The study of the benefit of the Implementation of the Document Tracking and Management System for the Philippine Statistics Authority

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Abstract- Documentation is vital in any organization, regardless of its size or industry. It keeps teams organized and on track by ensuring a clear grasp of project requirements, progress, and potential risks.[1] Documentation serves as any organization's institutional memory, preserving significant information, procedures, and choices. This provides clarity, consistency, and accountability by creating a clear trail for future reference, educating new employees, and simplifying operations, resulting in a more efficient and dependable business. Traceability of document routing is an essential aspect of office work either in private sectors or government offices, they frequently deal with a wide variety of documents such as contracts, financial and project reports, and internal and external communications. Tracking these documents is critical for complying with regulatory obligations, responding to internal and external audits, and even managing risks.

Indexed Terms- Document Tracking System, Document Management System

I. INTRODUCTION

In these environments, like the Philippine Statistics Authority, it is crucial to maintain accountability, compliance, and efficiency to track the movement of documents and their status that passes from one unit, division, service, or office.

Currently, the Philippine Identification System (PhilSys) Registry Office (PRO) handles the national identification project consists of many systems that are tightly connected to offer the necessary services comprising modules such as registration, manual verification system and adjudication, authentication solution services, notification system through short messaging service (SMS) and electronic mail (email), web portal and mobile application, business intelligence and data analytics, dashboard, token management system, relying party and trusted service provider authentication systems, partner and device management system, etc.

With these modules, documentation is necessary for the completion of the project which is not limited to the Business Requirements Document (BRD), Functional Requirement Document (FRD), Technical Requirement Document (TRD), Solutions and Design Architecture (SDA), and testing documents.

PRO comprised five (5) services, twelve (12) divisions, and two (2) units wherein they supervised a particular module in the PhilSys project. Losing track of the document might be a dilemma for each division and even document loss may occur. With the various documents needed for the completion of the project, project management of PRO device process flows to expedite the tracking of the project status of the document which is limited to the process of seeking approval on the printing of required documents and deployment of system updates in the production area. This process improvement does not properly address the tracking on the routing of documents.

To align with the principles of Republic Act No. 11032, an act promoting Ease of Doing Business and efficient delivery of government services, amending for the purpose Republic Act No. 9485, otherwise known as the Anti-Red Tape Act of 2007, which seeks to simplify government operations and improve service delivery, PRO should explore improving its document management processes.[2] By deploying a strong document management system, the agency will be able to properly track document generation, approval, distribution, and storage. Such a solution would increase visibility into the document lifecycle,

lowering the likelihood of loss or misplacement. Additionally, digitizing records can help to expedite operations and enhance accessibility.

PRO may dramatically improve operational efficiency and government compliance by embracing digital transformation and using best practices in document management. This, in turn, will help to ensure the effective execution of the PhilSys project, eventually benefiting the Filipino people.

II. LITERATURE REVIEW

Document tracking systems have become an essential component of modern businesses, reducing procedures and increasing productivity. Previous research has looked into numerous elements of document tracking, such as its advantages, problems, and implementation tactics.

Online Document Tracking System is a web-based system that allows Universiti Teknologi Petronas students to obtain and see all prior final year projects from the Computer Information System Department. This website allowed students to view their papers from anywhere, regardless of location. The management archiving of final year work is done manually, which requires physical storage. With the construction of the web-based application, the department may benefit from an automated system and save a significant amount of time when preserving certain papers.[3]

About the issues faced by many firms both private and public, with the manual document management, the research recommended the creation of a web-based DSWD electronic document tracking management system (EDTMS). Which is a web-based application system that monitors the movements of the complete documentation and can trace the paper path of documents generated in all offices at Regional Office V, Centers/Institutions, and the six (6) provincial operations offices (POOs) wherein a hierarchy of employees has been maintained in the system. The EDTMS comprises information about the originating and receiving offices, as well as individuals as time passed between offices, groups, and departments. In this information system, documents attachments, edits, updates, and notes are all supported.[4]

- Conceptual Framework

The study's goal is to determine the effectiveness of the document tracking and management system at PRO offices. It will specifically investigate how features such as rapid searching and automated processes, as well as system maintenance, impact system performance. The performance will be assessed by parameters such as time saved compared to manual approaches, number of errors prevented or discovered, ease of access to documents, and team members' ability to collaborate using the system.

- Statement of the Problem

The general problem addressed in this study is the implementation of a document tracking and management system for the Philippine Statistics Authority Central Office, especially the PhilSys Registry Office (PRO) to track and monitor the status of the documents (memoranda, advisories, communication letters, project documents, testing results, progress reports, etc.). Its main purpose was to address the subsequent inquiries:

1. Currently, the PRO monitors documents manually, using record book logs and/or spreadsheets. This can be inefficient and error-prone, resulting in lost or misplaced papers, retrieval delays, and trouble tracking document progress. Given these chances, what are the main areas for improvement in the PRO's document monitoring process that may increase efficiency and accuracy?
2. A manual monitoring approach might make it difficult to track a document's real-time location and status. This lack of transparency makes it impossible for employees to know where a document is in the processing chain, resulting in delays and dissatisfaction. Thus, how much do these manual strategies contribute to process delays which may lead to employee dissatisfaction due to the lack of real-time insight?
3. Physical documentation is highly susceptible to loss, theft, and illegal access. A manual system may not provide enough security protections to safeguard sensitive data. Given the possible weaknesses of manual methods in securing physical documents, to what extent do present manual security measures fail to reduce the risks of data loss and unauthorized access?

- Scope and Limitations of the Study

The study will primarily focuses on the Philippine Statistics Authority – PhilSys Registry Office (PSA-PRO) which consists of five (5) services: Registration Operations Service (ROS), Use Case Development and Management Service (UCDMS), Systems and Information Security Service (SISS), Fraud Management and Client Management Service (FMCMS), Policy Coordination and Monitoring Service (PCMS); twelve (12) divisions: Registration Management Division (RMD), ID Processing and Management Division (IDPMD), Identity Validation Division (IVD), Social Protection Use Case Division

(SPUCD), Government Service Use Case Division (GSUCD), Financial and Private Sector Use Case Division (FPSUCD), Infrastructure System Management Division (ISMD), Device Certification and Relying Party Integration Division (DCRPID), Information and Cybersecurity Division (ICD), Feedback and Grievance Division (FGD), Planning and Policy Coordination Division, and Monitoring and Evaluation Division; and one (1) unit: PhilSys Project Management Staff (PPMS). The system to be proposed will allow PRO-authorized users either to upload the document (memorandum, special order, advisory, communication letter, report, or project document) or route it physically for review, comments, and/or signature. The author of the document may define who will be the recipient of the document (for review, comments, and/or signature) and the date needed to route back the document. The author of the document may know the time spent by the reviewers to complete the review and approval.

While the research intends to give useful insights into applying the document tracking and management system in PRO, some variables may restrict its scope. First and foremost, only the author of the document can modify the number of reviewers/commentators in the system while the document is routing for review and approval. Second, the reviewers/commentators shall toggle the system that they were done on the review/approval to have the clearance on the accountability of the document and endorse the document to the next review if the routing is done in hardcopy. If the document is uploaded online, the next reviewer/commentator will be notified in the system. Third, the offices' modest size and composition may restrict the relevance of the findings.

Furthermore, the short timeframe for the collection of data during the conduct of the study may limit the depth of the insights obtained. Finally, subjective bias may influence survey and interview replies.

- Significance of the Study

The significance of the study primarily addresses the need for the PSA-PRO of the document tracking and management system wherein personnel of PRO from staff to executives can monitor the status of the routed document from the author up to the last reviewer/commenter of the document. Also, it will improve the office system which is critical for facilitating better communication between clients and stakeholders while also giving chances to make the system more flexible and efficient. It improves document tracking and increases information accessibility by reducing lost and misfiled documents, speeding up document search and retrieval, and possibly reducing the amount of space in storing the documents.

Definition of Terms:

- Document tracking - in the context of e-signing refers to the capacity to trace a document's progress and status throughout its lifespan, from creation to final signature. This functionality is critical for maintaining openness, accountability, and efficiency in the document signing process.[5]
- Document management - is the use of a computer system and software to store, manage, and track electronic documents, as well as electronic pictures of paper-based information obtained via a scanner. Document management refers to how your company stores, organizes and monitors its electronic documents.[6]
- Business Requirement Document (BRD) - is a formal report that outlines all of the goals or "requirements" for a new project, program, or business solution. It specifies a business requirement or purpose, as well as the expected outcomes as the project progresses.[7]
- Functional Requirement Document (FRD) - acts as a contract between business stakeholders and the technical team outlining an application's functional needs. In most cases, the technical team creates the FRD in response to business needs.[8]
- Technical Requirement Document (TRD) - Technical specifications, often known as specs, are the solutions adopted by specialists to handle technical challenges and software concerns. Setting specific technical requirements is a critical phase in the software and system development processes. Learning about technical requirements can provide you a basic knowledge of how things function in the software development business.[9]

III. METHODS AND PROCEDURE

The research was carried out using a combination of literature review, personal interview, questionnaire survey, and analysis. A broad literature review was carried out using journals, articles, and books to examine the existing topics of document tracking and management systems[10]. An online poll was conducted among various services and division professionals in the Philippine Statistics Authority, especially in the Philippine Identification System (PhilSys) Registry Office.

- Research Design

The researcher used a descriptive method to gather data in the form of a survey questionnaire to determine the challenges in the monitoring and tracking of the documents within the PhilSys Registry Office. The

respondents of the research were allowed to give their insights/comments in the last part of the questionnaire. The researcher utilized the descriptive technique of study because it depicts the nature of the topic under examination following a survey of current trends, practices, and conditions that pertain to that phenomenon. Descriptive research entails the examination of a wide range of occurrences[10].

The researcher used a survey question using a Likert scale. The questionnaire was sent electronically using Google Forms, which respondents may access using their email addresses.

- Locale of the Study

To gather data for the study, various communication channels and data collection methods, including Viber messaging, Facebook Messenger, online interviews, and email surveys, were employed mostly across the services and divisions of the PhilSys Registry Office which is located at Eton Centris Cyberpod 5 Diliman Quezon City.

The study's location has an impact on several facets of the research, including participant demographics, organizational structure, and operational processes. By focusing on the particular location, the research hopes to give insights and recommendations customized to the specific requirements and difficulties of the PhilSys Registry Office in the current document tracking system.

- Respondents of the Study

The research respondents encompass professionals actively engaged in the implementation of the Republic Act 11055 also known as the Philippine Identification System, specifically within the divisions of: SISS – ISMD, DCRPID, and ICD; ROS – IDPMD, RMD, and IVD; UCDMS – GSUCD, SPUCD, and FPUCD; PCMS – MED, PPCD, and PPMS. This group includes individuals holding various roles, such as information systems analysts, information technology officers, computer maintenance technologists, project development officers, project evaluation officers, project coordinators, project managers, public relations officers, registration officers, and administrative assistants.

The selection of these professionals as respondents ensures that the study gathers insights from key stakeholders who possess firsthand experience and expertise in the intricacies of construction projects spanning diverse technical areas. By involving individuals with roles ranging from managerial and supervisory positions down to administrative assistants, the research aims to capture a comprehensive perspective on the challenges within the specified domains of document tracking and management.

- Research Instrument

The main research tool used in this study is a questionnaire that was carefully created by adding pertinent data from previous research and associated literature. The questionnaire was sent to participants by email and a variety of digital platforms, including social media sites like Facebook Messenger and Viber messaging, to guarantee broad distribution.

The objective of this strategy was to take advantage of the reach and accessibility of these online communication channels to facilitate the effective gathering of data from a wide range of participants.

- Data Gathering Procedure

In the process of conducting the study titled "The study of the benefit of the Implementation of the Document Tracking and Management System for the Philippine Statistics Authority," the researcher actively engaged respondents to play a collaborative role in formulating analyses, interpretations, and conclusions.

To initiate this collaborative effort, the researcher distributed questionnaires among the respondents. The questionnaires served as a structured tool for collecting quantitative data, fostering a systematic exploration of challenges within the divisions of the PhilSys Registry Office. The insights garnered through these questionnaires not only contributed to statistical analysis but also played a crucial role in eliciting diverse ideas and perspectives related to the subject matter.

The administration of questionnaires functioned as a catalyst for generating a collective understanding of the challenges inherent in manual tracking and management of documents within the premise of the PhilSys Registry Office. The varied responses provided a comprehensive overview, enriching the research process with a spectrum of insights.

Acknowledging the inherent limitations of purely quantitative methods, the researcher adopted a more nuanced strategy by complementing the questionnaire approach with personal interviews and observation. In instances where discrepancies or uncertainties emerged in the information obtained through questionnaires, personal interviews became a valuable tool for delving into the intricacies of individual responses.

Furthermore, the researcher incorporated observational techniques selectively. Direct observation served as an additional layer of validation, enabling the researcher to cross-reference and corroborate information gathered through other means. This methodological triangulation aimed to enhance the reliability and depth of the study's findings.

- Data Analysis Technique

The researcher undertook a rigorous process of data analysis, leveraging the information gathered from the respondents to extract valuable and pertinent insights. The utilization of Microsoft Excel as a tool for data collection played a crucial role in ensuring the accuracy and completeness of the dataset. This analytical approach was systematic and methodical, employing statistical methods to organize and interpret the gathered survey data.

The utilization of the mean method in the analysis of survey results reflects a systematic and quantitative approach to understanding the perceived significance of various factors among respondents.

$$Mean = \frac{\sum w}{N} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + n_1}{N}$$

Where w is the weighting given to each factor by the respondent, ranging from 1 to 5. For example, n_1 = number of respondents for Strongly Disagree, n_2 = number of respondents for Disagree, n_3 = number of respondents for Neutral, n_4 = number of respondents for Agree, n_5 = number of respondents for Strongly Agree, and N is the total number of respondents. For the number of respondents or the sample size (n), Slovin's Formula was utilized.[10]

$$n = \frac{N}{1 + Ne^2}$$

Where n is the sample size needed (number of respondents), N is the population size, and e is the acceptable margin of error. In this research, 5% or 0.05 was used as the value of e.

As of September 2024, the population of PRO are as follows: IVD with 59 personnel, IDPMD with 48 personnel, ISMD with 42 personnel, FGD with 28 personnel, PPCD with 17 personnel, RMD with 14 personnel, GSUCD, ICD, and MED each with 13 personnel, FPSUCD with 12 personnel, DCRPID with 10 personnel, SPUCD and PAU each with 7 personnel, and PPMS with 2 personnel, with a total population of 285 personnel.

From the formula on the previous page, the sample size will be:

$$n = \frac{285}{1 + (285)(0.05)^2} = 166.42 \cong 167\ personnel$$

Also, the researcher utilized a Likert scale to determine thoroughly from the items on the survey questionnaires of the study of the benefit of the implementation of the document tracking and management system.

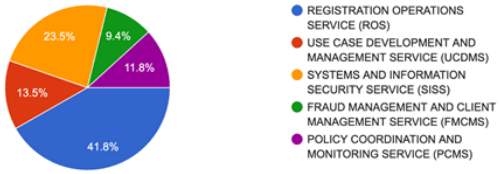
Table 1: Interpretation of the five-point Likert Scale

Likert Scale	Degree of Response	Description
5	4.50 – 5.00	Strongly Agree
4	3.50 – 4.49	Agree
3	2.50 – 3.49	Neutral
2	1.50 – 2.49	Disagree
1	1.00 – 1.49	Strongly Disagree

IV. RESULTS AND DISCUSSION

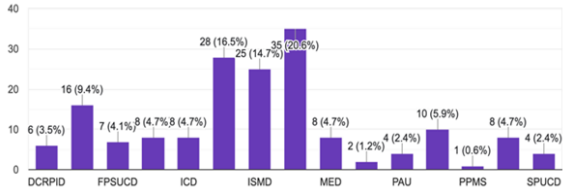
The foundation of this study rests upon the survey responses obtained from a sample of 170 from the five (5) PRO Services. This approach ensures that the research is grounded in the perspectives and experiences of staff/professionals actively involved that are relevant to the study. The utilization of survey data from this targeted group contributes to the specificity and applicability of the study's findings to the study of the benefit of the implementation of the document tracking and management system.

Figure 1 Respondent's Distribution



Among the 170 respondents, as seen in the figure, 41.8% of the sample or 71 respondents are from the ROS – IDPMD, IVD, and RMD, 23.5% of the sample or 40 respondents are from SISS – ISMD, DCRPID and ICD, 13.5% of the sample or 23 respondents are from UCDMS – GSUCD, FPSUCD, SPUCD and PAU, 11.8% of the sample or 20 respondents are from PCMS – PPCD, MED and PPMS, and 9.4% of the sample or 16 respondents are from FMCMS – FGD.

Figure 2. PRO Divisions' Respondents



A total of 170 PRO personnel answered the survey wherein most of the respondents who answered the study survey came from the IVD with 35 respondents (20.6% of the sample) followed by IDPMD with 28 (16.5% of the sample), and ISMD with 25 respondents (14.7% of the sample). Other divisions are as follows:

FGD with 16 respondents (9.4% of the sample), PPCD with 10 respondents (5.9% of the sample), GSUCD, ICD, MED and RMD with 8 respondents (4.7% of the sample), FPSUCD with 7 respondents (4.1% of the sample), DCRPID with 6 respondents (3.5% of the sample), PAU and SPUCD with 4 respondents (2.4% of the sample), Office of the Assistant National Statistician (OANS) with 2 respondents (1.2% of the sample) and PPMS with 1 respondent (0.6% of the sample).

Table 2: Interpretation of responses from the PRO respondents

Question	1	2	3	4	5	Mean	Interpretation
With the current manual document management system, it is easy to find specific documents within PRO.	129	17	18	2	4	1.44	Strongly Disagree
The current manual document management system has made it easier to track changes and versions of documents.	114	32	16	7	1	1.52	Disagree
With our current manual system, it is easy to track the documents that are routed for review, approval, and signature.	117	27	17	5	4	1.54	Disagree
Tracing document trails manually can consume my time and hampers some	0	3	9	86	72	4.34	Agree

of my daily workload.							
Document loss is a risk associated with current document management.	0	0	6	46	118	4.66	Strongly Agree
Document management is a critical function within my organization.	0	0	6	41	123	4.69	Strongly Agree
Document management is essential for supporting our organization's decision-making processes.	0	0	4	35	131	4.75	Strongly Agree
Real-time document monitoring reduces the need for frequent updates on the present status of the document under review and the reviewer's approval.	0	0	5	46	119	4.67	Strongly Agree
I believe that an online system improves document tracking and increases information accessibility by reducing lost and misfiled	0	0	1	26	143	4.84	Strongly Agree

documents, speeding up document search and retrieval, and possibly reducing the amount of space in storing the documents.							
I think having a better document tracking and management system would increase efficiency and productivity.	0	0	3	20	147	4.85	Strongly Agree

The PRO respondents' assessment of the current manual document management system, as presented in Table 3, reveals significant challenges in manual document management and the need for a document tracking and management system. Firstly, the difficulty in locating specific documents is evident, with a mean score of 1.44 indicating strongly disagreement which suggests that the PRO personnel often struggle to locate a particular document that is requested by a superior or the management for reference or further review that might hinder efficient workflow and decision-making. On the second question, the current manual document management system has made it easier to track changes and versions of documents that garnered a mean score of 1.52, which is equivalent to disagreement, depicts that the surveyed personnel agree that they have limited visibility in the document history and inability to compare changes made in the document that is being reviewed which can lead to confusion and potential errors. On the third question, with our current manual system, it is easy to track the documents that are routed for review, approval, and signature that earned a score of 1.54, again indicating disagreement. This indicates that the PRO personnel are challenged in determining the current status of the document (e.g., project documents, letters, memoranda, advisory, special orders, etc.) as a manual way of using the logbook may not provide accurate and up-to-date information. Especially, for the project management team, most of the time their daily activities involve frequent document review and circulating project documents, creating and routing letters, advisories, and guidelines. PRO respondents strongly agree that the manual document tracking process is time consuming and may hamper productivity wherein this earned an average of 4.34. PRO personnel especially the administrative assistants and level one of the unit consume more time than usual doing the workload, impacting to complete other essential duties. Additionally, the respondents strongly agree that document loss is a significant risk associated with the current document management, which scores an average of 4.66. This implies that PRO personnel are very concerned about the possibility of documents being forgotten or lost throughout the review, approval, and signature process. There have been reports of documents being lost in transit between reviewers and approvers, necessitating reprinting and creating delays and inconvenience.

The PRO personnel strongly agree that document management is a critical function within their organization, with an average score of 4.69. This

recognition stems from the organization's involvement in the operations, maintenance, and policy creation aspects of the Philippine Identification System (PhilSys). With the current project of the PRO, undertakes business analytics and dashboard, which are considered in the development of the PhilSys answering the seventh question: document management is essential for supporting our organization's decision-making processes. The document tracking and management system shall be integrated into the system which will display all the internal documents that are routed internally and published to the public.

PRO respondents strongly agree that real-time document monitoring reduces the need for frequent updates on the present status of the document under review and the reviewer's approval, which garnered a mean score of 4.67. The respondents agree that there will be an ease of monitoring/tracking of the current status of their routed documents and this would streamline communication between personnel and eliminate the need for frequent status checks, saving time and effort.

Additionally, the respondents strongly agreed and believed that an online document tracking system would enhance information accessibility by reducing the risk of lost or misfiled documents, speeding up search and retrieval processes, and minimizing physical storage requirements. PRO personnel agrees that having an online system either on-premise or on cloud, this would facilitate both internal and external access to documents, improving overall efficiency and transparency thus reducing the allocation of physical space for documents that may cause lost and misfiling. Finally, the respondents strongly agree that a better document tracking and management system would boost productivity and efficiency. The respondents gave a mean score of 4.85 equivalent to strongly agree depicts that improving the current system by deploying a better document tracking and monitoring system may help improve the turn-around time for the document exchange inside PRO which conforms with the Anti-Red Tape Act of 2007 which aims to promote ease of doing business and efficient government service delivery.

V. SUMMARY, CONCLUSION, AND RECOMMENDATION

Summary of Findings

Based on the result of the survey questions, it suggests that:

1. Difficulty with document retrieval and tracking: The present manual method makes it difficult to find specific documents, track document versions, and monitor document routing. This causes delays, inefficiencies, and the possible loss of important papers.
2. Manual document tracking is time-consuming, especially for administrative personnel. This decreases productivity and impairs the capacity to focus on more important duties.
3. Chance of document loss: The manual method increases the chance of document loss, particularly during the review and approval process. This can result in delays, mistakes, and possibly legal problems.
4. Need for increased efficiency and productivity: A more efficient document management system is required to simplify processes, minimize processing time, and boost overall productivity.

The PRO may resolve these challenges, increase productivity, and improve overall organizational performance by creating a strong document tracking and management system.

CONCLUSION

The outcomes of this study highlight the vital necessity for a strong document tracking and management system inside the PRO. The existing manual approach, according to the respondents' judgments, is riddled with inefficiencies, delays, and hazards. The difficulty of finding specific documents, tracking changes and versions, and monitoring document routing reduces productivity and decision-making. Furthermore, manual methods are time-consuming, and there is a possibility of document loss, which drives up these concerns.

The deployment of a digital document tracking and management system is a promising approach. Such a solution can increase process efficiency, document accessibility, and team communication. By

automating operations like as document tracking, version control, and routing, the system may drastically decrease manual labor and mistakes. Additionally, real-time document monitoring can aid in timely decision-making and accountability.

It is critical that the PRO prioritize the creation and deployment of a robust document tracking and management system. By solving the identified obstacles and exploiting the benefits of digital technology, the organization may greatly increase operational efficiency, cost savings, and overall performance.

RECOMMENDATION

Based on the survey results, the PRO should strongly consider implementing a robust document tracking and management system. This system should be created to address the stated issues, which include time-consuming manual operations, document loss, and inefficient document retrieval.

The suggested system should include the following features:

1. A consolidated document repository will provide simple access to all necessary papers, lowering the risk of loss and increasing efficiency.
2. The system should maintain document versions, allowing for easy comparison and identification of the most recent version.
3. Automating document workflows may greatly reduce processing time and human error.
4. Real-time document monitoring will increase openness, immediate actions and accountability.
5. Security Features: To prevent unauthorized access to important papers, robust security measures should be applied wherein the reviewer and approval will only have the access of the document being circulated by the originator.

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