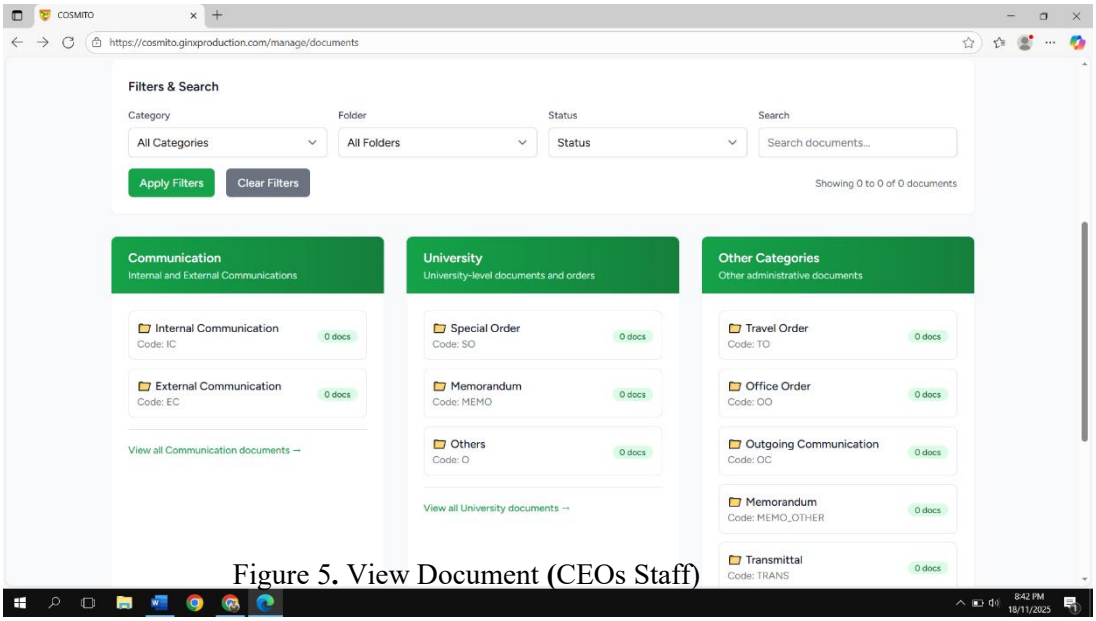

Figure 5. View Document (CEOs Staff)

Figure 3. System Dashboard (Employee)

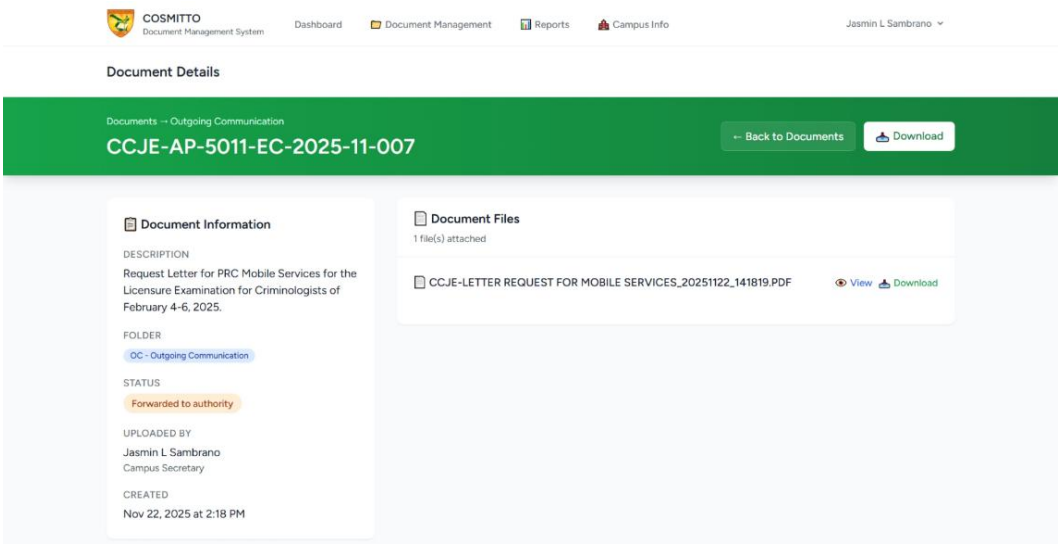

Figure 6: Report Generation

Figure 4: Document Management Tab

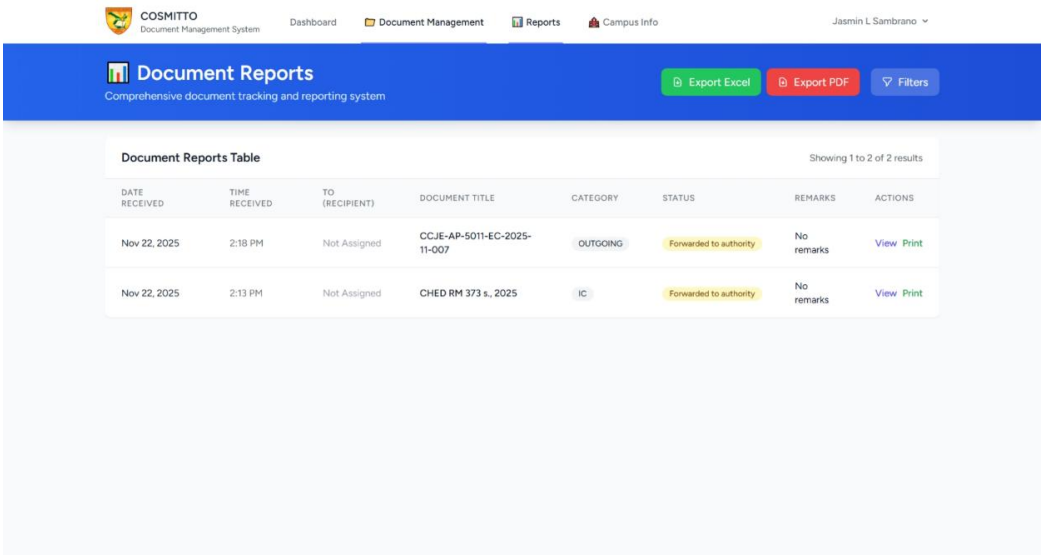

Table 1: Assessment of IT Experts based ISO 25010:2023 Software Quality Standards

ISO Characteristics	Mean	Descriptive Value
Functional Suitability	4.63	Very High Extent
Performance Stability	4.20	Very High Extent
Compatibility	4.10	Very High Extent
Usability	4.18	Very High Extent
Reliability	4.03	High Extent
Security	4.00	High Extent
Maintainability	4.00	High Extent
Portability	4.01	High Extent
Overall Weighted Mean	**4.14**	**Very High Extent**

Table 1 shows the summary of assessment of the developed software by utilizing the ISO 25010:2011 Software Quality Standard. The overall weighted mean of 4.14 shows that the developed system has a very high extent of compliance to the software quality standards. This implies that the system is assessed with high overall quality. Functional Suitability has the highest mean of 4.63, making it as strongest characteristic of the system. This indicates a Very High Extent of compliance, suggesting that the application excels at having the complete and correct set of functions that align with its specifications and user requirements. Security and Maintainability have the lowest mean of 4.0. Although its descriptive value is still "High Extent," this score is the closest to dipping below the 4.0 threshold and indicates the least extent of compliance among all characteristics.

Table 2: User Acceptance on the Developed Project using UTATU2

UTAUT2 Characteristics	Mean	Descriptive Value
Performance Expectancy	4.08	Agree
Effort Expectancy	4.21	Strongly Agree
Social Influence	4.03	Agree
Facilitating Conditions	4.00	Agree
Hedonic Motivation	3.81	Agree
Habit	3.54	Agree
Behavioral Intention	3.74	Agree
Overall Weighted Mean	3.91	**Agree**

Table 2 shows the result of the users' acceptability and usability of the developed COSMITTO system evaluated through the Unified Theory of Acceptability and Usability of Technology2 (UTAUT2) Model. The findings revealed that the participants have a high level of user acceptance in terms of response efficacy (4.31), the system is functional and highly effective in achieving its goals or a solution to the existing problem. The lowest mean is Habit (3.54), it signifies that the behavior of using the system has not yet been fully internalized as an automatic routine. The study of Turel 2015, reinforce the idea that over time, habit becomes the more dominant mechanism in predicting use behavior.

UTAUT2 Characteristics	Mean	Verbal Interpretation
Perceived Ease of Use	3.96	Agree
Perceived Usefulness	4.31	Strongly Agree
Self-Efficacy	4.08	Agree

Response Efficacy	4.38	Strongly Agree
Adoption Intentions	4.12	Agree
Overall weighted mean	**4.17**	**Agree**

Table 3: Perceived Ease of Use and usefulness as efficacy using UTATU2

Presented in Table 3 is the Summary of Perceived ease of use and usefulness as efficacy. The overall weighted mean of 4.17 shows positive feedback and the system is acceptable for the intended users. This finding implies that End-Users the system is effective and delivers the expected report for the document management of the Cagayan State University – Aparri Campus.

CONCLUSION

The developed COSMITTO was successfully addressed the critical need for digital transformation. It proves that the system is relevant and accurate tool that save users time and effort. The study also identified opportunities for improvements, including improved user interface, additional functionality, system- level integration, user support, and the development of supporting policies for effective implementation.

RECOMMENDATION

Based on the findings and conclusion, the following recommendations are proposed to improve the effectiveness and usability of the COSMITOO: Document Management System.

1. The system administrator and experts may strengthen system security and authentication and implement stronger identity verification to ensure the protection of sensitive documents.
2. The system administrator may provide continuous user training and technical support and regular training programs to help employees fully understand the systems' features and maximize its use in daily operations.
3. The Campus Executive Officer may institutionalize the system through campus policies and integration into office workflows and strengthen long-term adoption and develop habitual system use among employees.
4. The Office of the CEO may use the system frequently when implemented to familiarize themselves with its functionalities and ensure its effective utilization.
5. The Records Officer may use the system for a centralized and effective method of tracking and monitoring of documents.
6. For future researchers, may add document request from the Records Office to facilitate easier transaction of requesting all types of documents. Also, may focused to improve the overall security and invest in diagnostics and test automation.

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