Implementation of Paperless System for Documentation Process Efficiency at PT Everbright

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Article Info	ABSTRACT
Corresponding Author: Irwan Syahputra E-mail: irwansyahputra92@gmail.com	PT Everbright faces challenges in document management, which still relies on a paper-based system, leading to inefficiencies in storage, retrieval, and distribution of documents. This system also increases operational costs and increases the risk of document loss or damage. Therefore, this study aims to implement a paperless system at PT Everbright to improve the efficiency of the documentation process. By using digital technologies, such as document management software and electronic archiving systems, the company can reduce its dependence on paper, accelerate information access, and optimize internal workflows. This research evaluates the effectiveness of implementing a paperless system in reducing the time required for document retrieval, minimizing document management errors, and lowering operational costs. The expected outcomes include enhanced efficiency, cost reduction, and contribution to environmental sustainability through declining paper usage. Thus, the paperless system is expected to provide a solution for PT Everbright to achieve more efficient, secure, and environmentally friendly documentation processes.
	Keywords: Paperless systems, document management, efficiency, cost reduction, digitalization, environmental sustainability.

INTRODUCTION

The development of information technology and digitalization has brought significant changes in various industrial sectors, including in documentation management. Paper-based systems are still used in the document management process in many companies, which can result in inefficiencies in terms of time, cost, and storage space. Paper-based systems require large physical space for storage, as well as long time for document search and distribution, which can slow down the decision-making process and overall productivity.[1], [2], [3]In addition, manual processes in document management often risk causing human errors, such as lost documents or inaccurate recording. Therefore, the implementation of a paperless system is becoming an increasingly important solution to create a more efficient, secure, and environmentally friendly document management system.[4], [5]

Document digitization is a significant transformation in the modern world that focuses on shifting from paper-based systems to digital systems. This process not only aims to

improve operational efficiency but also to reduce the environmental impact resulting from paper use. According to recent studies, document digitization can help organizations save costs, increase information accessibility, and speed up work processes.[6][7].

One relevant study shows that implementing a document digitization system in a logistics company can significantly improve work efficiency. The study revealed that using a paperless system not only reduces dependence on paper but also speeds up task completion time and improves work accuracy.[7].Additionally, other studies highlight the importance of digital document management in the context of higher education, where digitization helps optimize storage space and protect data.[5][6]

However, despite the clear benefits, challenges in adopting digital technology remain. Several studies have noted gaps in digital literacy and adequate infrastructure as major obstacles to implementing digitalization in some areas, especially in rural areas.[8][9].Therefore, it is important to understand that the success of digitalization does not only depend on the technology itself but also on the readiness of human resources and supporting infrastructure.[10][11]. Research shows that factors such as employee training, organizational culture, and infrastructure support greatly influence the level of digital technology adoption in an organization.[12]. In addition, other studies emphasize the need for effective change management strategies to ensure a smooth transition to digital systems and overcome employee resistance.[13]

Paperless systems can reduce dependence on paper by replacing physical documents with digital formats that are easier to access, store, and share.[14]By utilizing document management software and electronic filing systems, PT Everbright can accelerate internal workflows, reduce operational costs, and minimize document management errors. In addition, reducing paper usage also contributes to the company's efforts to support environmental sustainability, reduce waste, and improve overall operational efficiency. [15]

This study aims to examine the implementation of a paperless system at PT Everbright as an effort to improve the efficiency of the documentation process. The focus of this study is to analyze how the application of digital technology can help companies manage documents better, speed up the search and distribution process, and reduce costs associated with paper use. The expected results of this study are increased operational efficiency, reduced costs, and contributions to better environmental sustainability.[16], [17], [18]

With this background, this study will discuss further the implementation of a paperless system and its benefits in improving the efficiency of document management at PT Everbright. As a programmer who works at PT Everbright, I see firsthand how technology can be the key to modernizing business processes and increasing the company's competitiveness.

RESEARCH METHODOLOGY

Research Approach

This study uses a quantitative approach to analyze the implementation of a paperless system in the documentation process. This study aims to identify changes that occur in the efficiency of the documentation process after the implementation of a paperless system.

Research Design

The research design used is a case study. The research will be conducted at PT Everbright, where the author works as a programmer. Through this case study, the author

can directly observe the implementation of the paperless system in the documentation process.

Population and Sample

The population in this study is all documents used in PT Everbright. Samples will be taken from documents that are often used in the company's operational activities, including internal and external documents.

Data Collection Techniques

Data will be collected through the following techniques:

1. In-depth Interviews: Interviews with relevant parties such as managers, administrative staff, and system users to gain insight into the implementation of the paperless system and its impact on efficiency.
2. Questionnaire: Distributing questionnaires to employees to measure their satisfaction and perceptions of the paperless system.
3. Observation: Direct observation of documentation workflow before and after implementation of paperless system.
4. Documentation: Analysis of related documents such as standard operating procedures (SOPs), reports, and other records to assess the effectiveness of implementing a paperless system.

RESULTS AND DISCUSSION

Research result

Implementation and Utilization of Paperless

The use of paperless applications provides convenience for employees in managing archives, correspondence, and carrying out various other administrative tasks. The implementation of this system allows employees to complete work faster and on time. For example, the implementation of paperless in a company can operate optimally, providing convenience for employees, while increasing the effectiveness and efficiency of work time.

The implementation of a paperless system also has a positive impact on employee productivity, as seen from the increase in their performance and the ability to complete tasks according to the specified schedule. This application can be used to support inter-department correspondence systems, letter validation, sending information in the form of memos between departments, document archiving systems, and managing external and internal documents. In addition, the paperless application also allows recording of activity logs, such as the time the letter was read and sent, so as to minimize the potential for miscommunication between employees in terms of correspondence. The email delivery feature also makes it easier to distribute documents to external parties.

However, implementing a paperless system is not always easy. Various obstacles can arise, one of which is the limited ability of employees to carry out administrative tasks digitally. This obstacle has the potential to affect the smoothness of the bureaucratic process in the work environment. Therefore, companies need to take strategic steps, such as providing adequate training, so that employees can use paperless applications effectively and without obstacles.

Obstacles to the Implementation of Paperless Digitalization at PT Everbright

In implementing a document digitization system through the paperless concept, researchers identified several obstacles based on the results of interviews with four

informants. The obstacles found include the lack of system integration and the unavailability of an adequate system, both of which are major inhibiting factors in increasing employee work efficiency.

The researchers then visualized the findings in a fishbone diagram. In the diagram, the most frequent constraints are placed closest to the fish's head, while the other two constraints are positioned at the back, as illustrated below:
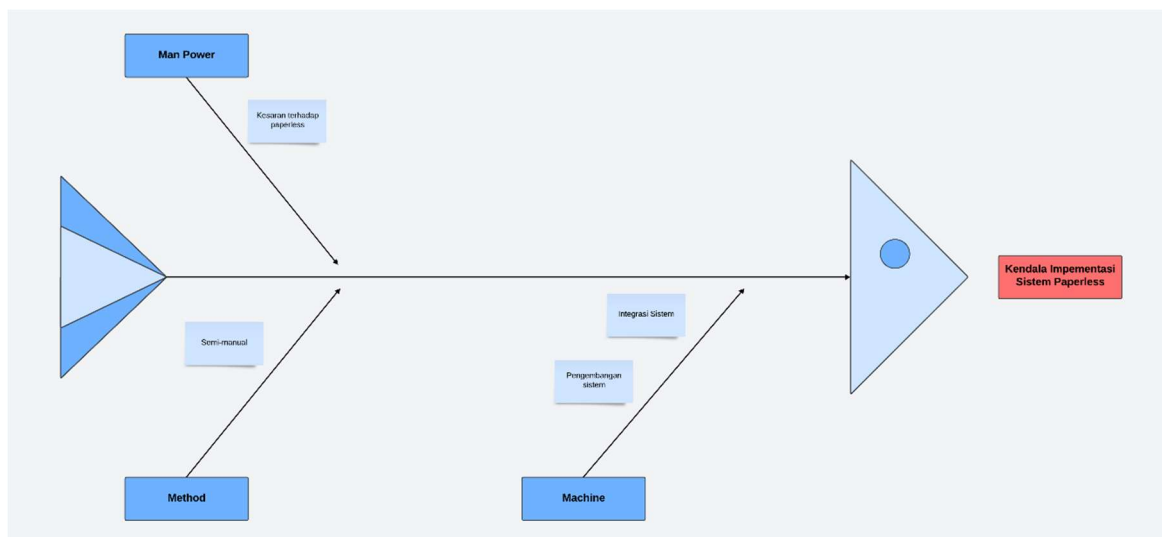

Figure 1 Fishbone Diagram of Paperless System Implementation Constraints

Information:
a. Start: The starting point of the process.
b. Man Power: Prepare the human resources needed, including, Awareness about paperless: Ensure HR has an understanding and awareness of the importance of paperless.
c. Method: Determine the method of paperless implementation. For example, choosing a cloud system, specific software, and digital workflow.
d. Machine: Prepare the infrastructure and hardware needed. For example: scanners, computers, and servers.
e. System Integration: Integrate paperless systems with existing systems.
f. Semi Manual: Anticipate semi-manual processes as a transition or for certain documents.
g. Obstacles to Implementing Document Digitalization with Paperless
    1. Resistance from employees.
    2. Lack of training.
    3. Technical constraints.
    4. Implementation costs.
h. Evaluation: Conduct periodic evaluations of the paperless implementation.
i. Finished: The end point of the process.

The fishbone diagram above shows various obstacles that affect employee performance in implementing document digitization. The explanation of these obstacles is as follows:

Man Power

Awareness of Paperless

Employee awareness of paperless and understanding of the importance of saving usage is very important. If this understanding can be improved, efficiency and effectiveness in the use of costs for paper procurement can be more optimal, thus providing greater benefits for the company in the future.

Machine

Paperless applications currently in use can only be accessed offline via a computer or laptop, which hinders easy access to information. When users need to access important data or documents that are only available on certain devices, this limitation becomes an obstacle, especially if there is no direct access to the computer. This condition can disrupt operational efficiency and smoothness, because users cannot obtain information quickly and flexibly from other devices such as mobile phones or tablets.

In addition, these applications are not fully integrated with other existing systems or applications. Documents generated by paperless applications often have to be downloaded or processed manually before they can be used or distributed to relevant parties. This makes collaboration difficult and slows down workflows, especially when information from different applications must be combined or processed further. Without seamless integration between systems, document management and distribution becomes more complicated, increasing the risk of errors and delays in operations.

Method

The way this system works is still semi-manual, where documents need to be created in PDF format before being distributed. This process requires additional time and steps, and relies on manual or email delivery, which does not support optimal speed and ease of access. This causes delays in information sharing and has the potential to reduce operational efficiency.

System Implementation

Login Page

In the system implemented at PT Everbright, access to various features and services available in the digital platform is done through a secure login page. This login page is designed to ensure that only authorized users can access the system and perform actions related to digital documentation. Users are asked to enter their previously registered username and password. Users who successfully enter valid credentials will be directed to the system's main dashboard, which offers various features such as managing letters, creating and archiving documents, and tracking the status of letter delivery in digital format.
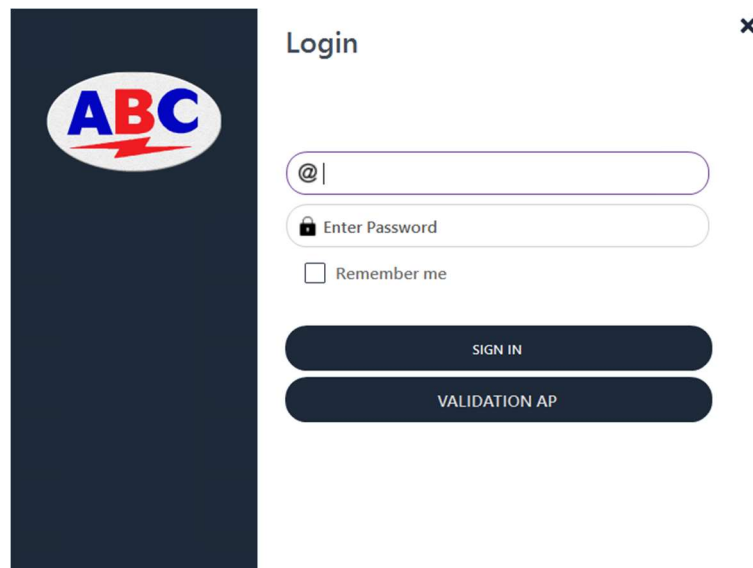
Figure 2 Login Page

Message

The Message page in the paperless system implemented at PT Everbright functions as the main feature for accessing, managing, and sending correspondence documents between users in the organization. This page is designed to simplify the communication and documentation process in digital format, replacing the traditional method of using paper. By using this system, users can easily track all communications that occur, both incoming and outgoing letters, in one integrated platform.

Incoming and Outgoing Mail Management Features

On the Message page, users can see a list of letters that have been received (incoming mail) or sent (outgoing mail). Each letter is displayed with important information such as the letter number, date of sending or receiving, sender or recipient, and subject of the letter. With the search feature provided, users can quickly find certain documents based on keywords or other criteria.

Document Access and Management

Letters received or sent by users can be accessed directly through the Message page in the form of digital documents, which are stored in PDF format or other appropriate documents. Users can open, read, and download the letter according to the Admin's specific needs. Each document in the system is equipped with metadata that includes information related to the status of the letter (for example, whether it has been read or is still in pending status), as well as other important notes, such as follow-up actions that need to be taken.

Document Versioning and Revision Features

Each time a document is revised, the system automatically creates a new version of the document, keeping a copy of the changes made. Users can access previous versions of the document and compare them to the latest version to see what changes have been made. This version will be marked with the date and time of the update, as well as the identity of the user who made the revision. This way, users can see the complete revision history of the document, from the earliest version to the latest version.

Revision Management Process

In this system, each revised document will not immediately replace the previous version, but will be stored as a separate copy. Users involved in the revision process can add

comments or notes about the changes made to the document, which helps explain the reasoning or context behind the revision. With this feature, revision control becomes more structured, and communication between users about document changes becomes clearer.
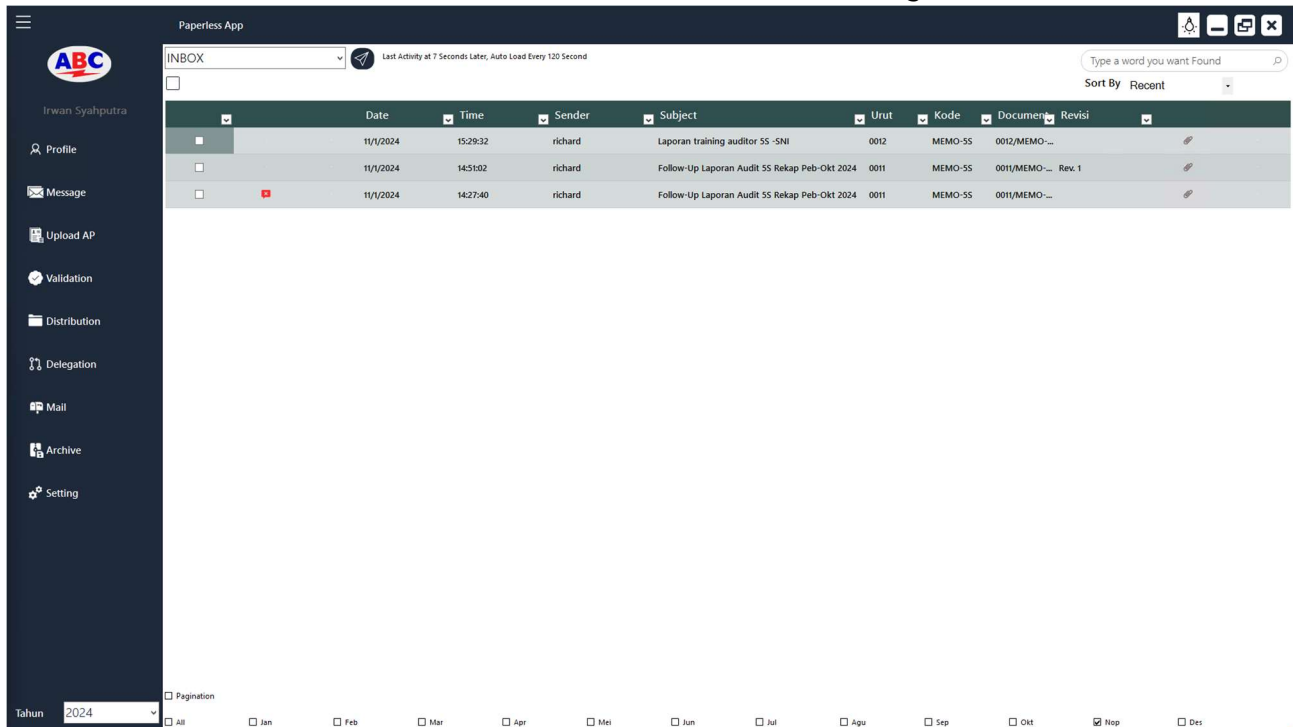

Figure 3 Inbox Page

View Document Attachments

With the document attachment view feature, PT Everbright can simplify the archiving process. Previously, physical attachments often required large storage space and were time-consuming to organize. However, with a paperless system, documents and attachments are stored digitally in an organized archive and can be accessed at any time, without requiring physical space. The process of searching and retrieving documents becomes faster, which contributes to the company's operational efficiency.
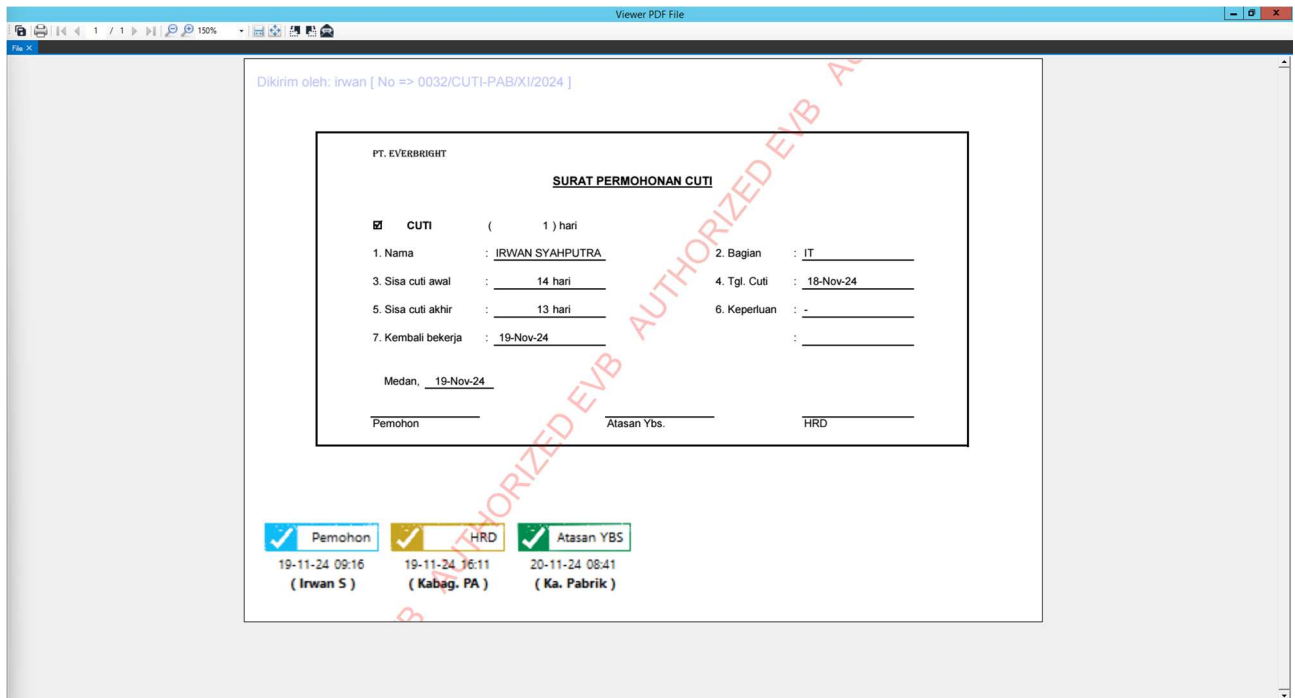
Figure 4 View Attachment display

Document Distribution

Document distribution is one of the important features in the paperless system implemented at PT Everbright. This feature allows for fast and efficient digital document management and delivery, replacing the time-consuming and costly physical document delivery method. Through this system, documents can be distributed to various parties who need them, both within and outside the company, without the need to print or send documents in physical form.

The document distribution process begins with the creation or receipt of a document in the system. Once the document is created or received, the authorized user can choose to send the document to the relevant party. This can be done by selecting the recipient of the document from the list of users in the system or by entering the recipient's email address if the document needs to be sent to an external party.

The system allows users to selectively specify the destination of the document, whether to one or more recipients, and in some cases, the document can be distributed to specific groups or departments. Users can also add special notes or instructions related to the document being sent to provide further context or direction to the recipient.
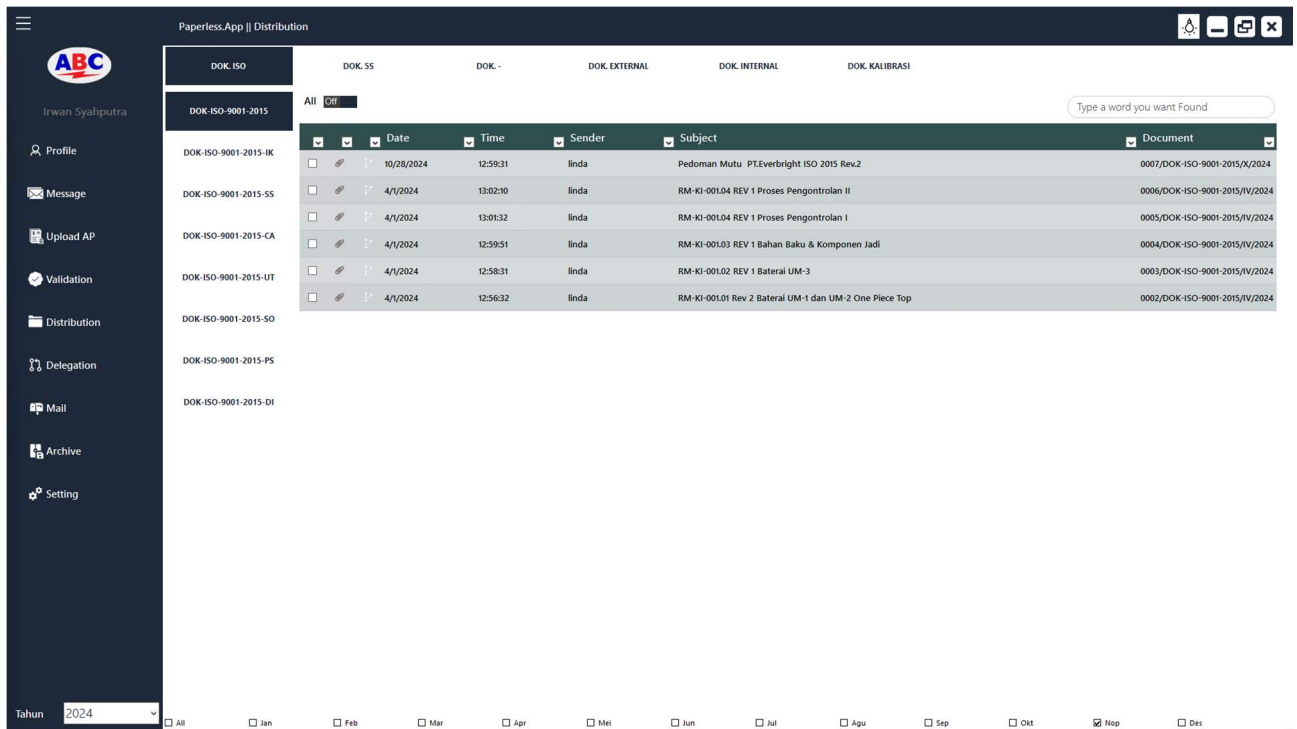
Figure 5 Distribution Page

Document Archives

Document archiving is a key feature in the paperless system implemented at PT Everbright. This feature allows the management, storage, and retrieval of documents in digital format, replacing the need for physical archives that take up space and are difficult to manage. Through this system, all company documents, whether received, sent, or created, can be stored electronically in a structured, secure, and easily accessible system.
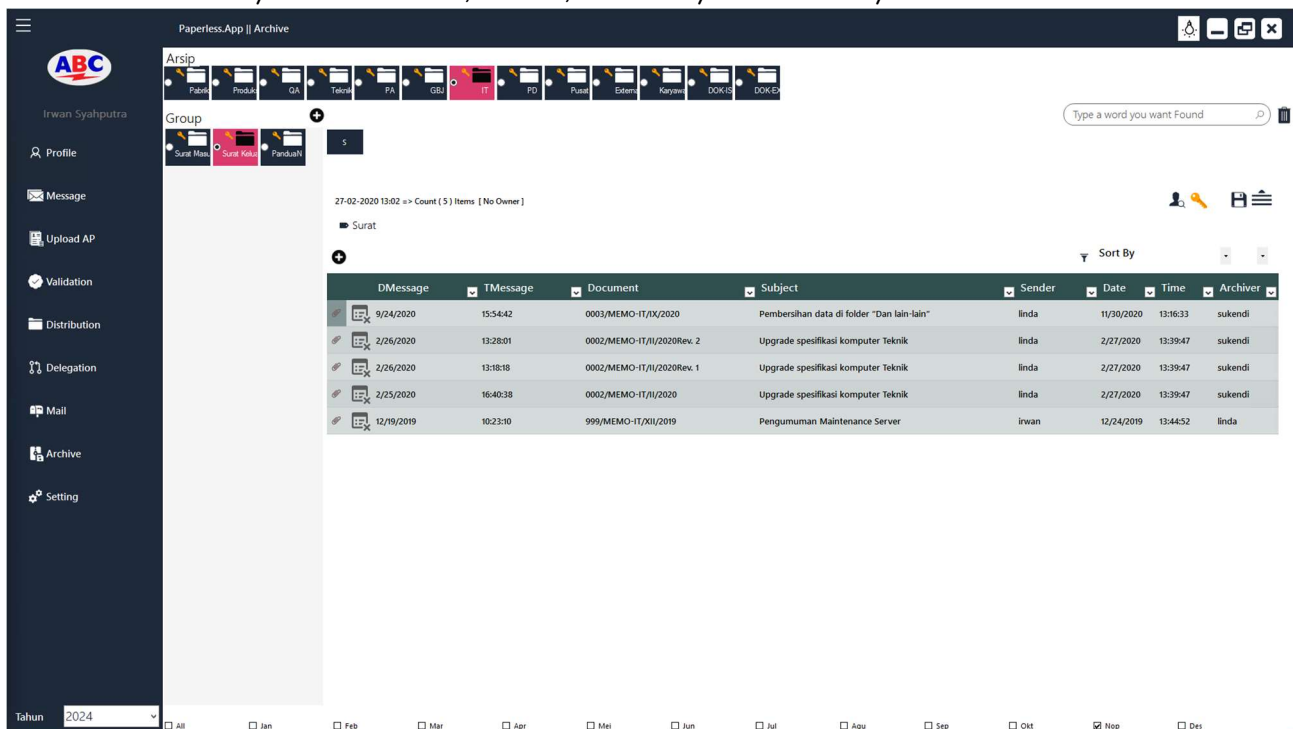

Figure 6 Archive Page

Mail System to be forwarded to External parties

*Mail*The Mail System is a feature in the paperless system used at PT Everbright to facilitate communication and distribution of documents digitally, both within the organization and to external parties. This feature allows sending documents in an efficient and secure manner to recipients outside the company without the need to use physical media. With the Mail System integrated into the paperless system, PT Everbright can optimize document management, reduce dependence on paper, and increase efficiency in the external communication process.
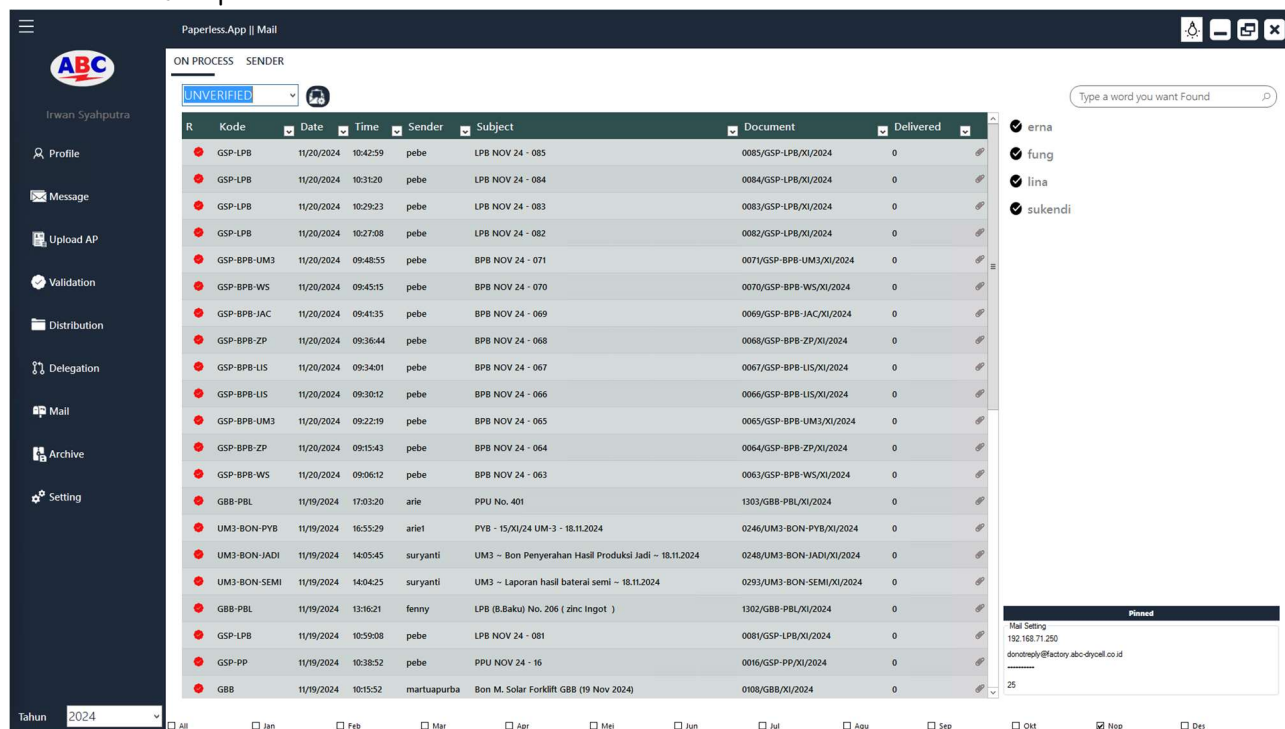

Figure 7 Mail System Page

Document Validation

The Document Validation feature is one of the important components in the paperless system implemented at PT Everbright. This validation process serves to ensure that every document processed, both internal and external documents, meets certain criteria and can be legally and administratively accounted for. This document validation aims to maintain the accuracy, security, and validity of documents before they are forwarded or disseminated in the system. Documents that have been validated will be recorded in a log and the time when the validation was carried out so that the duration of the documents sent can be known.
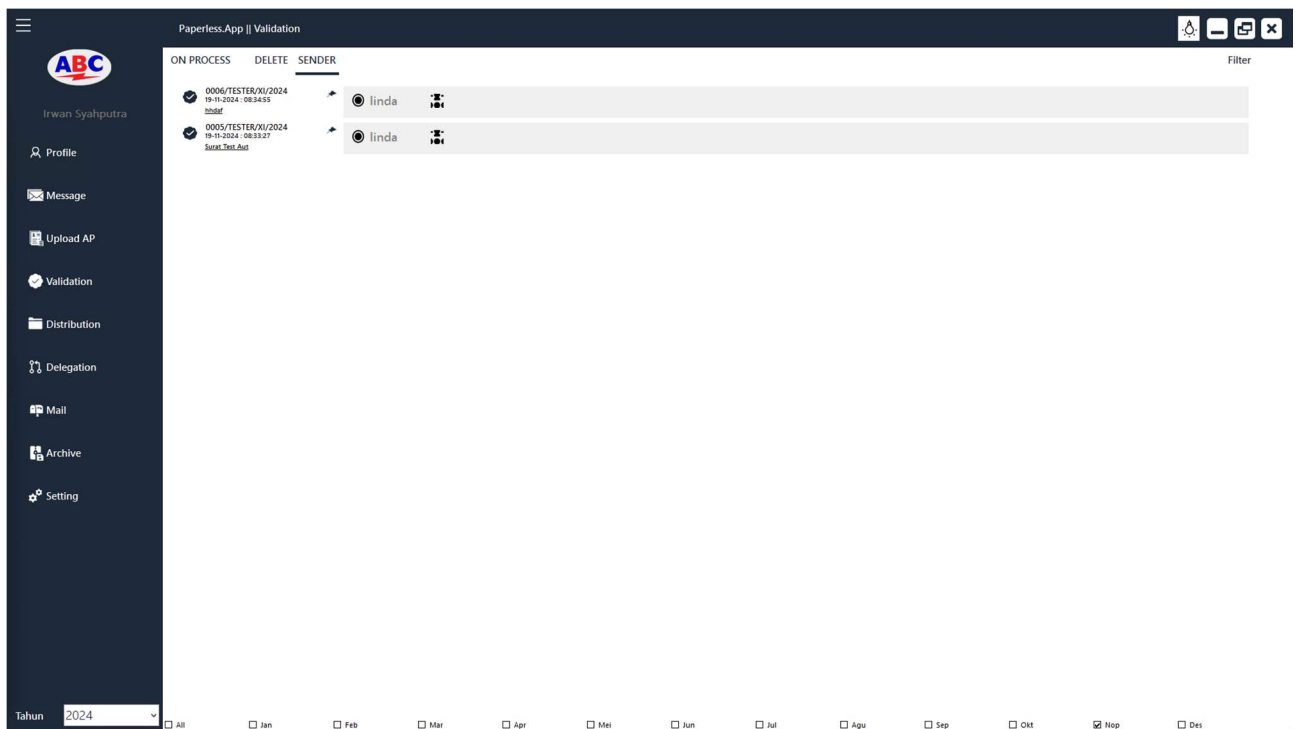
Figure 8 Validation Page

CONCLUSION

The implementation of a paperless system at PT Everbright has provided various conveniences in managing company documentation, by integrating various important features that support efficiency and digital document management. Some of the main features implemented include Incoming and Outgoing Mail Management, Document Version and Revision Features, Document Distribution, Document Archives, Mail System for Forwarding to External Parties, and Document Validation. Each of these features has a significant role in facilitating the company's administration process:

a. Incoming and Outgoing Mail Management: This system allows for more structured mail management, facilitates tracking of mail status, and speeds up the mail distribution process to relevant parties. Users can access incoming and outgoing mail more easily, minimizing administrative errors.

b. Document Versioning and Revision Feature: This feature ensures that any changes to the document are well documented, making it easy to track the revisions made. It also ensures that the document being used is the latest version and minimizes confusion.

c. Document Distribution: Document distribution management can be done more efficiently, where documents can be forwarded to the parties in need, both internal and external. This distribution process becomes faster and well-organized.

d. Document Archive: This feature helps companies store and archive documents more neatly and in a structured manner. Digital archives allow document management to be more space and time efficient, and easily accessible at any time if needed.

e. Mail System for Forwarding to External Parties: This feature allows the system to send important documents or information to external parties via email or other platforms, speeding up the communication process with external parties without having to involve manual processes.

f. Document Validation: The document validation system ensures that the documents processed are in accordance with the established standards, both in terms of authenticity and completeness of information. This validation supports compliance with applicable regulations, as well as improving the security and accuracy of the data used.

However, even though these features have been implemented well, the system still operates in offline mode. In addition, integration with the National Cyber and Crypto Agency (BSSN) to ensure a higher level of security has not been fully implemented. In the future, with the migration of the system to online mode and further integration with BSSN, PT Everbright can improve the performance of this system, strengthen security, and accelerate document management more efficiently and connected. Overall, although the existing paperless system has provided significant benefits in improving the efficiency and security of document management, there is great potential to further optimize this system by introducing cloud-based or online technology and integration with BSSN. With these steps, this system can function optimally and support the company's business processes more flexibly, safely, and connectedly.

REFERENCES

[1] R. Hidayat, R. M. Nur, dan R. Wijaya, "Implementasi Web Semantik Terhadap Manajemen Pengelolaan Pengarsipan Dokumen Dan Surat (E-Arsip)," *Indonesian Journal of Computer Science*, vol. 12, no. 2, Apr 2023, doi: 10.33022/IJCS.V12I2.3167.

[2] I. Nuryasin dan M. Effendy, "Prototipe Sistem Manajemen Dokumen Perguruan Tinggi Menggunakan Document Tagging," *Seminar Keinsinyuran Program Studi Program Profesi Insinyur*, vol. 3, no. 1, Mei 2023, doi: 10.22219/SKPSPPI.V3I1.12916.

[3] R. Djajasoepena, E. Sulistyo, P. Y. Lestari, E. Eryanto, dan M. A. C. Bhakti, "Perancangan Sistem Manajemen Dokumen Berbasis Paperless Buku Syarat Kecakapan Umum Pramuka Siaga," *Jurnal RESTIKOM : Riset Teknik Informatika dan Komputer*, vol. 5, no. 1, hlm. 32–37, Apr 2023, doi: 10.52005/RESTIKOM.V5I1.114.

[4] I. Kadek, T. Astawan, A. Info, F. Ekonomi, dan Bisnis, "Implementasi E-Filling System sebagai Pusat Penyimpanan Data Perusahaan Medi Groups berbasis Cloud dengan menggunakan Aplikasi Google One," *Jurnal Manajemen Sistem Informasi (JMASIF)*, vol. 1, no. 2, hlm. 41–51, Okt 2022, doi: 10.35870/JMASIF.V1I2.104.

[5] F. Rahman, Abd. Wafi, A. Saidi, S. Sholihah, dan U. Sholiha, "EFFICIENT USE OF BSI MOBILE IN ONLINE ACCOUNT OPENING AS A FORM OF PAPERLESS SUPPORT AND REALIZATION OF GREEN BANKING," *Prospeks: Prosiding Pengabdian Ekonomi dan Keuangan Syariah*, vol. 1, no. 2, hlm. 150–159, 2023, Diakses: 20 November 2024. [Daring]. Tersedia pada: https://journal.al-khairat.ac.id/index.php/prospek/article/view/28

[6] M. I. Farozi, D. Kurnia, dan R. A. L. Aprilia, "Perencanaan Green Computing Melalui Digitalisasi Dokumen Akademik pada ITS NUS Sumatera Selatan," *MDP Student Conference*, vol. 2, no. 1, hlm. 596–603, Apr 2023, doi: 10.35957/MDP-SC.V2I1.4477.

[7] F. U. N. Hanifah dan E. Raharja, "Penerapan Sistem Digitalisasi Dokumen Ekspor Menggunakan Paperless Office Dalam Upaya Meningkatkan Efisiensi Kerja," *Sanskara Manajemen Dan Bisnis*, vol. 2, no. 01, hlm. 51–58, Nov 2023, doi: 10.58812/SMB.V2I01.203.

[8]   A. Sarjito, "Dampak Digitalisasi Administrasi Perdesaan di Negara Berkembang," *JURNAL ILMIAH ILMU ADMINISTRASI*, vol. 13, no. 2, hlm. 106–124, Des 2023, doi: 10.33592/JIIA.V13I2.3814.

[9]   T. Taufiqurokhman, D. Irwansyah, F. H. S. Damanik, A. Nurhakim, dan L. Judijanto, "Transformasi E-Government: Mengevaluasi Dampak Digitalisasi terhadap Pelayanan Publik," *Jurnal Cahaya Mandalika ISSN 2721-4796 (online)*, vol. 3, no. 2, hlm. 1796–1803, Des 2023, doi: 10.36312/JCM.V3I2.2390.

[10]   J. F. J. Vos dan A. Boonstra, "The influence of cultural values on Enterprise System adoption, towards a culture – Enterprise System alignment theory," *Int J Inf Manage*, vol. 63, hlm. 102453, Apr 2022, doi: 10.1016/J.IJINFOMGT.2021.102453.

[11]   M. M. H. Shahadat, M. Nekmahmud, P. Ebrahimi, dan M. Fekete-Farkas, "Digital Technology Adoption in SMEs: What Technological, Environmental and Organizational Factors Influence SMEs' ICT Adoption in Emerging Countries?," *Global Business Review*, 2023, doi: 10.1177/09721509221137199.

[12]   Wahdaniah, R. Sucianti, E. Ambalele, dan A. H. Tellu, "Human Resource Management Transformation in the Digital Age: Recent Trends and Implications," *International Journal of Applied Research and Sustainable Sciences*, vol. 1, no. 3, hlm. 239–258, Nov 2023, doi: 10.59890/IJARSS.V1I3.902.

[13]   "Managing Change in the Digital Era: Five Lessons for Leaders".

[14]   R. Hidayat, R. M. Nur, dan R. Wijaya, "Implementasi Web Semantik Terhadap Manajemen Pengelolaan Pengarsipan Dokumen Dan Surat (E-Arsip)," *Indonesian Journal of Computer Science*, vol. 12, no. 2, Apr 2023, doi: 10.33022/IJCS.V12I2.3167.

[15]   N. Isrofi, "Kajian Permasalahan Lingkungan dan Usulan Pengaplikasian Cleaner Production di Industri Kertas," *JUMINTEN*, vol. 3, no. 1, hlm. 145–156, Jan 2022, doi: 10.33005/JUMINTEN.V3I1.388.

[16]   L. Wijaya, "Analisis Cost and Benefit Program Kemitraan dan Bina Lingkungan sebagai Salah Satu Bentuk Corporate Social Responsibility PT. Kertas Leces Probolinggo," 2009.

[17]   A. P. Wicaksono, R. Mahfuroh, dan A. L. R. Bagus, "Perilaku Pengurangan Sampah: Potensi Pengungkapan dan Pelaporan Keberlanjutan di Perguruan Tinggi," *Jurnal Ilmiah Akuntansi*, vol. 5, no. 1, hlm. 151, Jun 2020, doi: 10.23887/JIA.V5I1.24886.

[18]   A. Al Muhyi dan N. Rahmadia, "Penerapan Prinsip Keberlanjutan dalam Pengelolaan Limbah di Kawasan Industri Terpadu Batang," *Elektriese: Jurnal Sains dan Teknologi Elektro*, vol. 14, no. 01, hlm. 159–171, Sep 2024, doi: 10.47709/ELEKTRIESE.V14I01.4683.