Cyber Notary And Artificial Intelligence: Indonesian Notary Challenges In The Future

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Abstract. In the future, digitalization will be a priority, transitioning paper-based processes to electronic-based systems. Cyber notarization and the use of artificial intelligence in notarial processes are inevitable trends that must be prepared for. While artificial intelligence is widely used in electronic processes and should be adopted by notaries, the immediate implementation of such technology in the Indonesian notary system raises normative challenges. The law stipulates that a notarial deed must be made in the physical presence of a notary, audience, and witnesses, as per Law Number 30 of 2004. However, the elucidation of Law Number 2 of 2014 hints at the possibility of Cyber Notary. Any regulatory changes must be carefully implemented to preserve the essence, spirit of the law, and legal certainty in the Indonesian notarial process. This paper will use a normative juridical method with a statute approach to explore these challenges and opportunities.

Keywords: cyber notary, artificial intelligence, regulation

1 Introduction

Technological developments and needs are one of the triggers for changes in ways of thinking, planning, problem solving and decision making. Physical communication and interaction is starting to be replaced through electronic media. These changes must be seen in a positive perspective to benefit from them. [1]

Cyber Notary and Artificial Intelligence are a consequence of the presence of the Industrial Revolution 4.0 era, also known as "cyber physical system" which is a combination of cyber technology and automation technology. With information technology, the involvement of human power in the process can be reduced so that effectiveness and efficiency can increase. Industrial Revolution 4.0. includes at least five technological components which are the main pillars, namely: Internet of Things, Big Data, Artificial Intelligence, Cloud Computing and Additive Manufacturing. [2]

The Industrial Revolution 4.0 which is currently sweeping the millennial world poses its own challenges to all parties, including the Notary profession. The emergence of electronic services in various sectors urges Notaries to be able to adapt to existing systems. As stipulated in Article 1 point (1) of Law Number 30 of 2004 concerning the Position of Notaries (hereinafter referred to as UUJN), the obligation of a Notary is to produce written evidence, namely authentic deeds and other powers regulated in order, guarantee certainty and protect the law regarding actions. stipulations, agreements and criminal acts made in front of or by officials who have power.[3] Notaries as public officials in carrying out their position in making deeds have more

responsibilities in the era of the Industrial Revolution 4.0. The Notary's liability is limited to the formal aspects of the authentic deed as stipulated by law. Notaries must always carry out their obligations very carefully so that there are no legal defects in the duties they carry out.

Cyber Notary has become a discourse in the notarial world, so there needs to be a legal umbrella that can cover it, so that it can be implemented effectively and efficiently. Openness in the Cyber Notary concept has actually been shown in Article 15 paragraph (3) of Law Number 2 of 2014 concerning Amendments to Law Number 30 of 2004 concerning the Position of Notaries (hereinafter referred to as UUJN-P). The explanation in this article determines that the Notary has the authority to carry out transactions electronically in certifying deeds of waqf pledges and aircraft mortgages. [4]

In carrying out their duties through Cyber Notary, authentic deeds must still be carried out by presenting witnesses. Based on Article 16 paragraph (1) letter m UUJN-P, it is regulated that the notary is obliged to read the deed in front of the audience which is attended by at least 2 witnesses or 4 witnesses in the event that the deed made is a private will. The deed must, at that time, bear the signatures of the presenters, witnesses, and the notary. [5] This article, when compared with Article 15 paragraph (3) of Law Number 2 of 2014 concerning Amendments to Law Number 30 of 2004 concerning the Position of Notary Public, seems contradictory because the notary can make a Notarial Deed electronically (cyber notary). by reading the Deed online and signing electronically and without the presence of witnesses, so this does not fulfill the elements of Article 16 paragraph (1).

If it is linked to the process of making an authentic deed, of course this will make it easier and more practical for the Notary to carry out his duties and authority. However, this concept is still a matter of debate because there is no definite law that regulates the authority of Notaries in terms of Cyber Notary. Currently, the preparation of the deed can be done by video conference or via virtual application (electronic media). Based on Law no. 11 of 2008 concerning Information and Electronic Transactions (hereinafter referred to as the Information and Electronic Transactions Law), the use of online technology provides great benefits for notaries, because the document creation process becomes faster, easier and more efficient. Article 5 paragraph (4) of Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Information and Electronic Transactions also do not recognize Notarial Deeds in the form of electronic documents as valid evidence, which may lead to future legal issues for Notaries, whether in civil, administrative, or even criminal cases. [6]

Even though it still looks narrow, the inclusion of cyber notaries in this legislation is a breath of fresh air for the future development of cyber notaries. The use of Artificial Intelligence systems can be utilized in various business fields, especially in the legal sector which plays a role in the implementation of the legal profession, especially regarding the role of Notary Public.

1.1 Notary concept

Within the Blockchain framework, Ikatan Notaris Indonesia (INI) acts as a Open Record Specialist which capacities as an autonomous specialist who has specialist over the capacity of Blockchain information. As long as the Open Record isn't opened by the specialist holder, the security framework will continuously be dynamic, making it exceptionally troublesome to hack. Open Record Specialist can be prepared with biometric specialist so that it gets to be the most grounded and most comprehensive protection constrain which is exceptionally troublesome to mimic by untrustworthy parties. The utilize of Manufactured Insights within the world of Legal official Affairs can be utilized to help the execution of the Board of Executives in holding the Open Company Common Assembly of Shareholders (GMS) electronically. [1]

Artificial Intelligence can expect issues that will emerge within the usage of an electronic GMS so that the legitimacy of the Notary's deed of GMS Minutes is kept up. Fake Intelligence can be utilized in strategies to obtain, process and get it pictures which can deliver a Visual Insights Framework which is able at that point get data within the frame of a vision that will be shown. In this way, it can be guaranteed that those show at theThe use of Artificial Intelligence can also be used to carry out due diligence and research, such as analyzing legal documents in the form of electronic documents, including identifying deficiencies or weaknesses in these documents. In this way, the Board of Directors will find it easy to audit the correctness of company documents, especially in this case to ensure the correctness of electronic power of attorney for shareholders who are unable to attend the electronic GMS. After the electronic General Meetings of Shareholders, the Notary does not need to come to the GMS place, only through electronic media, the Notary can see, hear and witness the circumstances and/or decisions that occurred at the GMS. [1]

The role of an Artificial Intelligence system in the deed-making process is to serve as a tool that supports a Notary in exercising thorough prudence. [1] It assists in drafting the notarial deed according to the presenter's wishes. AI processes data based on a systematically and specifically organized set of rules concerning the terms and conditions of the intended agreement between the parties. It provides recommendations based on the draft deed, using information stored in a database, and generates outputs in the form of conclusions or even a notarial deed that the Notary can use as a guideline.

The Artificial Intelligence system can be used to analyze the presence of the parties, legal documents and can identify deficiencies or weaknesses in these documents. This is important for Notaries to audit the correctness or legality of documents required in holding a GMS with the cyber notary concept (e-GMS). Nevertheless, Notaries are still required to uphold the principle of prudence as stipulated in Article 16 paragraph (1) letter a of the UUJN, which obligates Notaries to act carefully. They must continue to review, scrutinize, and read deeds prepared with the assistance of Artificial Intelligence, without diminishing the fundamental requirements for deed-making in accordance with prevailing laws.[7]

Artificial Intelligence does not change the notary's authority in making authentic deeds, but only acts as a tool in drafting deeds so that the process can run more quickly. There is no change in the form of the authentic deed, it is still as regulated in law. However, the use of the Artificial Intelligence system is only used as a tool for drafting notarial deeds that are desired by the presenters.

The use of Artificial Intelligence systems has several risks, including:

a. Juridical Risk

The use of Artificial Intelligence in making authentic deeds cannot guarantee the authenticity of the deeds made because the Artificial Intelligence system is only a tool to help draft authentic deeds.

b. Non-juridical risks

There are concerns that technology will replace human functions, as well as the vulnerability of hackers. On the other hand, it is feared that the use of Artificial Intelligence could lead to reduced professional responsibility.

Reflecting on regulations in other countries, Belgium and France have clear regulations regarding the legality of implementing electronic-based authentic deeds. Notaries in Belgium and France have implemented authentic deeds without paper and involving video conferencing at the GMS. The implementation of Cyber Notary in Belgium and France can be an example that Indonesia can also make similar regulations. [8]

The Indonesian government may adopt practices from countries with a Common Law legal system, provided they do not conflict with Indonesia's Civil Law-based legal framework. Additionally, Indonesia could utilize a trusted third party as a Certification Authority (CA). Technological advancement is inevitable, and it must be optimized effectively. The integration of technology into notarial practices offers numerous advantages. By going paperless, issues related to the preparation of minutes and other documentation can be eliminated. Nevertheless, the core principle that must be upheld is that technology should remain a tool under human control, not the other way around.

2 Method

This research used juridical-normative, with a statutory and conceptual approach.[2] Using primary legal materials, especially the Civil Code, Law Number 30 of 2004 concerning the Position of Notaries, Law Number 2 of 2014 concerning Amendments to Law Number 30 of 2004 concerning the Position of Notaries, Law Number 11 2008 concerning Information and Electronic Transactions. Journals, books, and papers are categorized as secondary legal materials, while tertiary legal materials refer to internet sources connected to the discussed issues. The nature of the research is analytical descriptive. The collection of legal materials is carried out by taking an inventory of legal materials that are related to the subject matter in the writing according to the writing requirements which are then sorted systematically. The analysis is carried out by deduction, starting from general legal knowledge obtained from statutory regulations, literature, doctrine, legal principles and jurisprudence used, then implemented on specific problems to get answers.

3 Result and Discussion

3.1 Cyber Notary

The development of Cyber Notary traces back to the use of the term "electronic notary" by the French representative during the Trade Electronics Data Interchange System Legal Workshop in the European Union in 1989. The meaning of electronic notary is [9]:

"Various industry associations and related peak bodies could act as an electronic notary to provide an independent record of electronic transactions between parties, i.e., when company A electronically transmits trade documents to company B, and vice versa." This term then experienced a development in meaning with the emergence of the term :

"Cyber Notary" in the United States by the Information Security Committee of the American Bar Association in 1994 which explained: "The Committee envisaged that this proposed new

legal professional would be similar to that of a notary public but in the case of the cyber notary his/her function would involve electronic documents as opposed to physical documents. [9] This would be an office, which be readily identifiable and recognized in every country throughout the world: i.e., as a legal professional who has been placed in a position of heightened level of trust. They would have the responsibility to undertake certain types of legal transactions than that of the public officer generally referred to in United State as a Notary."[10]

This is what is said to be the forerunner to the emergence of Cyber Notary. This term can also be interpreted as a notary who has skills in the fields of computers and law. Cyber Notary's role is to provide electronic-based document authentication which then based on this authentication can be printed anywhere and at any time.[11] Cyber Notary is a means of providing assurance to parties in different countries that when carrying out transactions in a country they have been carried out with free will and without any coercion when signing electronic-based documents.

The word cyber can be compared with the word "virtual/invisible". Not only in the notarial world, other fields of science also use this term, such as: cyber crime or cyber economy. Simply put, cyber notary can be understood as a notary's method/way of working that utilizes existing technological developments.[12] A different term but with the same meaning is Electronic Notary (E-Notary) or Notary Mayantara. These two terms have more or less the same meaning, namely a change in the conventional way of notary work (face to face) to a modern way of working (without face to face) by utilizing existing technology. However, the idea of cyber notary has a more specific scope to the legal profession which is similar to public notaries in general, with the same scope of work only using different media, namely electronic documents.[13] These two definitions have similarities, namely that the media used to carry out a legal act is carried out using intangible electronic media as a substitute for the conventional paper documents that have been used so far.

Edmon Makarim interprets cyber notary as the role of a notary in various electronic agreements and transactions.[14] Meanwhile, Emma Nurita in her article entitled "Cyber Notary: Initial Understanding of the Concept of Thought" explains that cyber notary is a concept regarding the use of technological developments by Notaries in making authentic deeds and carrying out duties. everyday. For example, in the process of signing deeds electronically and in general meetings of shareholders held via teleconference. The challenge for Notaries today is that Notaries must be able to work not only based on conventional methods but also be able to utilize information technology.[15]

Cyber Notary is intended to make things easier or faster carrying out the duties and authority of a Notary in making authentic deeds regarding all acts or agreements or provisions required by law or what interested parties wish to be stated in authentic deeds. Cybernotary not only digitizes notary duties but also legalizes them. Implementation takes a long time because there is a lot to prepare.[16]

Cyber Notary is also closely related to the implementation of information and electronic transactions. In Law Number 11 of 2008 concerning Electronic Information and Transactions (hereinafter referred to as the ITE Law) It is affirmed that electronic signatures possess valid legal force and have the same legal consequences as handwritten signatures, provided certain conditions are met, as regulated in Article 11 paragraph (1) of the ITE Law and Article 59 paragraph (3) of Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions (hereinafter referred to as PP PSTE). [17] In this case,

there is a role for Notaries in organizing information and electronic transactions in Indonesia. Parties who wish to make an agreement with the help of technology will be helped through Cyber Notary, however, they must still prioritize the preferences of the parties concerned.

3.2 Development of Artificial Intelligence in Indonesia

Artificial Intelligence is a computer or machine technology that has human-like intelligence so that it can be adjusted according to human wishes. Artificial Intelligence works by studying the data received continuously. The more and more complete the data received, the deeper the analysis carried out by Artificial Intelligence so that the better Artificial Intelligence will be in making predictions. Examples of applications of Artificial Intelligence include chatbot applications and facial recognition. The digital era supported by the Internet of Things (IoT) is digitizing data. [18]

IoT and Artificial Intelligence have become common in human life.

So far Indonesian legislation has not regulated Artificial Intelligence in a specific and complete legal regulation.[19] To facilitate the beneficial application of AI in Indonesia, the Agency for the Assessment and Application of Technology (BPPT) has issued the National Artificial Intelligence Strategy for Indonesia 2020–2045. However, the strategy remains at the level of general policy direction and does not yet provide detailed regulations.

The ITE Law and PP PSTE do not regulate Artificial Intelligence provisions explicitly and specifically in their articles. However, if we look closely at its characteristics, Artificial Intelligence can be compared to Electronic Agents as regulated in Article 1 point 8 UUITE. An electronic agent is a device from an electronic system that is created to automatically carry out an action on certain electronic information held by a person. The word "automatic" in the definition of "Electronic Agent" was then used as a bridge to construct AI as an "Electronic Agent." If we use this construction, in fact the regulations governing "Electronic Agents" also apply to Artificial Intelligence.[20]

Electronic System is a series of electronic devices and procedures that function to prepare, collect, process, analyze, store, display, announce, transmit and/or disseminate Electronic Information, while Electronic Information is one or a collection of Electronic Data including but not limited to writing, sound , drawings, maps, plans, photographs, electronic data interchange (EDI), electronic mail (electronic mail), telegram, telex, telecopy or the like, letters, signs, numbers, access codes, symbols or perforations that have been processed which have meaning or can be understood by people who are able to understand it.

The electronic system in both Article 1 number 5 of the ITE Law and Article 1 number 1 of PP PTSE provides an embodiment of the work process of Artificial Intelligence, namely that Artificial Intelligence works as a device, which requires other devices to support the function of Artificial Intelligence in order to collect data to be analyzed. Entering Artificial Intelligence into the scope of electronic agents, because Artificial Intelligence works as a device that imitates human intelligence with the ability to carry out actions based on data and orders given by people automatically.[21] However, Artificial Intelligence which was created to be able to carry out activities in such a way as humans has become a worry for people's lives if there is no legal accountability as Artificial Intelligence can carry out legal actions or the same legal acts as humans can do.

Based on legal regulations in Indonesia, Artificial Intelligence is categorized not as a legal subject but only as a legal object. As per Government Regulation Number 71 of 2019

concerning Implementation of Electronic Systems and Transactions, Artificial Intelligence is a technology operated by electronic system operators. In this way, the electronic system operator becomes the party responsible as a legal subject for the operation of the electronic system, except in the event of force majeure.

The ITE Law regulates that the implementation of AI (Electronic Agents) in Indonesia can only be carried out by individuals, state officials, business entities and the public. Legal responsibility will be borne by the electronic system operator providing AI services. All legal obligations and responsibilities are borne by the provider of the Artificial Intelligence device.

3.3 Cyber Notary in Various Countries

Cyber Notary practices have been implemented in several countries, including those following the Anglo-Saxon legal system and Civil Law countries such as France and the Netherlands. Both France and the Netherlands have amended their laws to incorporate e-authentication. Under the Civil Codes of these countries, the use of electronic signatures for authentic deeds is permitted, provided certain conditions are met for their admissibility as evidence in court, namely proper identification, content integrity, and consent to the content. [22]

Article 1316 of the French Civil Code requires that documents in electronic form be accepted as evidence provided that the person providing them can be properly identified, the document is created and stored in conditions that can truly safeguard its integrity. Article 1317 of the French Civil Code determines that an authentic instrument is an instrument of a public official who is authorized to draw up the instrument at the place where the instrument is written and with the required formalities. Authentic instruments can be created via electronic media created and stored under specified conditions. Currently, more than 70% of the processes carried out by Notaries in France are carried out in paperless form.

Another illustration is obtained from Japan, which has implemented an Electronic Notary System since 2000. The 2011 Japanese Notary Law gives authority to Japanese Notaries to certify Digital Documents. Not only making deeds in the form of deeds and partij deeds using conventional nonelectronic methods, Japanese Notaries are also authorized to make deeds digitally.

In Japan there is a system created for the implementation of Digital Deeds. The deed is not only made using the Electronic Notary System, but must also be stored and managed by the Japan National Notary Association (JNNA), which is an official notary professional organization in Japan which can be aligned with INI. [23]

In the UK, Cyber Notary was attempted in 2002 by appointing the private company Notaries For E Commerce ("NEC") to provide certification authority services. Following a meeting between The Notaries Society and a partner of Adobe CDS (Certified Document Services) in 2006, the project was subsequently developed by utilizing Adobe Acrobat PDF to establish a Certified Document Service specifically for Notaries.

Cyber notary in Belgium is carried out by making paperless deeds and using video conference media. Article 1322 of the Belgian Civil Code determines that any data in electronic form is declared to have fulfilled the requirements for a valid signature, if it has been confirmed by the party determined to maintain the integrity of the contents of the document. The Belgian State Notary Act has also considered amendments to improve the Cyber Notary law under the control

of the National Council of Belgian State Notaries. In 2017 the Belgian Law Potpourri V was passed and stipulates firmly and specifically that the implementation of notarial deeds can be carried out remotely or via video conference.[24]

3.4 Ushering Cyber Notary and the Use of Artificial Intelligence for Indonesian Notaries

Cyber Notary in Indonesia still has not found an established position to implement even though it is technologically possible. It is possible to carry out the role of an online Notary, but legally this does not seem to be possible.

A notary is a public official who has the authority to make authentic deeds. This means that an authentic deed can only be made by and before a Notary. Based on this provision, the presenter and the Notary must meet physically. In more detail, Article 16 paragraph (1) letter m of the UUJN-P mandates that a Notary must read the deed aloud before the parties involved, in the presence of at least two witnesses, or four special witnesses in the case of drafting a private Will Deed, and it must then be signed immediately by the presenter, the witnesses, and the Notary. [25]

These regulations refer to parts of the authenticity of a deed as specified in Article 1868 of the Civil Code, namely:

"An authentic deed is a deed made in a form determined by law by or before a public official authorized to do so in the place where the deed was made."

Thus, The evidentiary strength of a Notary's deed is rooted in the unique status of its creator, namely the Notary, who is directly appointed by law as a public official vested with the authority to draw up deeds.

Article 16 paragraph (1) letter m of Law Number 2 of 2014 concerning the Position of Notary Public can be categorized as not a responsive norm because it does not provide opportunities to adapt to current developments. In the Explanation section it is explained "The Notary must be physically present and sign the Deed in the presence of the presenter and witnesses."

In this way, law becomes law as process, law in the making.

Nevertheless, based on the Elucidation of Article 15 paragraph (3) of the UUJNP, Notaries are granted the opportunity to engage in Cyber Notary activities through additional authorities provided by statutory regulations. These include the authority to certify electronically conducted transactions (Cyber Notary), draft deeds, record endowment pledges, and register aircraft mortgages. Certification not only refers to providing information or validation, but also involves a third-party procedure that offers written assurance that certain processes, products, or services comply with agreed standards and requirements. The authority of Notaries to conduct electronic certification aims to ensure order, certainty, and legal protection for the public in line with technological advancements toward a paperless environment. Under such circumstances, the presence of valid and authentic evidence from authorized officials regarding various legal acts, determinations, agreements, and legal events becomes essential. [26]

The origin of the Cyber Notary provisions in the Elucidation of Article 15 paragraph (3) UUJN-P apparently has not yet received a further mechanism. Even though nowadays technologically it is common for transactions to be carried out electronically, regarding the making of deeds there is no certainty regarding the presence of the presenter, whether it is possible to deal virtually or whether it still has to be done physically. Regarding the legality of an electronic

deed, it can still have legal force even before a court, such as digital signatures, digitally ensured documents, and video conferences in making deeds between notaries and presenters. In implementing Cyber Notary, of course this provision will not be ignored, it must still be implemented by presenting witnesses.[27]

In order to implement Cyber Notary in the future in Indonesia, it is necessary to emphasize in future changes to UUJN-P that apart from conventional methods, ratification of authentic deeds made by Notaries can also be done electronically. The word "in presence" in Article 1868 of the Civil Code in the Cyber Notary concept using teleconference media can be carried out in a manner consistent with the conventional (offline) process, namely that the presenters remain present in front of the Notary, then the Notary reads the deed to each presenter, only only the media used electronically. The signing process can be carried out electronically.

The thoughts of the Ubaya Notarial Masters Student Team, in the paper which won 2nd place in the Gadjah Mada National Notary Competition 2023, there are two most basic issues in the process of making a Notarial Deed using the Cyber Notary concept, namely ensuring the identity of the parties (identification), and ensuring security the authenticity of the Cyber Notary carried out (authenticity). This can be overcome through Blockchain system technology.[28]

Cappiello and Carullo explained that blockchain is a system where people share various things through a system that consists of various blocks and contains data and transactions that have been verified. The blocks are then linked together using several chains into the blockchain system and are equipped with secret public and private keys.

Notarial deeds created and stored using the Blockchain system will still have perfect evidentiary power like Authentic Deeds. The character of Blockchain is very useful to help Notaries. Validation and immutable can prove the strength of external evidential value. Validation characters, with Peer-to-peer Network, and Transparency can show the process from the beginning of the deed being made until the Notarial Deed is authenticated, which proves the Strength of Formal Proof of Value. The final proof regarding the Strength of Material Proof can be protected with Secure and Smart Contracts characters. These characters will later become the basis for the new evidentiary power for Authentic Deeds made with the Cyber.

4 Conclusion

The use of cyber notaries and the use of AI are inevitable considering the need for convenience and practicality in the business world and a world that wants to be paperless. The enactment of Cyber Notary is a lesson for Indonesia that the same thing can also be implemented in Indonesia in the form of strict and complete special regulations. It should not be ignored, AI technology is like a double-edged sword, on the one hand it helps the work of Notaries, but on the other hand it can also pose a threat to Cyber Notary. The use of the Blockchain system in Cyber Notary can be an alternative by appointing the Indonesian Notary Association as the Public Ledger Authority. For this reason, the choice of special systems and regulations to cover the use of AI and cyber notaries in Indonesia needs to be hastened.

References

[1] H. Adjie, "Konsep Notaris Mayantara Menghadapi Tantangan Persaingan Global," J. Huk. Respublica, vol. 16, no. 2, pp. 201–218, 2018, doi: 10.31849/respublica.v16i2.1436.

[2] M. F. Alwajdi and K. Kunci, "Kemudahan Berusaha Di Indonesia," J. Media Pembin. Huk. Nasiona, vol. 9, pp. 257–274, 2020.

[3] R. Ayunda, "Perlindungan Data Nasabah Terkait Pemanfaatan Artificial Intelligence dalam Aktifitas Perbankan di Indonesia," *J. Komun. Huk.*, vol. 7, no. 2, pp. 663–677, 2021, [Online]. Available: https://ejournal.undiksha.ac.id/index.php/jkh

[4] S. Bahri, A. Yahanan, and A. Trisaka, "Kewenangan Notaris Dalam Mensertifikasi Transaksi Elektronik Dalam Rangka Cyber Notary," *Repertorium*, vol. 8, no. 2, pp. 142–157, 2019, doi: 10.28946/rpt.v.

[5] M. T. A. R. Haris and T. Tantimin, "Analisis Pertanggungjawaban Hukum Pidana Terhadap Pemanfaatan Artificial Intelligence Di Indonesia," *J. Komun. Huk.*, vol. 8, no. 1, pp. 307–316, 2022, doi: 10.23887/jkh.v8i1.44408.

[6] H. I. Bhagaskara, S. N. Puteri, Y. Emillio, and L. Tobing, "Tinjauan Hukum Peran Artificial Intelligence (AI) sebagai Pencegah Terjadinya Pelanggaran Kode Etik oleh Auditor Publik," pp. 1–17.
[7] Loeff and Loyens, "Belgian Notaries and Digitalisation: A (New) Love Affair," 2019. https://www.loyensloeff.com/ch/en/news/belgian-notaries-anddigitalisation-a-new-love-affairn15833/

[8] Makarim and Edmon, *Transaksi Elektronik, Kajian Hukum Tentang Cyber Notary atau Electronic Notary*. Depok: Rajawali Pers, 2020.

[9] I. Lubis, T. Murwadji, Sunarmi, and D. Sukarja, "Cyber Notary as A Mean of Indonesian Economic Law Development," *Sriwij. Law Rev.*, vol. 7, no. 1, pp. 62–72, 2023, doi: 10.28946/slrev.Vol7.Iss1.1972.pp62-72.

[10] E. Makarim, "KAJIAN HUKUM TERHADAP KEMUNGKINAN CYBERNOTARYDI INDONESIA".

[11] C. C. Putri and A. R. Budiono, "Konseptualisasi dan Peluang Cyber Notary dalam Hukum," *J. Ilm. Pendidik. Pancasila dan Kewarganegaraan*, vol. 4, no. 1, p. 29, 2019, doi: 10.17977/um019v4i1p29-36.

[12] J. Restu Pamungkas and A. Efritadewi, "Analisis Kepastian Hukum Akta Terhadap Kewenangan Notaris Dalam Pelayanan Berbasis Elektronik (Cyber Notary)," *Student Online J. Umr. - Ilmu Sos. dan Ilmu Polit.*, vol. 2, no. 1, pp. 633–645, 2021, [Online]. Available: https://soj.umrah.ac.id/index.php/SOJFISIP/article/view/943

[13] K. D. Darmawan, N. S. Dananjaya, and H. U. Udayana, "Keabsahan Transaksi E-Commerce Dalam Pembuatan Akta Perspektif Cyber Notary Dengan Menggunakan Digital Signature Abstrak," vol. 7, no. 02, pp. 229–243, 2022.

[14] T. S. Ramli, A. M. Ramli, R. F. Mayana, E. Ramadayanti, and R. Fauzi, "Artificial intelligence as object of intellectual property in Indonesian law," *J. World Intellect. Prop.*, vol. 26, no. 2, pp. 142–154, 2023, doi: 10.1111/jwip.12264.

[15] F. Rizqi and S. N. Intan Sari D., "Implementasi Cyber Notary Di Indonesia Ditinjau Dalam Upaya Reformasi Birokrasi Era 4.0," *J. Huk. dan Kenotariatan*, vol. 5, no. 1, p. 37, 2021, doi: 10.33474/hukeno.v5i1.9391.

[16] G. K. Sasmita, S. Hermawan, and M. H. Asrori S, "Reinterpretating the Meaning of 'The Appearers' Article 16 (1) M Law Number 2 Year 2014 Concerning Amendment to Law Number 30 Year 2004 Concerning Notary Position in Responsive Regulation Perspective," *Int. J. Multicult. Multireligious Underst.*, vol. 3, no. 2, pp. 580–595, 2022.

[17] W. Budiharto and Suhartono, *Derwin Artificial intelligence Konsep dan Penerapannya*. Yogyakarta, 2016.

[18] E. Nurita and R. Ayu, *Cyber Notary: Pemahaman Awal Dalam Konsep Pemikiran*. Bandung, 2012.

[19] Simanjuntak, Y. Nursari, Adlansyah, and Burhan, Penggunaan Artificial Intelligence pada Rapat Umum Pemegang Saham Perusahaan Terbuka secara Elektronik dan Tantangannya bagi Notaris", bookchapter in "Narasi Dinamika Hukum Kenotariatan Indonesia. Malang: Intelegensia Media, 2023.

[20] Sjaifurrachman, Adjie, and Habib, *Aspek Pertanggungjawaban Notaris Dalam Pembuatan Akta*. Bandung: Mandar Maju, 2011.

[21] Purnamasari and I. Devita, "Antisipasi Terjadinya Disrupsi Terhadap Jabatan Dan Kewenangan Notaris," 2019. https://www.hukumonline.com/berita/a/antisipasi-terjadinyadisrupsi-terhadap-jabatan-dan-kewenangannotarislt5dcba9a949a8c?page=all

[22] Rizkinaswara and Leski, "Revolusi Industri 4.0", Kanal Kementrian Komunikasi dan Informasi Republik Indonesia." https://aptika.kominfo.go.id/2020/01/revolusi-industri-4-0/

[23] Rosalina, M. Puteri, Pangarso, S. and Krisna, and Albertus, "Indonesia Belum Punya Regulasi soal AI," 2023. https://www.kompas.id/baca/investigasi/2023/06/27/vakumregulasi-kecerdasan-artifisial-di-indonesia

[24] Z. Rossalina, M. Bakri, and I. Andrijani, "KEABSAHAN AKTA NOTARIS YANG MENGGUNAKAN CYBER NOTARY SEBAGAI AKTA OTENTIK," *Sport. Cult.*, vol. 15, no. 1, pp. 72–86, 2024, doi: 10.25130/sc.24.1.6.

[25] Sanjay and Nabihasan, "Blockchain technology and its application in libraries," *Libr. Her.*, vol. 58, no. 4, pp. 118–125, 2020, doi: 10.5958/0976-2469.2020.00030.10.

[26] R. Sidharta and P. E. T. Dewi, "the Role of Cyber Notary in the Field of Digital International Trade in Indonesia," *NOTARIIL J. Kenotariatan*, vol. 8, no. 1, pp. 1–7, 2023, doi: 10.22225/jn.8.1.2023.1-7.

[27] H. L. T. Donald, "The Importance of Using Electronic Deeds to Facilitate The Service and Storage of Notary Archives," *J. Penelit. Huk. Jure*, vol. 22, no. 4, p. 483, 2022, doi: 10.30641/dejure.2022.v22.483-498.

[28] D. V. Mirna Talita and E. Ratna, "Peran Notaris Sebagai Pejabat Umum Dalam Era Revolusi Industri 4.0," *Notarius*, vol. 16, no. 2, pp. 870–881, 2023, doi: 10.14710/nts.v16i2.32783.