



Exploring the Potential of the Cyber Notary Concept in the Framework of International Transaction Settlement

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Abstract

This article examines the potential of Cyber Notary in facilitating international transactions and the legal challenges involved. With increasing demand for swift and secure cross-border transactions, technologies like digital signatures and blockchain offer innovative solutions for faster document validation. Successful implementations of Remote Online Notarization (RON) in the United States and the eIDAS standard in Europe highlight their effectiveness in enhancing efficiency. In Indonesia, challenges such as regulatory inconsistencies, limited public trust in digital documents, and cybersecurity issues hinder adoption. While the Electronic Information and Transactions Law provides a legal basis for electronic documents, achieving international recognition remains a significant hurdle. This research uses a normative legal methodology with a comparative approach, analyzing Cyber Notary practices in different jurisdictions to uncover opportunities and obstacles. Strengthening regulations, improving digital infrastructure, and increasing public awareness are critical steps to realize Cyber Notary's potential. If successfully implemented, Cyber Notary can facilitate efficient, secure, and legally recognized international transactions, advancing Indonesia's role in the global digital economy.

Keywords: Cyber Notary; International Transactions; Digital Law; Legal Framework; Transaction Resolution.

Introduction

The phenomenon of the development of the era where digital technology is proliferating, almost every aspect of life is experiencing metamorphosis, including the legal realm which is now welcoming the presence of the Cyber Notary concept. This innovation allows notary services to transform into electronic form, offering extraordinary potential to accelerate and facilitate cross-border transactions. This research is presented as a response to the urgent need for digital transformation in notarial practice, especially in the context of increasingly inevitable economic globalization. In Indonesia, the role of notaries is strictly regulated in the Civil Code (KUHPPerdata), especially in Article 1868, which emphasizes that authentic deeds must be prepared by authorized officials in accordance with applicable legal provisions. With this background, this study aims to explore the implementation of Cyber Notary in international transactions and adjust existing regulations to support this innovation, in line with Ikhsan Lubis' previous thoughts on digital transformation in Indonesia.¹

¹ Ikhsan Lubis, Detania Sukarja, and Rosmalinda, "Penetration Of International

In theoretical studies, Cyber Notary is interpreted as an evolution of traditional notary theory, which emphasizes the creation of authentic documents as evidence with legal force. Along with the rapid advancement of information technology, this theory adapts to meet the need for electronic documents that are equivalent to physical documents in terms of legal force. Modern notary theory must now integrate elements of digitalization, such as electronic signatures and blockchain, which offer a higher level of security and legal certainty in every transaction. This theoretical framework also includes an analysis of cybersecurity and data protection, two crucial aspects that need to be considered in the development of Cyber Notary, given the risks inherent in the use of digital technology in legal services.

Previous research on Cyber Notary has revealed challenges and opportunities in its implementation, noting that the heterogeneity of laws across countries is a major barrier to implementation in Indonesia. The main focus of this research is the importance of adopting international standards so that electronic documents prepared by notaries can be recognized globally, creating a bridge between local and international law. Emphasis on harmonizing national and international regulations is also very important to prevent overlapping rules that could potentially hinder the smoothness of cross-border transactions. In this context, this research continues the discussion by highlighting the application of Cyber Notary in international transactions and analyzing how Indonesian law can be adjusted to support this innovation, making it relevant and responsive to the ever-evolving global dynamics.

This study also faces several limitations. First, the implementation of Cyber Notary in Indonesia is still in its early stages, so empirical data related to its effectiveness and challenges are very limited. Second, international regulations that support the use of electronic documents in cross-border transactions have not been fully integrated with national laws in many countries, including Indonesia. In addition, the limited digital infrastructure in Indonesia is a significant obstacle to the full adoption of Cyber Notary. These limitations narrow the scope of the study to theoretical and regulatory aspects. Nevertheless, this study still makes an important contribution in mapping the challenges that need to be overcome to implement Cyber Notary at the international level, paving the way for further research and the development of supportive policies.

Authentic deeds regulated in Article 1870 of the Civil Code (KUHPerdata) have perfect evidentiary power, meaning that the deed cannot be denied by the party signing it. However, in the context of international transactions, the validity of the document must be recognized in various jurisdictions, making international recognition of electronic documents prepared by Cyber Notary a crucial issue that needs to be addressed. Therefore, the legality and security aspects of electronic documents must be the main focus in the development of Cyber Notary, ensuring that every technological innovation is based on strong and widely accepted law. This approach will not only strengthen the integrity of the document, but also increase public trust in the electronic notary system on the global stage.

United Nations Convention on the Use of Electronic Communications in International Contracts provides a clear legal framework for the use of information technology in cross-border transactions. This convention offers guidance for countries to adopt digital technology in global business activities. The alignment

Economic Law In The Development Of The Cyber Notary Concept In Indonesia,” *Al-Risalah-Forum Kajian Hukum Dan Sosial Kemasyarakatan* 22, no. 1 (n.d.): 125–38.

between this convention and the domestic laws of each country, including Indonesia, is very important. The Civil Code (KUHPPerdata) continues to function as the main basis for regulating authentic documents in Indonesia, so innovations in Cyber Notary must be in line with existing legal provisions. In this context, international collaboration to establish common standards is key to the successful implementation of Cyber Notary globally, ensuring that this system is not only effective but also recognized and accepted in various jurisdictions.

The implementation of Cyber Notary requires not only legal adjustments, but also supporting technological infrastructure. The Electronic Information and Transactions Law (ITE) provides a legal basis for the use of electronic documents in Indonesia; however, according to Ikhsan Lubis, challenges in terms of the security and integrity of digital documents still remain. This study identifies that the existence of adequate digital infrastructure and integration with international standards are two crucial elements that must be considered in the development of Cyber Notary. Thus, this study not only focuses on the legal aspect, but also explores the readiness of technology in Indonesia to support Cyber Notary innovation, ensuring that all elements are integrated to create a safe and effective system.²

This study also faces limitations in terms of technology adoption in Indonesia, especially in areas with limited digital infrastructure. These limitations have the potential to hinder the implementation of Cyber Notary as a whole, especially in rural areas that do not yet have full access to digital services. Unequal access to technology can slow down the adoption of this innovation, so the right strategy is needed to ensure that all regions of Indonesia can benefit from this technology. Nevertheless, this study provides important insights into the steps that need to be taken to ensure the successful implementation of Cyber Notary both at the national and international levels, emphasizing the need for synergy between regulation, infrastructure, and public education to bridge the digital divide.

In the ever-evolving digital era, the implementation of Cyber Notary offers significant potential to streamline and facilitate international transactions. First, the concept can improve the efficiency and security of documents through technologies such as digital signatures and blockchain, which provide legal certainty in the validation of electronic documents. With proper adoption, Cyber Notary can be a vital tool in expediting the transaction process, as well as reducing the time and costs usually associated with traditional notary procedures.

However, legal challenges also arise in the implementation of Cyber Notary in various jurisdictions. The heterogeneity of regulations between countries, where domestic laws of each country are not always in line with international principles, creates significant obstacles to the recognition of electronic documents issued by Cyber Notary. For example, in the Indonesian context, the Civil Code (KUHPPerdata) provides a legal basis for authentic documents, but its implementation in international transactions requires wider recognition in order to be accepted in other countries.³

Formulation of the Problem

Therefore, a thorough understanding of the potential and challenges of Cyber Notary is essential to identify the steps to be taken. This study aims to investigate

² Hermin, *Regulasi Penandatanganan Secara Elektronik Terhadap Akta Otentik* (Ponorogo: Uwais Inspirasi Indonesia, 2024).

how the concept of Cyber Notary can be effectively integrated into the international legal framework, while addressing the existing legal challenges. Through an analysis of the opportunities and obstacles in a global context, this study contributes to the mapping of strategies needed to ensure the successful implementation of Cyber Notary widely.

Research methods

The research method used is a normative legal method with a comparative approach. Data were obtained through a literature study covering primary and secondary legal materials, as well as an analysis of the application of Cyber Notary in various countries with different legal systems. This comparative approach is designed to identify the challenges and opportunities faced in the application of Cyber Notary in the context of international transactions, providing in-depth insight into how this innovation can be effectively integrated into the existing legal framework. Thus, the application of Cyber Notary not only has the potential to accelerate and facilitate cross-border transactions, but also requires harmonization between national and international regulations to ensure its optimal functionality in various jurisdictions.

Discussion

1. Potential of Cyber Notary in International Transactions

Cyber Notary is an innovation that offers an effective solution for cross-border transactions that require speed and legal validity. In the midst of increasingly rapid globalization, international business practices are often hampered by manual processes that require physical presence. Technologies such as blockchain and electronic signatures enable efficient and secure document validation, thereby accelerating the entire transaction process. In Europe, for example, the implementation of Regulation (EU) No 910/2014 (eIDAS) has accelerated cross-border transactions by providing assurance of the validity of digital signatures.³ This arrangement shows the great potential of Cyber Notary in improving the efficiency and security of international transactions.

The implementation of Cyber Notary allows for the reduction of time and costs usually associated with traditional notary procedures. With the right technology, the document verification process can be done in real-time without the need for the physical presence of a notary, which in turn increases accessibility for business people in various countries.⁴ In this context, the importance of regulatory harmonization at the international level becomes clear, as regulatory differences can be a barrier to the recognition of electronic documents produced by Cyber Notaries.

The success of Cyber Notary in international transactions is highly dependent on the legal framework that supports this innovation. Collaboration between countries is needed to establish common standards that will facilitate the recognition and acceptance of electronic documents across jurisdictions. By strengthening this legal framework, Cyber Notary can serve as a pillar in efficient and secure international transactions, providing a much-needed solution in today's

³ European Union, Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on Electronic Identification and Trust Services for Electronic Transactions in the Internal Market, 2014

⁴ Puteri Chintami Oktaviani, "Hambatan Regulasi Dan Teknis Terkait Implementasi Cyber Notary Di Indonesia," *Jurnal Pembangunan Hukum Indonesia* 6, no. 2 (n.d.): 243–59.

digital age.

An interesting use case of Cyber Notary in the United States is in the real estate sector. In the state of Virginia, a British citizen managed to buy a property without a physical presence in the US thanks to the Remote Online Notarization (RON) service.⁵ Through video conferencing and electronic signatures, the transaction was completed efficiently. The process allowed the buyer to digitally sign the documents from the UK, while a notary in Virginia verified the identity and witnessed the signing¹. This case is a clear demonstration of how Cyber Notary can facilitate cross-border transactions without the need for physical presence.

However, the potential of Cyber Notary is not limited to real estate transactions. This innovation can also be applied in commercial transactions and business contract agreements. Multinational companies often face difficulties in drafting cross-border business agreements due to differences in laws and requirements in various jurisdictions. With the implementation of Cyber Notary, documents can be created, legalized, and legally recognized in various countries, as long as they meet international standards, such as the UNCITRAL Model Law on Electronic Commerce.⁶ This shows that the use of Cyber Notary can reduce administrative barriers and speed up business processes between countries.

Thus, the potential of Cyber Notary in international transactions is enormous, and this innovation has the potential to change the way global businesses operate. The successful implementation of Cyber Notary requires close collaboration between countries to ensure that existing regulations can support the widespread adoption of this technology.

The implementation of Cyber Notary in Indonesia, although still in its early stages, promises to significantly transform international business transactions. With the rapid growth in demand for fast and efficient document legalization processes, Cyber Notary offers an innovative solution to overcome geographical barriers. For example, Indonesian companies entering into agreements with partners in the United States can use Cyber Notary to sign electronic contracts without physical presence, saving time and money while ensuring the legal validity of documents in both countries.⁷

However, to realize this potential, Indonesia must develop a solid technological infrastructure and supporting regulations. In Europe, the eIDAS regulation guarantees the legal force of electronic signatures equal to physical signatures, while in Indonesia, the ITE Law provides a relevant legal basis for electronic documents. The challenge lies in international recognition; without harmonization between national and international regulations, documents issued in Indonesia risk not being recognized in other jurisdictions.⁸

Security is a critical issue in implementing Cyber Notary, where risks such as identity fraud and cyberattacks lurk. Technologies such as blockchain and end-to-end encryption are needed to maintain the integrity of the document. Estonia, with its e-Residency system, has demonstrated success in implementing Cyber Notary with a high level of security, making it a model for other countries that want to

⁵ Virginia Secretary of the Commonwealth, "Remote Online Notarization," 2023

⁶ UNCITRAL, *Model Law on Electronic Commerce*, 1996, United Nations Commission on International Trade Law,

⁷ Kementerian Perdagangan Republik Indonesia, *Pedoman Ekspor dan Impor*, 2023

⁸ Republik Indonesia, *Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik*, Lembaran Negara Republik Indonesia Tahun 2008 Nomor 58.

follow in its footsteps.⁹ Through strategic steps and international cooperation, Cyber Notary can become a main pillar in facilitating cross-border transactions effectively and safely.

Similar challenges are also faced in Indonesia, especially in terms of uneven digital infrastructure. In big cities, the adoption of digital technology is more advanced, but in rural areas, access to technology is still limited. This is an obstacle to the implementation of Cyber Notary nationally. The government needs to work with the private sector to build a digital infrastructure that supports the adoption of Cyber Notary throughout Indonesia. With adequate infrastructure, the potential of Cyber Notary can be fully utilized to increase the efficiency of cross-border transactions.¹⁰

The potential of Cyber Notary in international transactions is also related to the issue of document legality in various countries. Each country has different regulations regarding the recognition of electronic documents, and this can be an obstacle in cross-border transactions. Harmonization of international regulations is essential to ensure that documents created by Cyber Notary are acceptable in different jurisdictions.¹¹ The case study in the European Union shows that thanks to the eIDAS regulation, member states can mutually recognize electronic documents created in other countries. If Indonesia can adopt similar steps and adjust its regulations, the potential of Cyber Notary in international transactions can be optimally realized. This step will not only speed up the document legalization process but also increase Indonesia's competitiveness in the global arena.

The urgent need for international standards to ensure the security and validity of electronic documents is increasingly evident. The UNCITRAL Model Law on Electronic Commerce offers guidance for countries in formulating electronic transaction regulations, but its implementation varies depending on their respective domestic legal frameworks. In Indonesia, the Civil Code (KUHPerdata) remains the main reference in regulating authentic documents, so any steps towards adopting Cyber Notary must be in line with these legal principles. This alignment is essential to building public trust and the legal legitimacy of electronic documents, ensuring that technological innovations can function within the existing legal framework and meet the expectations and needs of society.

Thus, although the potential of Cyber Notary is very large, its implementation must be supported by solid regulations and harmonization with international standards. Without a strong legal basis, this innovation risks being hampered by legal uncertainty, preventing Indonesia from taking advantage of the opportunities offered by the digital era in international transactions.

The potential of Cyber Notary in accelerating cross-border transactions not only brings benefits to the business world, but can also reduce excessive bureaucracy. Manual processes involving document authentication often take weeks, especially in terms of verifying identity and the validity of documents. With Cyber Notary, this process can be completed in minutes, provided the technology used meets high security standards.¹² The United States' experience

⁹ Ministry of Economic Affairs and Communications, "e-Residency: A Global Digital Nation," 2022.

¹⁰ Ikhsan Lubis, "The Role Of Micro Small And Medium Enterprises (Msmes) In The Recovery Of The National Economic," *Syiah Kuala Law Journal* 5, no. 2 (n.d.): 238–51.

¹¹ Edmon Makarim, *Notaris Dan Transaksi Elektronik, Kajian Hukum Tentang Cybernotary Atau Electronic Notary, Cet.3* (Jakarta: PT Rajagrafindo Persada, 2020).

¹² Burhanudin, *Tanggungjawab Notaris, Perlindungan Minuta Akta Dengan Cyber*

with Remote Online Notarization (RON) shows that the use of video conferencing and electronic signatures can significantly speed up the transaction process. If Indonesia adopts similar technology, efficiency in international transactions could increase, facilitating cross-border business relationships more easily and quickly. This innovation not only has the potential to reduce time and costs, but can also strengthen Indonesia's competitiveness in an increasingly connected global market. By taking advantage of technological advances, Indonesia can expand investment opportunities and strengthen its position in the international economy.

The potential of Cyber Notary provides significant opportunities for Indonesia to strengthen its competitiveness in the global market. With a large population and a growing economy, Indonesia needs to adapt to advances in digital technology to keep up. The implementation of Cyber Notary can attract more foreign investment and increase the volume of international trade, which in turn will have a positive impact on the national economy. Thus, this step will not only increase transaction efficiency but also strengthen Indonesia's position in the global arena, making it a key player in the growing digital economy.

Thus, the development of Cyber Notary must be a priority for the government and the private sector, making it a strategic pillar in facing the challenges of the digital era. This step will ensure that Indonesia not only participates, but also plays an active role in the increasingly integrated and competitive global trade ecosystem.

The use of technology such as blockchain also provides an opportunity for Indonesia to overcome the problems of corruption and excessive bureaucracy. By using blockchain, every transaction can be recorded and verified transparently, thus reducing the possibility of abuse of authority.¹³ Blockchain technology can provide greater transparency in the notarial process, while ensuring that every transaction is recorded securely. This is one of the reasons why the potential of Cyber Notary is so great in the context of international transactions.¹⁴

The potential of Cyber Notary in international transactions presents a revolutionary opportunity for the way global businesses operate. Through the application of advanced technologies such as blockchain and electronic signatures, Cyber Notary not only speeds up cross-border transactions but also ensures the legal validity of documents. To realize this potential, supportive regulations and a strong technological infrastructure are crucial. Collaboration between governments, the private sector and the international community is a fundamental step to ensure the effective implementation of Cyber Notary in various jurisdictions.

However, legal challenges, especially differences in regulations between countries, remain a significant barrier. Each country has a different legal framework regarding the recognition of electronic documents and the validity of digital signatures, which require harmonization to facilitate international transactions. If Indonesia is able to overcome these obstacles, the potential of Cyber Notary can be fully utilized, making Indonesia an integral part of a dynamic and profitable global business network.

Notary (Pasaman Barat: CV. Azkia Pustaka, 2022).

¹³ Dodi Setiawan Riatmaja and Sigit Wibawanto, *Digital Entrepreneur : Mengukir Kesuksesan Dalam Era Digita* (Yogyakarta: Andi, 2024).

¹⁴ Alexander Sugiharto and Yusuf Musa, *Blockchain & Cryptocurrency, Dalam Perspektif Hukum Di Indonesia Dan Dunia* (Jakarta: Perkumpulan Kajian Hukum Terdesentralisasi, 2020).

2. Legal Challenges in the Implementation of Cyber Notary

The legal challenges in implementing Cyber Notary mainly arise from differences in regulations in various countries. Each country has a different legal framework regarding the recognition of electronic documents, especially in terms of the validity of digital signatures and proof of the legality of transactions. In Indonesia, the ITE Law provides a legal basis for the use of electronic documents, but international recognition of digitally created documents is still a problem. The Civil Code states that authentic deeds must be made by a notary who is recognized and legally regulated in Indonesia, so in a cross-border context, electronic documents created by Cyber Notary may not be recognized in other countries. This is a major challenge in implementing Cyber Notary for international transactions.¹⁵

The case of an Indonesian company attempting to transact with a Japanese company highlights the significant challenges faced in implementing Cyber Notary. Although the electronic contract was signed with a digital signature in accordance with the ITE Law, Japanese regulations requiring physical documents meant that the contract could not be authenticated, delaying the transaction. This situation illustrates how differences in regulations between countries can hinder the smooth running of international transactions, highlighting the need for a deeper understanding of the legal frameworks applicable in each jurisdiction.¹⁶

On the other hand, countries like the United States, with a more flexible legal system, have adopted Cyber Notary through mechanisms such as Remote Online Notarization (RON). This initiative allows for digital notarization of documents without the need for a notary's physical presence. However, many countries still have regulations that require physical presence, creating challenges for wider adoption.¹⁷ Therefore, harmonization between domestic regulations and international standards is essential to ensure that documents produced through Cyber Notary are globally acceptable. Without this harmonization, cross-border transactions will continue to be hampered by complex and difficult-to-overcome legal obstacles.¹⁸

Another challenge in implementing Cyber Notary is public trust in the validity of digital documents. Although technologies such as digital signatures and blockchain provide a higher level of security than traditional methods, the public still has doubts about the use of electronic documents, especially in transactions involving large amounts or high risks.¹⁹ Public education and increasing digital literacy are essential foundations in building trust in Cyber Notary. Without public support, the adoption of this innovation risks being hampered, especially in countries that are still bound by conventional notary traditions. In Indonesia, the role of the Civil Code (KUHPdata) in regulating authentic deeds is very significant, providing strong legal force to deeds prepared by physical notaries, as regulated in Articles 1868 and 1870. However, concerns about the validity of

¹⁵ Hermin, *Op., Cit.*

¹⁶ Aulia, R. "Harmonization of Law in Electronic Transactions." *Journal of Law and Development*, vol. 52, no. 2, 2021, pp. 215-230.

¹⁷ Smith, J. "Remote Online Notarization: The Future of Notarization in America." *Journal of Digital Law*, vol. 3, no. 1, 2020, pp. 45-59.

¹⁸ Rahardjo, M. "Implementation of Cyber Notary in International Transactions." *Journal of International Law*, vol. 10, no. 3, 2022, pp. 150-165.

¹⁹ Ikhsan Lubis, Taufik Siregar, and Duma Indah Sari Lubis, "The Principle of Tabellionis Officium Fideliter Exercebo Related To Cyber Notary," *Cognizance Journal of Multidisciplinary Studies* 3, no. 6 (2023): 422-33.

electronic documents produced through Cyber Notary have arisen, especially in the context of disputes in court.

To ensure that digital deeds have the same legal force as physical deeds, special regulations are needed to regulate the validity of electronic documents. This step is crucial for the government in supporting the implementation of Cyber Notary, so that the transformation towards the digital era is not only efficient, but also safe and legally recognized. Thus, a clear regulatory approach will strengthen the legitimacy of Cyber Notary and encourage the public to actively participate in the adoption of this technology.

Another legal challenge is the issue of jurisdiction. In international transactions, the parties involved may be in different countries, and each country has different legal rules. For example, in the case of an Indonesian company selling products to a company in the European Union, documents created through Cyber Notary may not be recognized in the European Union unless they meet the eIDAS (Electronic Identification, Authentication, and Trust Services) standard. This highlights the importance of having globally harmonized regulations so that electronic documents can be recognized across jurisdictions. Without this harmonization, the potential of Cyber Notary will not be fully utilized.²⁰

The technical challenges in implementing Cyber Notary require serious attention, especially in terms of security and reliability of digital infrastructure. The success of countries such as Estonia in creating a robust system to support electronic documents underscores the importance of a solid infrastructure. Meanwhile, in many developing countries, including Indonesia, inequality of digital access is a significant barrier.

Therefore, the development of better infrastructure is essential to ensure the accessibility of Cyber Notary not only in urban centers, but also in remote areas. Without adequate technical foundation, the potential of Cyber Notary to accelerate and facilitate international transactions will not be optimally realized, which in turn can hinder progress in cross-border cooperation. Collective efforts in improving digital infrastructure will be key to optimizing the benefits of Cyber Notary in a global context.

As a step forward, investment in security technologies, such as data encryption and trusted document storage systems, should be a top priority. This will provide assurance of the integrity and confidentiality of the documents being processed. In addition, efforts to improve digital literacy in the community play an important role in reducing misunderstanding and increasing trust in the use of Cyber Notary.

Only with a holistic approach that includes strengthening infrastructure, education, and technology, can Cyber Notary overcome the existing challenges, realizing its great potential in supporting efficient, secure, and legally recognized international transactions. Synergy between the public and private sectors, as well as active community participation, will be key in creating an ecosystem that supports the widespread adoption of Cyber Notary.

Security issues are a major challenge in implementing Cyber Notary. Although digital signatures and blockchain technology offer a higher level of protection, the risk of cyber attacks remains. Cases of data hacking on various online platforms in a number of countries have proven that even the most secure systems can be targeted by attacks. Therefore, a comprehensive security strategy is needed, including strengthening digital infrastructure, strict regulations, and

²⁰ *Ibid.*

security awareness among users, to ensure the integrity and validity of documents in the Cyber Notary ecosystem. In facing the challenges of implementing Cyber Notary, the main focus must be on cybersecurity which is the foundation of public trust. The government and service providers must equip the system with additional layers of security such as end-to-end encryption and two-factor authentication, which are essential to prevent document forgery or manipulation. This effort is in line with the new paradigm stipulated in Law No. 1 of 2024 concerning the second amendment to the ITE Law, which prioritizes protection, convenience, and legal certainty in the digital ecosystem, ensuring that transactions can be carried out safely and efficiently.

The existence of strong regulations also strengthens the position of electronic documents as valid evidence, creating a clear legal basis for the use of Cyber Notary. Digital signatures are recognized as legal entities that are equal to physical documents, adding legitimacy and security to cross-border transactions. With this recognition, Cyber Notary is not only an innovation, but also a practical solution that can respond to legal needs in the digital era.

In the evolving global context, regulatory harmonization is crucial to ensure that Cyber Notary can function optimally in various jurisdictions. Synergy between countries in developing security standards and recognition of digital documents will reduce risks and increase the integrity of international transactions. Thus, Cyber Notary has great potential to accelerate the dynamics of global trade and strengthen Indonesia's position in the increasingly competitive digital economy.

Challenges related to international regulation also arise in terms of recognizing digital documents created in other countries. Although the United Nations Convention on the Use of Electronic Communications in International Contracts provides a framework for recognizing electronic documents in international transactions, not all countries have ratified this convention.²¹

Legal uncertainty in cross-border transactions demands international recognition of digital documents as a priority in global trade negotiations. Without this recognition, the potential of Cyber Notary is difficult to realize optimally. In addition, personal data protection is a major concern in the implementation of Cyber Notary. Many countries, including Indonesia, have passed data protection laws to protect individual privacy, but the risk of hacking of electronically stored data remains a threat. Therefore, the Cyber Notary system must comply with applicable data protection regulations in each jurisdiction to ensure user security and trust in digital transactions.

By integrating data protection as a vital element, the development of Cyber Notary will not only ensure the validity of digital documents but also build public trust that is crucial for the widespread adoption of this technology. Differences in security and data protection standards pose a significant challenge in the implementation of Cyber Notary. In some countries, the security standards applied may be far below those in other countries, creating loopholes that could potentially compromise cross-border transactions. For example, when a company in Europe transacts with a partner in Asia that has less secure infrastructure, even though the electronic documents signed by a European notary are secure, the data could be compromised when processed in Asia. Therefore, the urgency of having

²¹ Amelia H Boss and Wolfgang Kilian, *The United Nations Convention on the Use of Electronic Communications in International Contracts* (Netherlands: Kluwer Law International, n.d.).

a consistent global security standard that can be adopted by all countries is very clear, in order to reduce risks and ensure the integrity of international transactions.

The challenges in adopting Cyber Notary lie not only in the technical and regulatory aspects, but also in the low level of public understanding. Many individuals, including legal practitioners, still do not recognize how this technology works and its benefits, which has the potential to hinder public acceptance. Therefore, systematic education and socialization efforts are key to increasing public awareness and trust in Cyber Notary. Without adequate understanding, even though the infrastructure has been built, its use is still threatened with stagnation, especially in developing countries like Indonesia.

Comprehensive education not only helps reduce misunderstandings, but also facilitates the transition to a more modern notary system. By increasing digital literacy, the public will be better prepared to utilize Cyber Notary in everyday transactions, which in turn can accelerate the process of integrating this technology into legal practice. Therefore, the development of educational programs involving various stakeholders, including the government and the private sector, is essential to ensure that the potential of Cyber Notary is optimally realized, making it an efficient and secure tool in cross-border transactions.

A relevant case study can be found in Estonia, where the government actively educates the public about the benefits and how to use Cyber Notary. Estonia has not only succeeded in building a strong digital infrastructure, but also provided intensive training for the public to access Cyber Notary services. This initiative has not only increased public trust in the system but also accelerated the adoption of the technology across various sectors.

In Indonesia, similar steps are needed to ensure that the public understands Cyber Notary and its benefits in facilitating daily transactions. By adopting a comprehensive educational approach, Indonesia can create a more conducive environment for digital innovation, encouraging people to make optimal use of this technology. This effort will contribute to a more inclusive digital economic transformation, supporting growth and competitiveness on the global stage.

The legal challenges in implementing Cyber Notary are a complex web that requires a multidimensional approach. Each country must align domestic regulations with international standards so that Cyber Notary is recognized in various jurisdictions. The strength of digital infrastructure and reliable security systems are crucial to ensure the validity of electronic documents issued. In this context, international cooperation is essential, especially for the harmonization of global regulations and security standards, to support the recognition of documents at the international level.

The success of Cyber Notary depends largely on the adoption of comprehensive and consistent regulations across countries, as well as a commitment to integrating new technologies within existing legal frameworks. Thus, if these challenges can be overcome, Cyber Notary will play a key role in supporting more efficient, secure and legally recognized international transactions.

Overcoming these challenges opens up a huge opportunity for Cyber Notary in driving international transactions. Its potential not only increases efficiency, but also ensures security and legal validity, which are essential for the sustainability of global business. With the synergy between countries, Cyber Notary can serve as a vital instrument in accelerating the dynamics of international trade, ensuring that every digital document produced meets applicable legal requirements.

With a collaborative approach, countries can formulate harmonized regulations and aligned security standards, thereby creating an ecosystem that supports the adoption of this technology. This will strengthen public trust in Cyber Notary and encourage wider participation from various sectors, making it an integral component of the increasingly digital global economy.

Conclusion

This study explores the potential of Cyber Notary in the framework of international transaction settlement, focusing on the legal challenges faced. In the increasingly advanced digital era, Cyber Notary offers a significant solution to speed up and simplify cross-border transactions. Technologies such as digital signatures and blockchain facilitate efficient document verification, reduce the need for physical presence, and increase the security and validity of transactions. Case studies in the United States and Europe, particularly the implementation of Remote Online Notarization (RON) and the eIDAS standard, show that the adoption of these technologies has successfully increased the efficiency and security of international real estate and business transactions.

However, the implementation of Cyber Notary is not free from complex legal challenges. Although the Electronic Information and Transactions (ITE) Law in Indonesia provides a legal basis for electronic documents, international recognition of these documents remains an obstacle. The transactional case between Indonesian and Japanese companies illustrates how differences in regulations can hinder smooth transactions. Therefore, harmonization of international law, development of strong digital infrastructure, and increased public education are needed to build trust in the validity of digital documents.

Recommendation

From the results of this study, several recommendations can be suggested:

1. **Regulation Harmonization:** The government needs to work with international institutions to harmonize regulations related to Cyber Notary, so that the resulting documents can be accepted globally. Aligning domestic regulations with international standards will accelerate legal recognition of electronic documents.
2. **Digital Infrastructure Development:** Investment in secure and reliable digital infrastructure is essential. This includes the implementation of encryption technology and robust data storage systems, to ensure the protection of personal data and document integrity.
3. **Education and Socialization:** Public education programs on the benefits and uses of Cyber Notary should be implemented to increase public trust in digital documents. Training for legal practitioners and end users will facilitate the adoption of this technology.
4. **International Cooperation:** Building partnerships with other countries in implementing Cyber Notary will strengthen Indonesia's position in the global legal system. Discussions on security standards and recognition of digital documents should be a top agenda in international forums.
5. By addressing these challenges, Cyber Notary has the potential to become a vital tool in accelerating more efficient, secure and transparent international transactions, while strengthening Indonesia's position in an increasingly digital global economy.

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