

Cyber Notary: Adaptation to Changes in Notary Practices in Indonesia

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Abstract

This study investigates the adaptation of notary practices in Indonesia in response to digital transformation, focusing on implementing cyber notary systems. This research focuses on analyzing the opportunities, challenges, and integration of traditional legal principles in the implementation of cyber notaries in Indonesia. Furthermore, this study aims to formulate a framework that supports the effective, safe, and sustainable implementation of cyber notaries in accordance with applicable legal provisions. This research uses normative legal methods with a conceptual and legislative approach to analyze the suitability of existing regulations for the implementation of cyber notaries in Indonesia. Thematic analysis using NVivo 12 Plus was used to identify patterns and relationships between themes from secondary legal sources, which were then validated normatively. The findings reveal that while cyber notary adoption can enhance notarial service delivery, significant obstacles remain, including limited digital literacy, inadequate technological infrastructure, and insufficient legal frameworks. The research highlights the necessity of comprehensive legal reform and increased public awareness to ensure the legality, fairness, and transparency of electronic document management. By proposing a legal framework tailored to Indonesia's civil law context, this study contributes to the discourse on legal modernization and offers policy recommendations to strengthen public trust in digital legal services. This research normatively contributes to formulating a clear, legitimate, and transparent legal framework for cyber notaries in Indonesia.

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Introduction

Cyber Notary is a form of innovation in legal practice that adopts advances in information technology to increase the efficiency, security, and accessibility of notary services¹. Cyber notary solves these challenges in the digital era characterized by the need for fast, safe, and electronically documented transactions. This practice allows notaries to carry out their duties online, such as identity verification, electronic document signing, and digital record keeping, which are legally recognized². The adoption of cyber notaries is generally carried out because it can reduce bureaucracy, expand the reach of services, and support the principles of transparency and accountability in the provision of legal services to align with modernization demands in the global legal system.

Regulatory gaps are a central issue in the implementation of cyber notaries in Indonesia, as there is currently no comprehensive legal framework that explicitly regulates the exercise of notary authority in the digital realm. Although Law Number 2 of 2014 concerning the Office of Notaries (UUJN) and Law Number 11 of 2008 concerning Electronic Information and Transactions (UU ITE) have provided the legal basis for electronic transactions, neither specifically regulates the authentication mechanisms for digital documents, the virtual presence of parties, or legal liability for electronic system errors³. This lack of clarity leads to ambiguity in legal interpretation, particularly regarding the validity of authentic deeds created electronically and the validity of digital signatures in the notarial context⁴. Furthermore, the absence of derivative regulations such as Government Regulations or Regulations of the Minister of Law and Human Rights⁵ that govern the operational procedures of cyber notaries reinforces this normative vacuum.

The regulatory vacuum surrounding the implementation of cyber notaries reflects the lack of fundamental adjustment between technological developments and the still-conventional national legal structure. Reliance on outdated norms requiring physical meetings and printed documents demonstrates that the existing legal framework is unable to fully accommodate the characteristics of electronic transactions. The absence of clear technical and procedural standards regarding digital evidence, online

¹ Agung Aditya et al., "Cyber Notary: Between Notary Opportunities And Challenges In Facing The Era Of Digital Disruption 4.0 Towards 5.0," *International Journal of Law Society Services* 2, no. 1 (2022): 8, <https://doi.org/10.26532/ijlss.v2i1.20365>.

² Ahmad Farid Bisyarohatie et al., "Online System Policy And Cyber Notary In Facing The Impact Of Covid-19," *Sultan Agung Notary Law Review* 3, no. 4 (2022): 1491, <https://doi.org/10.30659/sanlar.3.4.1491-1507>.

³ Ida Bagus Wirya Dharma et al., "Legal Certainty of Notary Position Regarding Authority To Certify Electronic Transactions," *Jurnal Notariil* 9, no. 2 (2024): 97–101, <https://doi.org/10.22225/jn.9.2.2024.97-101>.

⁴ Anis Rizqiya and Muh. Afif Mahfud, "Perkembangan Cyber Notary Di Indonesia Dan Kekuatan Pembuktian Akta Notaris Dalam Era Digital," *Notarius* 17, no. 3 (2024): 2430–48.

⁵ Dian Ekawaty Ismail et al., "Collocation of Restorative Justice with Human Rights in Indonesia," *Legality : Jurnal Ilmiah Hukum* 32, no. 2 (2024): 2, <https://doi.org/10.22219/ljih.v32i2.35374>.

authorization, and accountability mechanisms for system errors leaves room for wide interpretation and is prone to abuse. This situation indicates the need for forward-looking regulatory reform, emphasizing digitalization as an integral part of the modern notarial system without neglecting the principles of legal legitimacy and accountability.

During the COVID-19 pandemic, the role and function of the Notary Public have become increasingly important in handling the legal process without sacrificing the safety and health of the public. The pandemic has forced the legal industry to adapt to changing circumstances quickly. The Covid-19 pandemic has changed many human habits worldwide, including Indonesia ⁶. Several aspects that have changed due to the COVID-19 pandemic are accelerating the adoption of cyber notaries such as video conferencing technology, chat applications, e-commerce platforms, etc ⁷. Among the existing literature, the study by Alincia and Sitabuana ⁸ stands out for its regulatory focus on the urgency of legal reform to support cyber notary practices in Indonesia. Their work presents a thoughtful analysis of legislative gaps and suggests broad legal amendments.⁹ However, it stops short of offering a detailed normative framework that aligns with Indonesia's civil law structure, which this study intends to address.

The Covid-19 pandemic has also changed many human habits in the workplace. Many companies and organizations have adopted remote work models and reinforced new, adaptive foundations in the workplace ¹⁰. The COVID-19 pandemic has also affected work practices in law ¹¹, including work adaptation by a notary. Some of the adaptations made

⁶ Kuok Ho and Daniel Tang, "Movement Control as an Effective Measure against Covid-19 Spread in Malaysia: An Overview," *Journal of Public Health: From Theory to Practice* 30 (2020): 583–86; Susan Olivia et al., "Indonesia in the Time of Covid-19," *Bulletin of Indonesian Economic Studies* 56, no. 2 (2020): 143–74, <https://doi.org/10.1080/00074918.2020.1798581>; Lee Peng Foo et al., "The Impact of COVID-19 on Tourism Industry in Malaysia," *Current Issues in Tourism* 24, no. 19 (2021): 2735–39, <https://doi.org/10.1080/13683500.2020.1777951>.

⁷ Viktória Ali Taha et al., "The Use of Social Media and Its Impact on Shopping Behavior of Slovak and Italian Consumers during COVID-19 Pandemic," *Sustainability (Switzerland)* 13, no. 4 (2021): 1–19, <https://doi.org/10.3390/su13041710>; Anthony Jnr Bokolo, "Application of Telemedicine and eHealth Technology for Clinical Services in Response to COVID-19 Pandemic," *Health and Technology* 11, no. 2 (2021): 359–66, <https://doi.org/10.1007/s12553-020-00516-4>.

⁸ Devi Alincia and Tundjung Herning Sitabuana, "Urgency of Law Amendment as Foundation of The Implementation of Cyber Notary," *Law Reform: Jurnal Pembaharuan Hukum* 17, no. 2 (2021): 214–31, <https://doi.org/10.14710/lr.v17i2.41749>.

⁹ Rifky Pulubolo et al., "Legal Process for Banking Negligence in Violations of Customers' Privacy Rights and Personal Data," *Estudiante Law Journal* 1, no. 1 (2024): 1, <https://doi.org/10.33756/eslaj.v1i1.24195>; Ahmad Ahmad, "Analysis of Abuse of Authority by Government Apparatus in the State Administrative Legal System," *International Journal of Constitutional and Administrative Law* 1, no. 1 (2025): 1.

¹⁰ Wirawan Dodi et al., "Work from Home: Measuring Satisfaction between Work – Life Balance and Work Stress during the COVID-19 Pandemic in Indonesia," *Economies* 9, no. 3 (2021): 96; Amit Kramer and Karen Z. Kramer, "The Potential Impact of the Covid-19 Pandemic on Occupational Status, Work from Home, and Occupational Mobility," *Journal of Vocational Behavior Journal* 119 (2020): 103442.

¹¹ Wesley G. Jennings and Nicholas M. Perez, "The Immediate Impact of COVID-19 on Law Enforcement in the United States," *American Journal of Criminal Justice* 45, no. 4 (2020): 690–701, <https://doi.org/10.1007/s12103-020-09536-2>; Jan Petrov, "The COVID-19 Emergency in the Age of Executive Aggrandizement: What Role for Legislative and Judicial Checks?," *Theory and Practice of Legislation* 8, nos. 1–2 (2020): 71–92, <https://doi.org/10.1080/20508840.2020.1788232>; Joe McIntyre et

include the adoption of a cyber notary through online document signing¹². The COVID-19 pandemic has also exposed fundamental weaknesses in Indonesia's legal structure regarding online notary services. The absence of regulations explicitly governing digital authentication procedures, electronic signatures, and the virtual presence of parties has created legal uncertainty in the execution of authentic deeds online. Furthermore, the absence of technical standards or implementation guidelines from the government demonstrates the weak preparedness of legal institutions to respond to the need for digitalization of notary services during the crisis¹³.

In line with this, numerous studies emphasize the potential of cyber notaries to increase service efficiency, reduce operational costs, and overcome geographic and time constraints through the use of electronic signatures and encryption¹⁴. However, the success of cyber notaries depends on the existence of a robust legal framework that validates electronic documents and ensures the protection of personal data from cyber threats. This has prompted many countries to initiate specific regulations to support the adoption of cyber notaries while preserving core legal principles.

Despite these advancements, challenges persist. One of the main barriers is the digital divide, including the uneven availability of technological infrastructure and varying levels of digital literacy¹⁵. Additionally, resistance from legal practitioners to digital transformation remains significant. Therefore, it is crucial to conduct further research to understand best practices from countries that have successfully implemented cyber notary systems, and to explore how these models can be adapted in countries with different legal and technological contexts. A sharper analytical framework needs to holistically integrate technological, social, and legal dimensions by examining how digital infrastructure readiness, public literacy, and legal certainty mutually influence the implementation of cyber notaries. This approach allows for a more in depth analysis of the interrelationships between these factors, resulting in realistic and contextual policy recommendations for Indonesia.

Most previous research has focused on the technical and administrative aspects of implementing cyber notaries, without deeply examining the need for a clear and

al., "Civil Courts and COVID-19: Challenges and Opportunities in Australia," *Alternative Law Journal* 45, no. 3 (2020): 195–201, <https://doi.org/10.1177/1037969X20956787>.

¹² Maghfira Humaira and Pieter Everhardus Latumeten, "Comparison of Notary Deed in Indonesia, Netherlands, and Belgium during the COVID-19 Pandemic," *Linguistics and Culture Review* 6 (2022): 233–43, <https://doi.org/10.21744/lingcure.v6ns5.2154>.

¹³ Stefan Koos, "The Digitization of Notarial Tasks - A Comparative Overview and Outlook of 'Cyber Notary' In Indonesia and Germany," *The Indonesian Journal of Socio-Legal Studies* 2, no. 2 (2023): 1–28, <https://doi.org/10.54828/ijsls.2023v2n2.1>.

¹⁴ Henry Aspan et al., "Enhance Cyber Notary for Buyers Online Buying and Sale," *Jurnal Ekonomi* 12, no. 02 (2023): 2023; Alincia and Sitabuana, "Urgency of Law Amendment as Foundation of The Implementation of Cyber Notary."

¹⁵ Lili Julianti and Gunawan Djajaputra, "Opportunities For Cyber Notary Implementation In A Legal Perspective," *Humanities and Social Sciences Letters/Journal of Law, Politic, And* 4, no. 4 (2024): 803–9.

comprehensive legal framework in Indonesia¹⁶. Although Law Number 2 of 2014 concerning the Office of Notaries (UUJN) and Law Number 11 of 2008 concerning Electronic Information and Transactions (UU ITE) have provided the legal basis for this practice, regulatory gaps and uncertainty remain in its implementation¹⁷. Furthermore, the mismatch between positive legal provisions and technological developments and the lack of a specific legal framework have slowed the digitalization of notary services¹⁸. This limitation indicates a lack of normative exploration tailored to Indonesia's civil law system, which this study seeks to address.

This research needs to be carried out because the development of information technology has brought significant changes in various aspects of life, including legal services. In the digital era, the need for fast, safe, and electronic-based notary services is increasing to accommodate electronic transactions that continue to grow¹⁹. This adaptation not only supports efficiency and accessibility but also ensures the relevance of the notary profession in facing the modernization of the global legal system. In addition, this study is important for identifying opportunities, challenges, and legal implications of implementing cyber notaries in Indonesia, considering the need for clear regulations and integration with traditional legal principles, such as the authenticity and validity of documents. This research can also provide policy recommendations to strengthen public trust in notary services in the digital era.

The reason for choosing a case study in Indonesia is because this country is facing challenges in adapting technology to the legal sector, including the implementation of cyber notaries²⁰. As a country with a large population and cultural and geographical diversity, Indonesia has an urgent need to increase the efficiency and accessibility of legal services to reach the wider community. In addition, the Indonesian legal system, which is rooted in civil law and still relies on manual processes, requires reform to keep up with the demands of global modernization and digitalization. This case study is also relevant because there are regulatory gaps in information technology regulation, including data security and the validity of electronic documents. By focusing on Indonesia, this research can provide contextual insight into the challenges and opportunities in implementing

¹⁶ Habibah Lestari. MS et al., "Cyber Notary Dalam Sistem Hukum Indonesia: Analisis Kritis Terhadap Kekosongan Regulasi Dan Tantangan Implementasi," *Indonesian Journal of Islamic Jurisprudence, Economic and Legal Theory* 3, no. 2 (2025): 1847–54, <https://doi.org/10.62976/ijjel.v3i2.1182>.

¹⁷ Muh Akbar et al., "Legal Analysis of the Application of Cyber Notary in the Notary Profession in Indonesia," *JULIA: Jurnal Legislasi Amsir* 11, no. 2021 (2024): 352–58.

¹⁸ Ainun Najib, "Perlindungan Hukum Keamanan Data Cyber Notary Berdasarkan Undang-Undang Perlindungan Data Pribadi," *ACTA DIURNAL Jurnal Ilmu Hukum Kenotariatan* 7, no. 1 (2023): 43–59, <https://doi.org/10.23920/acta.v7i1.1680>.

¹⁹ Luh Anastasia Trisna Dewi, "Legal Aspect of Cyber Notary in Indonesia," *Journal of Digital Law and Policy* 1, no. 1 (2021): 37–44, <https://doi.org/10.58982/jdlp.v1i1.92>; Alincia and Sitabuana, "Urgency of Law Amendment as Foundation of The Implementation of Cyber Notary."

²⁰ Akbar et al., "Legal Analysis of the Application of Cyber Notary in the Notary Profession in Indonesia"; Alincia and Sitabuana, "Urgency of Law Amendment as Foundation of The Implementation of Cyber Notary."

cyber notary, as well as offering solutions that can be implemented within a national legal framework that is in line with community needs and technological developments.

Problem Statement

This study aims to explore the adaptation to changes in notary practices in Indonesia in the context of cyber notary implementation. It focuses on the legal, technological, and institutional challenges and proposes a framework to support effective and sustainable cyber notary adoption. This study provides a novel contribution by developing a legal framework tailored explicitly to Indonesia's civil law context something largely overlooked in previous research, which tends to emphasize technological or administrative aspects of cyber notary adoption. By focusing on normative integration, this study fills a critical gap in the discourse on legal modernization. Based on this context, the main research problem can be formulated: How can Indonesia adopt a legally valid and effective cyber notary framework that balances technological innovation with legal certainty and public trust? To address this question, the study emphasizes the need for a balanced approach that aligns technological innovation with the foundational principles of Indonesian legal doctrine. The expected outcome is the formulation of a comprehensive and adaptive legal framework that ensures cyber notary implementation strengthens, rather than undermines, the integrity of the nation's legal system.

Methods

This research uses a normative legal research method with a conceptual and statutory approach. This method was chosen because the research focuses on analyzing the legal framework, regulatory challenges, and the integration of traditional legal principles in the implementation of cyber notaries in Indonesia. Normative legal research examines secondary legal materials such as Law Number 2 of 2014 concerning the Position of Notary (UUJN) and Law Number 11 of 2008 concerning Information and Electronic Transactions (UU ITE), as well as secondary legal materials in the form of scientific journals, policy reports, and academic literature related to digital transformation in notary services.

Another approach used is thematic analysis, which was chosen because it allows researchers to understand complex and contextual phenomena in depth. Thematic analysis, which focuses on identifying, analyzing, and reporting patterns or themes in data, helps uncover key issues in cyber notary implementation. Secondary legal materials include documents, such as journal articles, regulatory reports, and policies, providing a rich basis for exploring theoretical and practical perspectives regarding notary adaptation to digital technology. The choice of this approach is based on its advantages in extracting meaning from textual data, identifying challenges and opportunities, and understanding the social, legal, and technological dynamics that influence this transformation. With thematic analysis, research results can provide structured and

relevant insights, supporting efforts to develop a legal framework that suits the needs of digital transformation in Indonesia.

In this research, the analytical tool used is NVivo 12 Plus, which is designed to help manage and analyze qualitative data systematically. NVivo 12 Plus was chosen because of its ability to organize document data, code relevant themes, and visualize relationships between themes through the queries and charts features. The use stage begins with importing source documents, such as journal articles, legal regulations, and scientific reports, into the software. Next, a coding process was carried out to identify main themes, such as efficiency, regulatory challenges, and technology adaptation. Once the themes were categorized, NVivo was used to analyze the relationships and patterns between the themes, for example how regulatory challenges influenced cyber notary adoption. These tools not only improve the efficiency of data analysis but also help produce more structured and reliable findings, thereby supporting accurate and insightful conclusions.

The findings of the thematic analysis were then translated into legal analysis through a normative validation process against the provisions contained in Law Number 2 of 2014 concerning the Office of Notaries (UUJN), Law Number 11 of 2008 concerning Electronic Information and Transactions (UU ITE), and their implementing regulations. This validation was conducted by comparing identified issues, such as efficiency, data security, and regulatory challenges with applicable positive legal norms to assess the extent to which existing regulations are able to accommodate cyber notary practices.²¹ Furthermore, this analysis also highlighted areas that are not yet clearly regulated in legislation, in order to identify the need for legal reform and provide a conceptual basis for the formation of a new legal framework that is in accordance with the principles of the Indonesian legal system.

Cyber Notary Practices in Indonesia

1. Digital Transformation in Notary Practice: Opportunities and Challenges

This section discusses the opportunities presented by cyber notaries. Apart from that, the challenges that arise are also explained. The explanation is based on findings from thematic analysis of documents and relevant literature.

Table 1. Opportunities and challenges for cyber notaries in Indonesia

Aspect	Opportunities	Challenges
Efficiency in Time	Accelerates the document authentication process through electronic signatures.	Limited public awareness of digital services in the legal sector.

²¹ Siti Mariyam et al., "Safeguarding Personal Data in Indonesian E-Commerce From a Constitutional Rights Perspective," *Jambe Law Journal* 8, no. 2 (2025), <https://doi.org/10.22437/x5q9y093>.

Cost Reduction	Reduces operational costs by minimizing the use of physical documents.	Limited access to digital technology in some regions.
Accessibility	Enables notary services to reach remote areas online.	Uneven internet infrastructure, especially in rural areas.
Data Security	Encryption technology enhances protection against digital documents.	Cybersecurity threats, including data breaches and identity theft.
Digital Regulation	Provides opportunities for harmonizing national law with international standards.	Lack of a comprehensive legal framework to support cyber notary.
Modernization of Legal Services	Supports digital transformation in the legal sector to improve efficiency.	Resistance from traditional notaries to technological change.

Source: Processed by researchers from the literature, 2024.

The implementation of cyber notaries in Indonesia presents a great opportunity to speed up the document authentication process through the use of electronic signatures. However, the main challenge faced is the low level of public awareness of digital services in the legal sector. Many communities, especially in remote areas, still prioritize conventional services that require physical presence, which contributes to a slowdown in the legal process. Apart from that, the lack of digital education and understanding of the importance of security and validity of electronic documents are obstacles to the adoption of cyber notaries. Therefore, efforts to increase digital literacy and awareness campaigns regarding the benefits of technology in notary services are crucial steps to ensure the implementation of a cyber notary is effective and accepted by all levels of society in Indonesia ²².

The implementation of cyber notaries in Indonesia offers the potential to reduce operational costs by minimizing the use of physical documents and reducing the need for conventional services ²³. However, the main challenge faced is limited access to digital technology in several areas, especially in remote areas that have not been fully integrated with adequate internet infrastructure. This makes digital notaries difficult to access by

²² Fina Nazran et al., "Legal Protection of Notaries in Document Validation through Technology-Based Systems: A Comparative Legal Review of Indonesia, the United States, the Netherlands, and Australia," *Journal of Ecohumanism* 3, no. 7 (2024): 4975–82, <https://doi.org/10.62754/joe.v3i7.4608>.

²³ Nurwanty Setiawan and Nynda Fatmawati Octarina, "Legal Uncertainty Over Notary Protocols in Law Number 43 of 2009," *Journal of Law and Legal Reform* 3, no. 4 (2022): 543–66, <https://doi.org/10.15294/jllr.v3i4.58654>; Bisyarohatie et al., "Online System Policy And Cyber Notary In Facing The Impact Of Covid-19."

people in the area, thus hampering the implementation of cyber notaries. To overcome this, there needs to be a collaborative effort to expand access to technology and develop solutions that support digital inclusion, so that the benefits of cost efficiency offered by cyber notaries can be felt equally by all Indonesian people.

The implementation of cyber notaries in Indonesia allows notary services to reach remote areas online, which were previously difficult to reach through conventional services²⁴. However, the challenge faced is uneven internet infrastructure, especially in rural areas. Limited stable internet connections make access to digital services difficult, thus hampering the expansion of cyber notaries throughout Indonesia. Efforts to improve digital infrastructure need to be increased so that people in all regions can enjoy the benefits of accessibility offered by cyber notaries.

Apart from that, data security is an important aspect in implementing cyber notaries²⁵. Encryption technology can improve the protection of digital documents, but cybersecurity threats, such as data hacking and identity fraud, remain a major challenge.²⁶ It is important to continue to develop more robust security systems and ensure that data security protocols are always updated to protect the validity and privacy of documents²⁷ handled by cyber notaries.

The implementation of cyber notaries in Indonesia opens up opportunities to harmonize national law with international standards, thereby increasing credibility and trust in digital legal services. Currently, the main legal basis relating to the practice of cyber notaries is contained in Law Number 2 of 2014 concerning the Office of Notaries (UUJN) and Law Number 11 of 2008 concerning Information and Electronic Transactions (UU ITE) and its amendments through Law Number 19 of 2016. UUJN regulates the authority of notaries in validating legal documents and transactions (Article 15 paragraph (3)), while the UU ITE regulates the validity of information and electronic signatures (Articles 5–11). In addition, there are also several derivative regulations such as Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions (PP 71/2019) and Regulation of the Minister of Communication and Informatics Number 11 of 2022 concerning the Implementation of Electronic Systems by Public and Private Electronic System Providers, which provide technical guidelines regarding data security, certification, and digital signatures.

²⁴ Julianti and Djajaputra, "Opportunities For Cyber Notary Implementation In A Legal Perspective."

²⁵ Vamelia Kencana et al., "The Urgency of Electronic Notary Protocol Storage in E-Notary Perspective," *International Journal of Social Science and Human Research* 6, no. 08 (2023): 4712–20, <https://doi.org/10.47191/ijsshr/v6-i8-13>.

²⁶ Andistya Pratama et al., "Bridging Regulation and Reality: Comparative Study of Artificial Intelligence Regulation in the Financial Sectors," *Legality: Jurnal Ilmiah Hukum* 33, no. 2 (2025): 307–33, <https://doi.org/10.22219/ljih.v33i2.38908>.

²⁷ Muhamad Amirulloh et al., "Legal Basis and Readiness of the Banking Sector in Implementing Privacy Reliability Certificatiblockon," *Jurnal IUS Kajian Hukum dan Keadilan* 13, no. 3 (2025): 545–58, <https://doi.org/10.29303/ius.v13i3.1777>.

However, these statutory provisions do not explicitly regulate the institutional framework, procedural mechanisms, and legal responsibilities of notaries in electronic document notarization. For example, there are no clear regulations regarding the requirements for digital identity verification by notaries, standards for the storage and encryption of electronic deeds, or the legal status of virtual presence before a notary. This regulatory gap creates uncertainty regarding the validity and legal force of electronically notarized documents. Therefore, it can be concluded that the existing legal framework remains fragmented and incomplete, necessitating the establishment of comprehensive regulations to regulate and support the effective and legally valid implementation of cyber notarization in Indonesia.

In addition, the modernization of legal services through cyber notary aims to increase efficiency and speed up the legal process. However, resistance from traditional notaries who tend to maintain conventional practices is still a major obstacle. Fear of losing control of the legal process and lack of technological understanding are factors that slow down the adoption of these new technologies²⁸. Therefore, education, training, and better integration between technology and traditional practices are very necessary to create a harmonious and productive transformation in legal services in the digital era.

The implementation of cyber notary in Indonesia presents various opportunities, such as time efficiency, reduced operational costs, wide accessibility, and increased data security through digital technology. However, the challenges faced include low public awareness of digital services, limited access to technology in remote areas, and legal regulations that are not yet fully supportive. Apart from that, resistance from traditional notaries to technological changes is also a major obstacle. Therefore, efforts to increase digital literacy, strengthen technological infrastructure, and develop a comprehensive legal framework are very important to ensure the successful implementation of cyber notary in Indonesia.

Digital transformation in notarial practice is not merely a matter of technical or administrative efficiency, but is also closely related to changes in the legal paradigm and public trust in the notarial system. In the Indonesian context, where legal legitimacy still relies heavily on physical presence and wet signatures, the implementation of cyber notaries challenges the fundamental principle of "actual presence" inherent in notarial practice. This epistemological challenge demands a redefinition of the concepts of authentication, legal proof, and notarial authority in the digital world. Therefore, the success of cyber notaries requires not only the support of digital infrastructure but also adaptation at the normative and cultural levels, so that the concept of virtual presence can be legally recognized without diminishing the legal value of documents.

Furthermore, the biggest legal challenge is the mismatch between legal norms and

²⁸ Ika Yuli Agustin and Ghansham Anand, "Proposing Notaries' Deed Digitalization in Indonesia: A Legal Perspective," *Lentera Hukum* 8, no. 1 (2021): 49-72, <https://doi.org/10.19184/ejhl.v8i1.21375>.

technological realities. Although the ITE Law and the UUJN provide a general legal basis, their application to digital notarial practices still leaves a gray area. For example, there is no explicit explanation of how notaries can verify the identity of parties to online transactions, or how to ensure that virtual presence has the same evidentiary value as physical presence before a notary. This ambiguity has the potential to give rise to normative conflicts in practice, particularly if digitally generated documents are disputed in court. Thus, reinterpretation and revision of existing legal norms are necessary to ensure their compatibility with the ever-evolving practice of digital law.

From a sociological perspective, resistance from traditional notaries stems not only from technological unpreparedness but also from concerns about a shift in professional authority. In a legal system based on trust (a trust based profession), the role of a notary is not merely an administrative implementer, but also a guardian of the moral and legal validity of a transaction. When this process is transferred to a digital system, concerns arise that human interaction and ethical oversight will be weakened. Therefore, the digitalization of notaries must be balanced with a code of ethics and a digital audit system that guarantees the integrity of the profession. Professional education and digital ethics training are crucial to ensure that modernization does not erode the fundamental values of notarial practice.

Meanwhile, from a public policy perspective, the government's approach to digital legal transformation still tends to be sectoral and not yet integrated across institutions. Implementing cyber notaries requires close coordination between the Ministry of Law and Human Rights, the Ministry of Communication and Informatics, and electronic certification bodies to ensure consistent security standards and data validity. However, in reality, many policies operate independently without a solid coordination framework. As a result, regulatory duplication and overlapping authority hamper the effectiveness of digital transformation. Therefore, the government needs to establish a cross-sectoral task force specifically addressing legal digitalization, including notaries, to ensure policy synchronization and legal protection for all parties involved.

Thus, digital justice must also be a primary focus in the development of cyber notaries. The unequal access to technology between urban and rural areas has the potential to create a new gap in access to legal services. Communities in remote areas without adequate internet infrastructure will be further left behind in accessing digital notary services. Therefore, the implementation of cyber notaries must be accompanied by strategies for equitable access and digital literacy so that its benefits are not limited to certain groups. An inclusive and social justice-based approach is crucial for digital transformation in the notary sector to truly become an instrument of just and sustainable legal modernization in Indonesia.

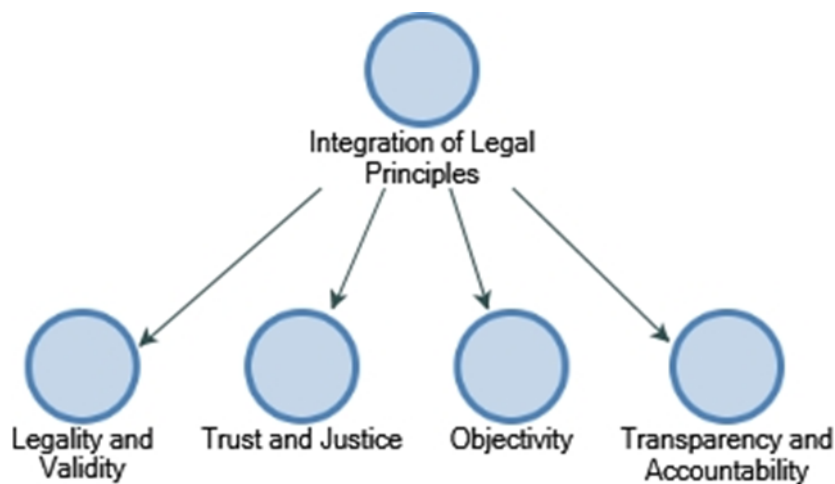
The successful implementation of cyber notary in Indonesia depends heavily on the national legal system's ability to integrate traditional legal principles with digital technological innovations. The principles of in-person presence, authentication, legal

responsibility, and protection of the interests of the parties are essential foundations of notarial practice. This integration does not mean replacing traditional values, but rather adapting them to the digital context to maintain their relevance and legal validity. Therefore, the integration of traditional legal principles in cyber notary is key to maintaining continuity between conventional legal legitimacy and the need for efficiency in the digital age. This approach not only ensures the formal validity of electronic documents but also strengthens public trust in a modern notary system that is adaptive, secure, and remains grounded in national legal values.

2. Integration of Traditional Legal Principles in Cyber Notary

The implementation of cyber notary in Indonesia not only involves the adoption of digital technology but also requires the integration of traditional legal principles to ensure the legitimacy and validity of documents.

Figure 1. Integration of traditional legal principles in cyber notary



Source: Adapted from various documents, 2024.

In a cyber notary system, the principle of legality is very important to ensure that all documents signed electronically have the same legal force as physical documents. Technology such as electronic signatures is used to verify the validity of documents and ensure that every digital transaction remains subject to applicable legal provisions. Law Number 2 of 2014 concerning the Position of Notaries is the main basis that regulates the duties and authority of notaries in handling documents electronically. In this context, notaries who carry out their duties digitally must ensure that every step taken, such as identity validation, document authentication, and data storage, is in accordance with the regulations set to maintain the integrity and validity of documents.

Apart from that, the principle of legality in cyber notary also includes strengthening legal certainty, where each party involved in a transaction cannot deny documents that have been signed electronically. Technologies such as encryption, two-factor verification, and non-repudiation ensure that published documents have unquestionable legal validity.

Thus, cyber notary helps strengthen public trust in digital notary services, without reducing the legal value of the documents produced.

In cyber notary, the principles of trust and fairness are realized through the use of sophisticated technology such as encryption and electronic authentication.²⁹ This technology ensures that signed digital documents cannot be manipulated or misused by unauthorized parties. This provides high levels of protection for the integrity and validity of documents, ensuring that every party involved in a digital transaction can have full confidence in the final result. In addition, this technology also helps create a fair environment where all parties concerned have equal access to valid documents without discrimination or manipulation.

Furthermore, the principle of justice in cyber notary is supported by a system that allows transparent monitoring and auditing of every document prepared electronically³⁰. In this way, parties using this service can be confident that the legal decisions taken are based on data that is not only secure but also free from manipulation. Therefore, cyber notary provides a guarantee of deep trust to users, integrating the values of justice that have long been applied in the traditional legal system with the modernization of digital technology.

The principle of objectivity in cyber notary is very important to maintain integrity and fairness in every legal transaction carried out digitally. The role of the notary as a neutral party remains respected, where technology acts as a tool to ensure that there is no manipulation or alteration of data that could harm either party. In the electronic document validation process, the system must be able to ensure that every step taken is objective and free from bias, so that the resulting legal decisions truly reflect existing facts without subjective intervention.

The technology used in cyber notary such as electronic verification, digital signature, and audit trail plays a role in maintaining objectivity by ensuring that the data processed remains consistent and safe. This ensures that legal decisions taken based on these documents have a solid basis and their validity cannot be doubted. Thus, the principle of objectivity in cyber notary not only maintains data integrity but also provides full trust to all parties involved in digital transactions.

The principles of transparency and accountability in cyber notary are strengthened through technology that enables digital document tracking and auditing. In traditional practice, transparency often relies on the physicality of documents and time-consuming

²⁹ Dwi Suryahartati et al., "Tradisi Hukum dan Inovasi Digital: Menakar Posisi Produk E- Notary pada Sengketa Perdata: Legal Tradition and Digital Innovation: Assessing the Position of e-Notary Products in Civil Disputes," *LITIGASI* 26, no. 1 (2025): 409–47, <https://doi.org/10.23969/litigasi.v26i1.19193>.

³⁰ Athina Styliani Kleinaki et al., "A Blockchain-Based Notarization Service for Biomedical Knowledge Retrieval," *Computational and Structural Biotechnology Journal* 16 (2018): 288–97, <https://doi.org/10.1016/j.csbj.2018.08.002>.

manual processes.³¹ However, with the integration of digital technology, all parties involved in legal transactions can access documents easily and monitor changes made in real-time. This ensures that every legal decision taken based on this document can be accounted for openly and does not give rise to doubt.

Additionally, technologies such as blockchain, digital signatures, and smart contracts in cyber notary provide an additional layer of transparency.³² Every stage in creating and verifying documents is recorded permanently on a platform that can be accessed by all authorized parties. In this way, not only is transparency maintained, but also higher accountability in the provision of digital legal services, which is in line with the principles applied in the traditional legal system.

Cyber notary presents an integration of traditional legal principles with modern digital technology. The principles of legality, trust, fairness, objectivity, as well as transparency and accountability remain the main basis for electronic document management. Technologies such as electronic signatures, encryption and authentication ensure that the resulting documents have legal force equivalent to conventional physical documents. In addition, cyber notary also strengthens trust and transparency, where every step in the process can be monitored and audited digitally, maintaining integrity and fairness in every legal transaction. In this way, cyber notary has succeeded in integrating traditional legal values with technological advances, creating a more efficient, safe and trustworthy system for the public in facing the need for digital legal services.

The implementation of *cyber notary* represents not merely a technical adaptation but a structural transformation of legal practice that challenges the boundaries of traditional jurisprudence. The shift from physical to electronic documentation compels a re-evaluation of the legal doctrines underpinning authenticity (*authentica fides*) and presence (*de visu*). In conventional legal doctrine, the physical presence of parties before a notary serves as a guarantee of voluntariness and validity; however, in a cyber notary system, such assurance is redefined through digital verification protocols. This paradigm shift raises an essential question: can algorithmic authentication truly replace human observation as the foundation of legal certainty? The challenge for Indonesia lies not only in drafting supportive regulations but also in ensuring that the philosophical foundations of the notary's role truth, neutrality, and legality are not diluted by technological mediation.

Furthermore, the digitalization of notarial services demands a more dynamic interpretation of *lex lata* (the existing law) and *lex ferenda* (the law as it ought to be). The

³¹ Mourad Benseghir et al., "Regulations and Consumer Rights in E-Commerce: A Comparative Analysis Between UAE and Indonesia," *Jurisdictie: Jurnal Hukum Dan Syariah* 16, no. 2 (2025): 374–416, <https://doi.org/10.18860/j.v16i2.33063>.

³² M. Ilham Tanzilulloh and Khoirun Nisa Aprilian Agmar, "Virality, Justice and the Principle of 'Blocking the Means to Evil,'" *De Jure: Jurnal Hukum Dan Syar'iah* 16, no. 2 (2024): 317–35, <https://doi.org/10.18860/j-fsh.v16i2.28847>.

current legal framework, particularly the Notary Law and the Electronic Information and Transactions (ITE) Law, remains rooted in the paradigm of physical documentation and in-person verification. As digital transactions evolve, rigid legal formalism becomes an obstacle to efficiency and innovation. Hence, reform must not merely extend existing provisions to the digital domain but must reinterpret them to fit the characteristics of cyberspace, where jurisdiction, identity, and authenticity are fluid concepts. The failure to adapt doctrinally risks producing a fragmented and inconsistent legal regime that undermines both public trust and legal certainty in digital notarial acts.

Another critical issue arises from the ethical dimension of *cyber notary* practice. While technology promises neutrality, it simultaneously introduces new vulnerabilities algorithmic bias, system errors, and unequal access. A notary's ethical obligation to ensure fairness (*aequitas*) and protect weaker parties becomes more complex in a digital environment mediated by software and data algorithms. This necessitates the development of *digital ethics* guidelines specific to notarial conduct, emphasizing human oversight, accountability, and ethical responsibility in managing digital records. Without such ethical anchoring, *cyber notary* runs the risk of transforming from a guardian of justice into a mere operator of automated legality, detached from the moral dimensions of legal practice.

In addition, the principle of *technological neutrality* that the law should not favor or discriminate against any specific technology should guide the regulatory design of *cyber notary*. Indonesia's current approach tends to adopt a reactive stance, responding to technological developments post hoc rather than anticipating them through proactive regulation. A more anticipatory legal framework would integrate continuous technological assessment, certification mechanisms for digital platforms, and mandatory compliance audits for notarial software. Such regulatory foresight not only strengthens institutional accountability but also ensures that the digital infrastructure used in notarial activities meets legal and ethical standards of reliability and security.

The socio-legal implications of *cyber notary* also deserve closer attention. Beyond the technical and legal aspects, digital notarial services can exacerbate inequalities between urban and rural communities. Regions with limited digital infrastructure may be excluded from the benefits of efficient electronic transactions, deepening the digital divide in access to justice. Therefore, *cyber notary* reform must be aligned with broader national digital inclusion policies. Ensuring equitable access to technological tools and digital literacy training is essential to realize the constitutional mandate of equal treatment before the law (*equality before the law*) in the context of digital transformation.

Ultimately, the sustainability of the *cyber notary* system depends on its ability to maintain a coherent integration between traditional legal principles and emerging digital norms. Rather than viewing technology as a replacement for legal traditions, it should be regarded as an instrument that amplifies the enduring values of legality, fairness, and accountability. The *integration of traditional legal principles in cyber notary* thus serves

not only as a juridical necessity but as a philosophical safeguard ensuring that modernization does not erode the normative essence of legal practice.³³ Through this balanced integration, Indonesia can develop a *cyber notary* model that is technologically advanced yet firmly rooted in the ethical and doctrinal integrity of its legal system.

Regulatory gaps remain one of the most pressing challenges in ensuring the effective and legitimate implementation of cyber notary systems in Indonesia. While the existing legal framework primarily *Law No. 2 of 2014 on the Position of Notary* and *Law No. 11 of 2008 on Electronic Information and Transactions (ITE)* provides general guidelines, these provisions were not designed to address the specific complexities of digital notarial practice. The absence of detailed implementing regulations concerning digital authentication mechanisms, storage standards for electronic documents, and procedures for verifying electronic identities creates uncertainty in law enforcement. Consequently, the regulatory framework needs to be reconstructed to establish explicit legal parameters for cyber notary operations, including standards for system security, accountability mechanisms, and procedures for dispute resolution arising from electronic notarial acts.

Furthermore, the current legal framework lacks synchronization between the notarial domain and the digital infrastructure regulated by the Ministry of Communication and Information Technology (Kominfo). The absence of an integrated data management and certification system for notarial activities limits interoperability between digital signature providers, electronic archives, and national identification systems. To close this gap, Indonesia should develop a unified *National Cyber Notary Framework* a cross-sectoral regulatory model that integrates legal, technological, and institutional components. This framework should establish the roles and responsibilities of notaries, government authorities, and technology providers in maintaining the integrity of digital legal documentation. A multi-agency regulatory body could also be established to oversee compliance, standardization, and periodic evaluation of digital notarial systems to ensure alignment with both national and international standards.

Another significant gap lies in the area of data governance and cyber security, which directly affects the trustworthiness of cyber notary systems. Current regulations provide only general stipulations regarding data protection, without specifying the standards for encryption, access control, or auditability in notarial contexts. Given the sensitive nature of notarial data often containing personal, financial, and contractual information specific provisions are required to ensure confidentiality, integrity, and availability. This includes mandating certified data centers, establishing digital evidence protocols, and integrating blockchain-based audit trails to prevent tampering or data loss. Additionally, the regulatory framework should define the scope of legal responsibility in cases of cyber

³³ Usman Rasyid et al., "Reformulation of the Authority of Judicial Commission: Safeguarding the Future of Indonesian Judicial Power," *Jambura Law Review* 5, no. 2 (2023): 2, <https://doi.org/10.33756/jlr.v5i2.24239>.

breaches clarifying whether accountability rests with the notary, the system provider, or the state to maintain public confidence in digital legal processes.

Bridging the regulatory gap requires the adoption of a future-oriented legal design, capable of anticipating technological evolution rather than merely reacting to it. Indonesian policymakers must shift from a reactive regulatory model to an adaptive one that embraces the principle of *technological neutrality* allowing innovation without sacrificing legal certainty. This can be achieved by introducing flexible legal instruments such as *sandbox regulations* or *adaptive legal clauses* that permit experimentation under supervision while maintaining compliance with ethical and procedural standards. Furthermore, the development of cyber notary regulations should involve continuous academic and professional collaboration, ensuring that legal, technical, and ethical dimensions evolve coherently. By addressing these regulatory gaps through anticipatory and integrative reform, Indonesia can position itself as a regional leader in digital legal governance balancing innovation with the preservation of its legal traditions.

Conclusion

The implementation of cyber notaries in Indonesia presents significant opportunities to increase efficiency, accessibility, and data security, but is faced with challenges such as low public awareness of digital services, limited technology in remote areas, and regulations that are not yet fully supportive. Efforts to address these challenges through increasing digital literacy, strengthening technological infrastructure, and drafting a comprehensive legal framework are essential. By integrating traditional legal principles with modern digital technology, cyber notaries are expected to be able to maintain legality, fairness, objectivity, and transparency in electronic document management, creating a more efficient, safe, and trustworthy system for the public-facing the need for digital legal services.

This study's limitations lie in its conceptual and normative scope, which does not fully describe the empirical dynamics of cyber notary implementation in the field. This study focuses more on legal and theoretical analysis of the integration of traditional principles into digital systems without verification through case studies or primary data from notary practices in Indonesia. Furthermore, limited access to the latest policy documents and technical data regarding notary digital infrastructure limits the depth of the evaluation of institutional readiness and system security. Therefore, further empirical and comparative research is needed to test the effectiveness of the legal framework and identify implementation challenges in the context of the digital transformation of the notary sector.

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