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Digitalizing Local Legislative Governance: Developing an e-Legislative Information Management System (e-LIMS) for the Sangguniang Bayan of Castilla, Sorsogon

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***Abstract*—** This research focused on the need for digital transformation in local governance by developing and implementing the e-Legislative Information Management System (e-LIMS) for the Sangguniang Bayan of Castilla, Sorsogon. Despite legal mandates such as the Ease of Doing Business Act (RA 11032) and the E-Governance Act (RA 12254), the municipality continues to rely on manual, paper-based workflows that result in significant risks to institutional memory. The research utilized a Developmental-Quantitative design, the study assessed the current legislative workflow, staff digital literacy, and system readiness among 20 respondents and developed an e-Library Management information system based from the needs and functional requirements of the Sanggunian .

Findings revealed a "tracking gap," with 85% of respondents unable to retrieve documents in under five minutes and 75% struggling to track committee reports. While there is unanimous (100%) psychological readiness for paperless sessions, significant barriers exist: 75% of staff possess only beginner-level software proficiency, 85% perceive digital systems as complex, and 90% express concerns regarding data security. Guided by the ISO/IEC 25010 software quality model, the e-LIMS was developed to provide a secure, user-centric repository featuring automated tracking and role-based access control. The study concluded that successful implementation requires a dual approach: deploying robust digital infrastructure alongside a comprehensive capacity-building program to empower "Digital Champions". This transition is essential for ensuring legislative transparency, efficiency, and disaster resilience in the digital age.

***Keywords*—** e-LIMS, Digital Literacy, Local Governance, RA 11032, Sangguniang Bayan, Castilla.

INTRODUCTION

Governance all over the world is shifting towards digitalization. The push for transparency, efficient bureaucracies, competitive economy and disaster-resilient lifestyles has become the ideal future of nations. In the Philippines, the move towards transforming its bureaucracies into e-governance is a matter of law, rather than bureaucratic-option. The Ease of Doing Business and Efficient Government Service Delivery Act of 2018 or Republic Act No. 11032 mandates all government agencies and local government units (LGUs) to '*adopt an automated business and non-business processes" needed to cut red tape and improve its delivery of services (Official Gazette, 2018). The E-Governance Act or Republic Act 12254 also strengthens the mandates on automating government units through the use of information and communications technology (ICT) to optimize and improve output quality and services (Official Gazette, 2025).

Unfortunately, despite the legal provisions present to uphold this highly digital mission for all Filipino local government units, many LGUs today such as the Municipality of Castilla in Sorsogon is still operating in "analog" settings. At present, the Sangguniang Bayan (SB) of Castilla observes a paper-archiving of ordinances, resolutions and committee reports. Studies have found that keeping a physical document is highly damaging to a public record as it creates data bottlenecks making vital information not only erroneous and inefficient to access but also too exposed to damage from natural elements (Shepherd & Yeor 2023). With the Philippines often struck by

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typhoons, Castilla is not exempt from facing a potential disaster where "institutional memory" due to file harzard from fire or flooding (Santos, 2021).

Currently, the situation of legislative processes In the municipality of Castilla is marked by a "tracking gap," wherein there is no singular electronic document repository throughout majority of the legislative process. The need to decipher the status of a resolution during the time of its first reading, inclusion in a committee, and before attaining full passage, becomes a tedious and less accountable process when done manually and without retrieval systems. This lack of tracking opportunities and easy access of resolutions opposes the values of the Open Government Partnership (OGP) which pledges to increase visibility and communicative engagement between the state and the governed (OGP, 2023). Likewise, the transition to such electronic document systems - it accounting for an online policy repository in the effort to remedy the tracking gap will require adherence to the security measures espoused in the Data Privacy Act of 2012 (RA 10173) in ensuring that all policy materials during the legislative process be strictly protected (National Privacy Commission, 2012).

The purpose of this study is to gather and examine information about the needs of personnel for digital transformation and create an e-Legislative Management System for Sanggunian that will serve as digital platform to strengthen services delivery and governance in the municipality.

The result of the study could encourage collaboration through an extension project between the academic institutions and LGUs in creating a capacity building program that could provide technical support based on the identified readiness gaps.

Further, this research utilizes ISO/IEC 25010 software quality model to ensure that the development of proposed system is functionally appropriate, secure, and usable by both computer literate and illiterate staffs (ISOI 2011). This system is intended to address the needs seeing in leap from traditional to the digital based local legislative government.

II. Objectives:

The general objective is to assess and evaluate the Sangguanian's workflow and readiness of the personnel in digitizing legislative process. The specific objectives are:

1. Examine the current legislative process status of the Sanggunian.
2. Recognize the personnel literacy and readiness in adopting the digital technologies process.
3. Identify the functional requirement for an e-Legislative Management Information System.

III. METHODOLOGY

The research employed a Developmental-Quantitative Design which delineated as follows:

a. A need assessment survey was undertaken and participated by 20 respondents, such as the SB Secretary, committee chairpersons, and other staff tasked as end-users who facilitate legislative documents and document tracking of committee reports.

A questionnaire checklist was used to determine the pain points in current manual process such as where to keep documents and how long it takes to retrieve missing documents. The Digital Literacy Assessment determined the proficiency of the staff in implementing and using software and the readiness of staff to use the system. The data analysis and interpretation made use of the following instruments: Frequency counts/scales — the pain points of the workflow and the digital literacy assessment interpreted according to frequency counts and scale. The scale shall range from 1 (Strongly Disagree) to 5 (Strongly Agree).

b. The eLIMS was developed and will be deployed in the Municipality of Castilla, activating the dashboard (https://castlla.legtrack.net/).

This includes the following key tasks: Admin Access Setup: Assigning access to the Sangguniang Bayan (SB) Secretary for administrative tasks and management of legislative documents. Public Access Setup: Enabling access for constituents to search and view legislative records through a user-friendly portal.

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IV. RESULTS AND DISCUSSION

Table 1. *The Legislative Workflow Efficiency*

Indicators	Strongly Disagree (Freq / %)	Disagree (Freq / %)	Moderately Agree (Freq / %)	Agree (Freq / %)	Strongly Agree (Freq / %)
Document Retrieval (under 5 mins)	17 (85%)	3 (15%)	0 (0%)	0 (0%)	0 (0%)
Physical Storage space issues	0 (0%)	0 (0%)	4 (20%)	12 (60%)	4 (20%)
Legislative Tracking (days-in-committee)	15 (75%)	3 (15%)	2 (10%)	0 (0%)	0 (0%)
Digital Backup (cloud reliability)	15 (75%)	4 (20%)	1 (5%)	0 (0%)	0 (0%)

The data collected shows that 85% of the respondents (17 out of 20) Strongly Disagree with the statement that they are able to retrieve an ordinance in less than 5 minutes. 75% is also a great majority that Strongly Disagree with being able to track "days-in- committee" status. Owing to the paper-based nature of their records systems, the Information Search Cost is high since employees have to spend too much of their workday on clerical undertakings such as retrieving documents instead of analyzing these records for furthering policy or servicing the public. This statement is a clear inconsistency with one of the prescribed service parameters under RA 11032 (Ease of Doing Business). Based on the work of Pedroso & Gomes (2020), "information timeliness," is a measure of administrative effectiveness.

Areas which employ manual retrieval systems are vulnerable to "legislative backlog," situations wherein the answer is lost to time as it is no longer known to decision-makers because it was not apparent to them as to where this matter is in the queue. With e-LIMS, human error will be reduced and the triggering of statuses and cataloguing will be automatic.

Digital Literacy and Readiness of the Sangguniang Staff Software Proficiency

(Word/Excel)	15 (75%) beginner	3 (15%) intermediate	2 (10%) advanced
Cloud Storage Usage	20 Never used	0 Used Occasionally	0 Used frequently

The above table shows the usage and experience of the above mentioned software. 75% are beginner at using Word/Excel and 15% are intermediate and 10% are advanced. Sangguniang Staff's digital literacy assessment reveals entry level competencies that do not meet the demands of e-governance. 75% (15 of 20) are beginner users of basic software such as Word and Excell while only 10% are advanced users. The findings suggests that the current administrative output is simple document drafts and manually-sourced data instead of automated spreadsheets and complex document formatting. The lack of intermediate and advanced users indicates a lack of technical leadership in the office that prevents the advancement of more complex digital operations or solutions to daily digital issues (Yumen, 2025). Furthermore, studies on the Philippine Digital Workforce Competitiveness Act (RA 11927) emphasize that "surface-level" understanding of digital tools remains a primary barrier to local digital transformation (Villasenor, 2024). The nature of this staff group, being mostly clerical, precludes the presence of advanced users of digital tools and software in the office. This, as Andaya et al. (2025) explains, results in a lack of internal technical leadership, a critical obstacle in the prompt digitalization of unpredictable legislative operations.

The most glaring and critical finding, however, was uncovered in the realm of collaboration and data. The data indicate that 100% (20 out of 20) of the staff have

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never used a cloud storage system. The office currently uses a traditional and wholly local model for storage of all data. Whether that be via portable hard drive or paper filing, the risk of data loss is high, and the security of even encrypted data backups do not exist. Instead, the data presents a stark digital divide in the operational ability of the staff. Between lack of experience using perhaps a simple solution as Google Drive or OneDrive, the staff currently lacks the ability to engage in the kind of collaboration and immediacy that their counterparts experience and depend on in a modern-day logical or administrative capacity.

System Readiness

Indicator	Frequency	Percentage
Comfortable with "Zero Contact Policy" and paperless sessions	20	100%
Data Security	18	90%
System Complexity	17	85%
Lack of Technical Support	15	75%

Despite their willingness, the Perception of System Complexity is at a high 850/01. In short they want the e- initiatives but they view the solution software or systems as too complicated. As seen above, (18 out of 20) mention that Data Security is their top consideration. Moreover, 75% (15 out of 20) describe themselves as "Beginners" in Microsoft There is "Psychological Readiness" for growth but low "Technical Self efficacy" . The respondents are aware of the existing systems that are inefficient but are also apprehensive that an e-solution will be easily hacked or "deleted by accident". This is the Security Paradox where the user actually wants the speed of e-solution but are wary of perceived fragility. As such, it is recommended that the e-LIMS focus on User Experience (UX) and Role-Based Access Control (R3AC). A study on Public Sector Digitalization by Sari et al. (2024) shows "trust in the system" is the number one factor that will lead to technology take-up. Failure to define encryption/Or clear audit trails as per ISO/IEC 25010 on software quality may drive respondents to relegate to "shadow" manual records for added "security".

Furthermore, though the raw skills are there to be able to input data into their documents, the Office can be considered to be low in terms of the overall "Digital Readiness". Proceeding into a more digital or "paperless" Sangguniang requires not just literally the resources and prepared hardware, it shall need a jumpstart in terms of capacity-building. Meaning that, the office will also need to be upskilled from where the people are today. There is a need to reinforce the gap between typing and inputting to typing and being functional in data management and the bare concepts of security of cloud and sharing of files thereon are things that the office employees will need to know. Without the well-planned move to advance the 75% beginners into following-the-trend learners and without bringing the employees up to the uses and basics of a "cloud", the online world will continue to leave behind a workforce. Likewise reported for these trends in the nation, the DICT (2024) had discovered that only about 30% of the LGUs were making ground where internal digitalization of day-to-day workings was concerned.

This is further attributed to lack of IT personnel to handle the network and therefore training. Furthermore, Rebadulla & Espina (2025) noted that the direct lack of the cloud knowledge is impacting more than just missed opportunities, it is "limiting opportunities for 'real-time document markup, view date and synchronized access for the paperless sessions that have just started in the provinces like the Northern Samar" and the like. And the office has no exposure to even the rare simple designs as a "Google Drive or similar where the employees and officials can work with each other on their documents even while driving to work", the pieces of documents left over will remain labelled as outputs "without eye or being heard" by majority of the people that have been asked to partake on any of the homework.

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1. Proposed -Legislative Information Management system (e-LIMS) tor the Municipality of Castilla

Rationale:

The implementation of an electronic Legislative Information Management System (eLIMS) and a complementary Capacity Building framework is an essential strategic recommendation derived from the nexus of the above findings' legal and theoretical underpinnings and the staff's current profile. The findings show a 100% willingness acceptance rate on policies both in internal and external such as the "Zero Contact Policy" and the paperless session that is indicative of a strong and rare fit between the existing culture of the Sangguniang to the national policies such as the Zero Contact Policy (RA 11032) also known as Ease of Doing Business and Efficient Government Service Delivery Act of 2018 and the E-Governance Law (RA 12254). Additionally, the capacity building framework will harness the high-level users of the legislative information system as "Digital Champions" who will become on-demand resources to the current information handlers of each legislative committees and departments. Thus, with this two-pronged recommendation that aims to invest on both the digital capital in the form of the infrastructure (e-LIMS) and human capital through Capacity Building, is the only viable measure to help the municipality dislodge the shackling of administrative delays, high financial costs associated with the paper-based bureaucracy, and its goal of a meaningful and full commitment to transparency and effectiveness for a future-ready local government unit.

The e- Legislative Management Information System (e-LIMS) of the Sangguniang Bayan of Castilla is designed to streamline the management and tracking of legislative documents, public records, and legislative processes within the municipal government. This system aims to provide an efficient, user-friendly platform for both the local legislative body and the general public to access relevant information concerning local legislation, ordinances, resolutions, and other government-related documents.

The e-LIMS is a system with digital archive of legislative documents -with a dynamic tracking system for legislative processes. It integrates features like document search, real-time status updates, and notification systems to facilitate the management of legislative records. The platform can be accessed through a web-based portal that is secured with appropriate user permissions to ensure data privacy and integrity.

KEY FUNCTIONS:

The system covers the legislative processes within the Sangguniang Bayan of Castilla. The system can be access thru this url: https://castilla.legtrack.net. Once open a homepage with log in name and password can be seen (see Figure1 below):

Features of the system include:

- ***Document Storage and Management:*** A centralized digital library for all legislative documents, including ordinances, resolutions, minutes of meetings, and other official publications (see Figure 2).
- ***Search and Retrieval:*** A powerful search function that allows users to easily find documents by title, date, author, keywords, or category see Figure 3 .
- ***Public Access:*** Public-facing features that allow citizens to access relevant legislative records and track the status of local laws (see Figure 4).

Figure 4. Search results based on what the user wants to search.

On the Admin side, a menu sidebar consists of the following functions, as shown in Figure 5.

Dashboard – shows information, top-viewed documents, storage size, and serves as the landing page for the public.

Manage Documents:

- ***Tracker:*** Enables users to upload, edit, delete, search, and filter documents within the system.
- ***Filtered Tracker:*** Provides a customized tracking interface with a tree-view filter to organize documents according to council terms.
- ***Document Author:*** Allows management of document authors within the system.
- ***Summary:*** Displays a consolidated list of all documents with filtering options based on various

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Manage Council

- ***Council Members:*** Displays the list of council members and allows administrators to edit their information, including their terms of office.
- ***Council Summary:*** Provides a summary of council member assignments to specific committees, barangays, and council terms.
- ***User Accounts –*** e-LIMS users – Manage users of the system

Settings (Admin Access)

- ***Dashboard Settings:*** Edits landing page content, including the carousel, trivia, Vice Mayor's message, and announcements.
- ***Datasets:*** Manages public datasets such as barangays, committees, and document types (e.g., ordinances, agendas, resolutions)

Figure 5: Dashboard

BENEFITS OF THE e-LIMS

- **Increased Efficiency:** Automating document tracking and retrieval saves time and reduces manual work for legislative staff.
- **Enhanced Transparency:** Citizens and government employees alike have greater visibility into the workings of the Sangguniang Bayan.
- **Better Decision-Making:** With easier access to legislative information, government officials can make more informed decisions.
- **User-Friendly Interface:** The system is designed with a user friendly interface, making it accessible even to non-technical users.

A Proposed e-Library Management Information System: A User Training Design

Rationale:

The implementation of the e-Legislative Information Management System (e-LIMS) and its accompanying training framework is a strategic necessity born from the critical gaps identified in the current operations of the Sangguniang Bayan of Castilla. The program aims to ensure successful implementation and long-term system use of the e-LIMS.

Objective: To shift the workforce from "analog" manual operations to skilled cloud-based collaboration and e-LIMS users.

Target Participants: 20 Sanggunian ng Bayan personnel

Training Activities

- **Module 1:** Upskilling Digital Literacy and Cloud Essentials
- **Module 2:** e-LIMS users Technical Mastery Ensure complete operational proficiency with the created e-Legislative Information Management System
- **Module 3:** Data Security Building Trust in data security protection

CONCLUSIONS AND RECOMMENDATIONS

This study on the e-Legislative Information Management System (e-LIMS) for the Sangguniang Bayan of Castilla, Sorsogon, drew key conclusions:

First, the current manual legislative workflow suffers from a critical "tracking gap," with 85% of personnel unable to retrieve documents within five minutes and 75% struggling to track committee reports. This paper-based system creates inefficiencies contrary to RA 11032. Second, while staff demonstrate unanimous (100%) psychological readiness for digital transformation, there exists a significant technical capacity gap—75% possess only beginner-level software proficiency and 100% have never used cloud storage systems. Third, a "Security Paradox" exists wherein 90% of respondents prioritize data security yet lack familiarity with digital protection mechanisms, making trust in the system essential for successful adoption. Fourth, technological infrastructure alone is insufficient; successful digital transformation requires a dual approach combining robust systems with comprehensive capacity-building programs to develop internal technical leadership. Fifth, the proposed e-LIMS, developed using ISO/IEC 25010 quality standards, provides a secure, user-centric platform that aligns with national mandates (RA 11032, RA 12254, RA 10173) and international transparency principles, offering a viable pathway toward efficient, transparent, and disaster-resilient local legislative governance.

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Based from the conclusions, the study recommends the creation of Comprehensive capacity building program and create digital champions network that will provide technical support and build internal technical leadership capacity. It is also recommends to adopt and phased implement the e-LIMS following Phase 1- Pilot Implementation (Deploy the system within the Office of the Sangguniang Bayan Secretary and three pilot committees for a duration of three months. This allows for controlled testing, immediate troubleshooting, and the development of best practices before full-scale rollout., Phase 2- Scale-Up (Expand implementation to all legislative committees and integrate with existing municipal documentation systems) and Phase 3- Optimization (Incorporate feedback mechanisms for continuous system improvement and potential integration with provincial and national e-governance platforms. It further recommends to create digital governance policies to institutionalize the digital transformation.

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