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Robot Lawyer in Indonesian Criminal Justice System: Problems and Challenges for Future Law Enforcement

Zico Junius Fernando[1]✉ iD, Kiki Kristanto[2] iD, Ariesta Wibisono Anditya[3] iD, Sawitri Yuli Hartati[4], Agri Baskara[5]

[1] Faculty of Law, Universitas Bengkulu, Indonesia
[2] Faculty of Law, University of Palangka Raya, Indonesia
[3] Faculty of Law, University of Malaya, Malaysia
[4] Faculty of Law, University of Muhammadiyah Jakarta, Indonesia
[5] School of Law, University of Leeds, The United Kingdom

✉ Corresponding email: zjfernando@unib.ac.id

Abstract *The rapid advancement of artificial intelligence (AI) introduces unprecedented opportunities and complexities, particularly in its intersection with the legal domain. This study envisions a future where autonomous decision-making robot lawyers play a pivotal role in legal proceedings, providing counsel and representation. Examining the implications of AI's scientific progress on Indonesian law, normative legal research methods were employed, encompassing statutory, conceptual, comparative, and futuristic analyses. Qualitative scrutiny and content*

analysis were applied to collected materials. The study reveals the potential of robot lawyers to enhance efficiency in Indonesia's criminal justice system, aiding in evidence gathering, case analysis, and indictment drafting. This technological integration promises to alleviate the workload of legal professionals and expedite case resolutions, thereby improving public access to legal services. However, challenges loom, including ethical concerns, data security, and professional qualifications. To address these challenges, the study advocates for collaborative efforts among the government, industry, and academia. This cooperation is crucial for formulating regulations and establishing supportive infrastructure for the seamless integration of robot lawyers. Additionally, enhancing digital literacy and public understanding of AI in the legal sphere is emphasized as a vital step toward maximizing the benefits of this technology. In essence, the study underscores the transformative potential of AI in reshaping legal processes, emphasizing the need for a concerted, informed effort to navigate the challenges and optimize the benefits of this evolving technological landscape.

1. Introduction

In an increasingly digital and connected world, technology has become integral to various aspects of life.[1] Artificial intelligence is a field of study that focuses on developing machines and computer systems that can perform tasks that normally require human intelligence.[2] The concept of AI first appeared in 1956 and has undergone significant developments since then. Advances in data

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[1] Rama Halim Nur Azmi, "Indonesian Cyber Law Formulation in The Development Of National Laws In 4.0 Era," *Lex Scientia Law Review* 4, no. 1 (2020): 49–62, https://doi.org/10.15294/lesrev.v4i1.38109.

[2] Ivan Fauzan, "Artificial Intelligence (AI) Pada Proses Pengawasan Dan Pengendalian Kepegawaian – Sebuah Eksplorasi Konsep Setelah Masa Pandemi Berakhir," *Civil Service* 14, no. 1 (2020): 31–42, https://doi.org/https://doi.org/10.18860/ua.v9i2.6218.

processing, computational capacity, and algorithm development primarily drive the development of AI.[3] Machine learning methods, such as supervised and unsupervised learning, have enabled computers to learn complex patterns from data and make predictions or decisions based on that information.[4] AI has been used in various fields, including facial recognition, speech recognition, autonomous vehicles, medicine, data analysis, etc. The development of AI continues, with research and innovation continuing to expand the ability of machines to solve increasingly complex tasks.[5]

The following are some examples of the development of AI (artificial intelligence) in the world until 2023, for example, AI has made significant progress in the health sector. A specific example is the use of AI in drug research and development. Apart from that, AI is also used in diagnostic systems. Google DeepMind, for example, has developed an algorithm that can help detect eye conditions such as diabetic retinopathy and age-related macular degeneration. Autonomous vehicles such as Tesla and Waymo (owned by Alphabet, Google's) are two companies at the forefront of developing autonomous vehicles. These vehicles use AI to interpret sensor data and decide how and when to move. Boston Dynamics, known for its humanoid robots and robot dogs, has made great strides in AI-powered robotics. Their robots can walk, run, jump, and even do

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[3]　Tom Bylander, "Tractability and Artificial Intelligence," *Journal of Experimental & Theoretical Artificial Intelligence* 3, no. 3 (2007): 171–78, https://doi.org/10.1080/09528139108915289.

[4]　Ted Goertzel, "The Path to More General Artificial Intelligence," *Journal of Experimental & Theoretical Artificial Intelligence* 26, no. 3 (3 Juli 2014): 343–54, https://doi.org/10.1080/0952813X.2014.895106.

[5]　Vincent C. Müller, "Risks of General Artificial Intelligence," *Journal of Experimental and Theoretical Artificial Intelligence* (Taylor & Francis, 2014), https://doi.org/10.1080/0952813X.2014.895110.

backflips. Apple Siri, Amazon Alexa, and Google Assistant are prime examples of AI developments in the virtual assistant field. They use AI to understand voice commands, answer questions and perform various user tasks. Companies like Facebook and Amazon use AI for data analysis and personalization. In e-commerce, AI recommends products based on users' shopping behavior. On social media, AI filters out inappropriate content and moderate comments. This development shows that AI has the potential to change many aspects of human life, from how humans work and learn to how humans interact with the world around them. Even so, it is also important to look at the challenges and ethical issues that arise with AI development, such as privacy, bias, and job impact.[6]

One of the most obvious manifestations of AI, which will be discussed in this study, is the embodiment of AI in the legal field, namely "robot lawyers." This concept refers to an AI-based system capable of performing various legal tasks, from legal research to writing legal texts and providing basic legal advice. Until now, in 2023, several countries have begun to accept the use of AI (artificial intelligence) in their legal proceedings. However, for now, the use of AI is usually limited to certain tasks and only partially replaces the role of humans in the legal system.

Robot lawyers, or LegalTech, is a term used to describe the technology, including AI, in the legal industry to provide legal services or assist legal professionals in their work. These technologies can be used for various purposes, including legal practice management, legal research, writing and analysis of legal documents,

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[6] Murat Aydede dan Guven Guzeldere, "Consciousness, Intentionality and Intelligence: Some Foundational Issues for Artificial Intelligence," *Journal of Experimental & Theoretical Artificial Intelligence* 12, no. 3 (2010): 263–77, https://doi.org/10.1080/09528130050111437.

online dispute resolution, and others.[7] Robot lawyer aims to assist in legal research, case management, contract analysis, and legal decision-making. The application of robot lawyers has grown rapidly in several countries. Several technology companies and law firms have developed software and intelligent algorithms to perform legal tasks quickly and efficiently. Robot lawyers can analyze contracts, conduct legal research, compile legal documents, and advise clients. Robot lawyers can also assist in dispute resolution using alternative methods (Alternative Dispute Resolution or ADR) online. In this case, AI technology is used to facilitate negotiations between the parties involved in the dispute,

However, it is important to remember that while robot lawyers can provide valuable assistance in some aspects of the law, they can only partially replace the role and expertise of a human lawyer. Legal decisions and ethical considerations still require human judgment and wisdom. With the continued development of AI technology, robot lawyers will likely continue to increase their role in the legal industry. However, it is still important for legal professionals to understand this technology and ensure its use complies with applicable legal rules and ethics.

This study aims to understand and analyze the potential of "robot lawyers" as a model for developing artificial intelligence in the Transformation of the criminal law system in Indonesia. The increasing accessibility of technology and the digitization of processes in many sectors has driven a paradigm shift in how we view and apply law. In criminal law, artificial intelligence (AI) offers an

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[7] Michael Stockdale dan Rebecca Mitchell, "Legal Advice Privilege and Artificial Legal Intelligence: Can Robots Give Privileged Legal Advice?," *The International Journal of Evidence & Proof* 23, no. 4 (2019): 422–39, https://doi.org/10.1177/1365712719862296.

opportunity to change how we access, understand, and apply the law, with the potential to make the criminal justice system more efficient, transparent, and fair.

2. Method

This study examines robot lawyer development as part of Indonesia's legal Transformation. The research method used is normative legal research or library law research.[8] Researchers reviewed library materials or secondary data, including primary legal materials, secondary legal materials, and tertiary legal materials.[9] In order to find answers and solutions to existing problems, researchers use a statutory approach to analyze legal aspects related to robot lawyers. A comparative approach is used to compare the development of robot lawyers. A conceptual approach is used to develop concepts and theories related to robot lawyers. Meanwhile, a futuristic approach is used to consider robot lawyers' development and future implications in the Indonesian legal system.[10] This research has a descriptive-prescriptive nature[11], in which the researcher describes the development of robot lawyers and provides recommendations or prescriptions regarding the use and

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[8] I Gusti Ayu Apsari Hadi, "Perbuatan Melawan Hukum Dalam Pertanggungjawaban Dokter Terhadap Tindakan Malpraktik Medis," *Jurnal Yuridis* 5, no. 1 (2018): 99, https://doi.org/http://dx.doi.org/10.35586/.v5i1.318.

[9] Soerjono Soekanto and Sri Mamudji, *Penelitian Hukum Normatif Suatu Tinjauan Singkat* (Jakarta: Raja Grafindo Persada, 2001), 13-14.

[10] Panca Sarjana Putra et al., "Judicial Transformation: Integration of AI Judges in Innovating Indonesia's Criminal Justice System," *Kosmik Hukum* 23, no. 3 (2023): 233–47, https://doi.org/10.30595/kosmikhukum.v23i3.18711.

[11] Agusalim et al, "Green Victimology: Sebuah Konsep Perlindungan Korban dan Penegakan Hukum Lingkungan di Indonesia," *Bina Hukum Lingkungan* 7, no. 1 (Oktober 2022): 60–79, https://doi.org/10.24970/BHL.V7I1.302.

development of this technology in the context of Indonesian law.[12] A literature review was conducted to collect data and information relevant to this research.[13] Researchers search for and review laws, books, government documents, and academic articles related to robot lawyers. The collected data were analyzed using the content analysis method, in which the researcher analyzed and interpreted the contents of the collected library materials.[14]

3. Result & Discussion

A. The development of artificial intelligence technology *Robot Lawyer*

Legal tech, short for legal technology, refers to using technology and software to provide legal services or assist legal professionals. These technologies can be used for various purposes, including legal practice management, legal research, writing and analysis of legal documents, online dispute resolution, and others. Here are some examples from legal tech:

a. Legal practice management

Many platforms and software assist lawyers and law firms with case management, scheduling, billing, and other administrative tasks. Examples are Clio, MyCase, and PracticePanther.

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[12] Zico Junius Fernando et al, "Preventing Bribery in the Private Sector Through Legal Reform Based on Pancasila," *Cogent Social Sciences* 8, no. 1 (2022): 1–14, https://doi.org/10.1080/23311886.2022.2138906.

[13] Anis Widyawati et al., "Urgency of the Legal Structure Reformation for Law in Execution of Criminal Sanctions," *Lex Scientia Law Review* 6, no. 2 (2022): 327–58, https://doi.org/10.15294/lesrev.v6i2.58131.

[14] Zico Junius Fernando et al, "The Freedom of Expression in Indonesia," *Cogent Social Sciences* 8, no. 1 (2022): 1–11, https://doi.org/10.1080/23311886.2022.2103944.

b. Legal research

AI technology is used to assist in legal research, which can be time-consuming. Software like ROSS and CaseText use AI to help lawyers find relevant precedents and cases.

c. Document analysis

There is also software that uses AI to assist in the writing and analysis of legal documents. An example is the Robot Lawyer, which can analyze contracts and pinpoint potential problems.

d. Online dispute resolution

Some platforms use technology to assist in online dispute resolution (ODR). Examples are Modria and Court Innovations.[15]

e. Legal analytics

Companies like Lex Machina and Premonition use big data and machine learning to analyze legal data and help lawyers predict the outcome of cases.

One that will be discussed is the "robot lawyer," an AI-based system that can perform various legal tasks. The following is a more detailed explanation of the development of "robot lawyer" technology. Robot lawyers are not robots in the physical sense but AI-based software designed to perform various legal tasks. These duties may include legal research, drafting contracts and other legal documents, and providing basic legal advice to clients. Some "robot lawyers" can also process and analyze large amounts of legal data to identify patterns and trends that can aid in the decision-making process.

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[15] Ben Barton, "Modria and the Future of Dispute Resolution," https://news.bloomberglaw.com/, 2015, https://news.bloomberglaw.com/business-and-practice/modria-and-the-future-of-dispute-resolution.

Advances in AI and machine learning technologies have fueled the development of robot lawyers. With the ability to learn from data and optimize their performance over time, robot lawyers can become more accurate and efficient in carrying out tasks. Although the term has not existed in a long legal history, its development and adoption have been quite rapid in recent decades.

Here is a brief history of "robot lawyers." In the 1980s and 1990s, during this period, there were some early attempts to automate some aspects of legal practice using existing technology. For example, databases and document management systems are used to store and access legal information. Even though they have not used AI yet, these initiatives were the precursor to the robot lawyer as we know it today. The 2000s saw the emergence of AI and machine learning. At the start of the 21st century, advances in AI and machine learning are opening up new legal automation opportunities. AI-based software is being developed for legal research, document management, and even contract drafting. In the 2010s, robot lawyers appeared; in this period, the term " One early example was ROSS, a "robot lawyer" created by IBM with Watson's AI technology, which can conduct legal research and answer legal questions in natural language. ROSS Intelligence is a legal technology company based in the United States and Canada that developed and released its first virtual legal assistant, ROSS, in 2015. ROSS is an early example of what is known as a "robot lawyer" and is a milestone in using artificial intelligence (AI) in legal practice.[16]

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[16] Tara McKeown et al., "AI in Law Practices," in *2020 13th International Conference on Developments in eSystems Engineering (DeSE)*, 2020, 27–32, https://doi.org/10.1109/DeSE51703.2020.9450780.

questions in natural language. ROSS Intelligence is a legal technology company based in the United States and Canada that developed and released its first virtual legal assistant, ROSS, in 2015.[17] ROSS is an early example of what is known as a "robot lawyer" and is a milestone in using artificial intelligence (AI) in legal practice.

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[17] Jan L. Jacobowitz dan Justin Ortiz, "Happy Birthday Siri! Dialing in Legal Ethics for Artificial Intelligence, Smartphones, and Real Time Lawyers," *Texas A&M Journal of Property Law* 4, no. 5 (2018): 407–42, https://doi.org/10.37419/jpl.v4.i5.1.

[18] Futurism, "AI Lawyer 'Ross' Has Been Hired By Its First Official Law Firm," https://futurism.com/, 2023, https://futurism.com/artificially-intelligent-lawyer-ross-hired-first-official-law-firm.

[19] Adam Rizal, "IBM: Perusahaan Wajib Membuat Teknologi AI yang Bertanggung Jawab," https://infokomputer.grid.id/, 2023, https://infokomputer.grid.id/read/123798761/ibm-perusahaan-wajib-membuat-teknologi-ai-yang-bertanggung-jawab.

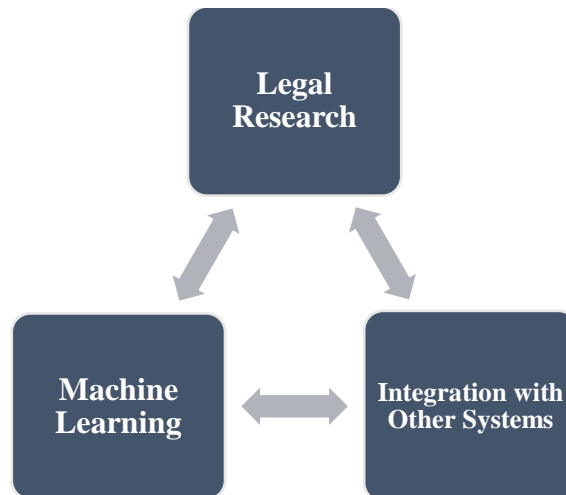legal professionals with legal research and other assignments. Here are some of the key features and capabilities of ROSS:[20]

FIGURE 1. Key features and capabilities of ROSS

a. Legal research

The ROSS system is designed to help lawyers conduct legal research more efficiently using artificial intelligence technology. Users can ask ROSS questions in natural language, and the system will search for relevant information from legal databases. Through the application of Natural Language Processing (NLP), ROSS is able to understand the context and nuances of complex legal questions. This allows ROSS to not only search for keywords but also interpret the intent of the question and find relevant precedents, laws, and cases. Using advanced search algorithms and machine learning, the system sorts search results based on relevance, provides case summaries, and performs citation

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[20] Ross Intelligence, "Features - ROSS Intelligence," https://www.rossintelligence.com/features, 2023, https://www.rossintelligence.com/features.

analysis to determine the precedential value of a case. As such, ROSS helps ensure fairness and certainty in law enforcement by providing quick and accurate access to important legal information, supporting informed decision-making, and ensuring consistency in legal practice. Moreover, by regularly updating the database, ROSS guarantees that users get the most up-to-date information, which is crucial in an ever-evolving law. Nonetheless, to ensure fairness and accountability, it is crucial for systems such as ROSS to be monitored in terms of bias, process transparency, and data privacy.[21]

b. Machine learning

The machine learning technology used by ROSS allows the system to learn from previous interactions and improve its performance over time. This process works through a continuous feedback cycle: each time a user interacts with ROSS, data from that interaction—including the questions asked, documents retrieved, and the usefulness of the results provided—is collected. The system then uses this data to train machine learning models, refining its search algorithms to become more accurate and responsive to complex legal questions. The more data processed, the better the system gets at understanding the nuances of legal language and user preferences. In the context of law enforcement, this improvement means that lawyers can find relevant precedents and legal interpretations more quickly, helping them to craft strong arguments and ensure that enforcement is fair and consistent. Artificial intelligence such as ROSS can also reduce the possibility of human error and knowledge gaps that can lead to inconsistencies in legal practice. However, it is imperative that

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[21] Above the Law, "ROSS Intelligence Offers A New Take On Legal Research," https://abovethelaw.com, 2019, https://abovethelaw.com/2019/05/ross-intelligence-offers-a-new-take-on-legal-research/.

these systems are continuously monitored to ensure that they do not reinforce existing biases or disregard data privacy during their learning process.[22]

c. Integration with other systems

ROSS is designed to integrate with various case management systems and legal databases, allowing it to be implemented easily in a variety of legal settings. This integration means that ROSS can synchronize and access information from various existing legal sources, enriching its knowledge base and providing comprehensive research results.[23] The integration process usually involves the use of APIs (application programming interfaces) or other data exchange protocols that allow ROSS to "communicate" with other legal systems.[24] In this way, when a lawyer or legal researcher enters a request for information into ROSS, the system searches not only within its own internal database but also within case records, judgment archives, and legal literature available through other connected systems. This ensures that users get the most relevant and up-to-date information, which is critical to maintaining fairness and certainty in law enforcement. Such integration also supports the efficiency of the legal process by

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[22] Daniel Faggella, "AI in Law and Legal Practice – A Comprehensive View of 35 Current Applications," Emerj Artificial Intelligence Research, 2021, https://emerj.com/ai-sector-overviews/ai-in-law-legal-practice-current-applications/.

[23] Artificial Lawyer, "Meet the New + Improved ROSS Intelligence Research Platform, (+ Commentary)," www.artificiallawyer.com, 2018, https://www.artificiallawyer.com/2018/07/09/meet-the-all-new-improved-ross-intelligence-research-platform/.

[24] Tao Liu et al., "Lawyer Information Integration and Recommendation by Multi-Source Information Validation," in *2011 International Conference on Machine Learning and Cybernetics*, vol. 4, 2011, 1909–13, https://doi.org/10.1109/ICMLC.2011.6016956.

speeding up legal research and minimizing redundancies. To ensure fairness and certainty in law enforcement, ROSS must follow strict data security protocols, maintain transparency in its search algorithms, and consistently check for bias in its results so that lawyers can rely on the information provided to build their cases with confidence.

In addition, services such as DoNotPay have emerged, billed as "the world's first chatbot lawyer."[25] DoNotPay was originally designed to help users appeal parking fines in London and New York and has since grown to include various other legal services. DoNotPay is a chatbot-based application created by Joshua Browder, a young British programmer and entrepreneur.[26] Since its launch in 2015, DoNotPay has grown rapidly. It now offers various legal services to address various issues, from helping airline passengers get compensation for delayed or canceled flights to helping users get refunds for unsatisfactory goods or services.[27] One of the main features of DoNotPay is the ability to interact with users in natural language. Users can describe their problems in their own words, and the chatbot will understand the question or problem and provide relevant advice or assistance. DoNotPay also can fill out the necessary legal forms or documents based on the information provided by the user. Based on data, in 2020, DoNotPay managed to cancel around

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[25] Wasis Wibowo, "Pertama Kali Robot Pengacara Digunakan dalam Persidangan, Dikendalikan Lewat Aplikasi Ponsel," tekno.sindonews.com, 2023, https://tekno.sindonews.com/read/992483/123/pertama-kali-robot-pengacara-digunakan-dalam-persidangan-dikendalikan-lewat-aplikasi-ponsel-1673391663.

[26] Megan Cerullo, "AI-Powered 'Robot' Lawyer Won't Argue In Court After Jail Threats," https://www.cbsnews.com, 2023, https://www.cbsnews.com/news/robot-lawyer-wont-argue-court-jail-threats-do-not-pay/.

[27] Padraig Belton, "Would you let a robot lawyer defend you? - BBC News," https://www.bbc.com, 2021, https://www.bbc.com/news/business-58158820.

190,000 fines.[28]This means that the AI system used by DoNotPay has successfully analyzed and identified valid legal arguments to appeal against those ticket amounts and has convinced the relevant authorities to cancel them. This number shows several things. First, it shows the potential of AI in simplifying and automating certain aspects of the legal system, such as handling parking tickets. Second, it suggests that many issued parking tickets may be invalid or subject to cancellation if tested.

The services provided by DoNotPay have helped thousands of users resolve their legal issues without hiring a lawyer. This has great potential to make legal services more affordable and available to those needing more resources or knowledge to navigate the legal system independently. In addition, the success of DoNotPay shows how AI technology and chatbots can be used to streamline and simplify legal processes.[29] By automating routine tasks and helping users navigate complex legal processes, technologies like DoNotPay can help free up attorneys' time and resources to focus on the more complex aspects of the law that require human judgment. In 2023, there will be 101 features offered by DoNotPay.[30]

As we proceed through the 2020s, the adoption and development of "robot lawyers" are advancing, signaling a transformative era in the legal sector. Global firms and legal institutions are increasingly integrating AI to enhance the efficiency and accuracy of legal services. People use these AI systems, which have advanced machine learning algorithms and natural language processing, to do things like legal

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[28] Cat Casey, "The Robot Lawyers Are Here, Now What?," https://www.law.com/, 2023, https://www.law.com/legaltechnews/2023/01/05/the-robot- lawyers-are-here-now-what/?slreturn=20230504143454.

[29] Cat Casey.

[30] DoNotPay, "DoNotPay - The World's First Robot Lawyer," https://donotpay.com/, 2023, https://donotpay.com/.

research, due diligence, document automation, predictive analysis, and even giving first-hand legal advice.

B. Adaptation and transformation in managing the use of robot lawyers in legal practice

Within the justice system in the United States, AI is used to assist in crime prediction and prevention, as well as in determining penalties and the possible risk of recidivism (offenders who return to breaking the law). An example of a rule is the "First Step Act," implemented in 2018.[31] This law instructs the federal government to create and deploy algorithms that can help predict the likelihood of recidivism of individuals released from prison. One case in point is Wisconsin's use of COMPAS software to aid in sentencing, although this has sparked controversy as the algorithm has been criticized for having racial bias.[32] Estonia is one of the leading countries in using digital technology in its government, including AI. They have a program called "AI Judges," which is used to help resolve minor legal disputes and reduce the workload of human judges. An example of a rule is the use of AI in their online justice system, where AI is used to make simple, routine legal decisions in low-value consumer dispute cases. A case in point is using "AI Judges" to help resolve e-commerce disputes involving relatively small amounts of money (usually less than €7,000), AI analyzes arguments and evidence from both sides

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[31] United States Sentencing Commission, "The First Step Act of 2018: One Year of Implementation," https://www.ussc.gov/, 2023, https://www.ussc.gov/research/research-reports/first-step-act-2018-one-year-implementation.

[32] Jeff Larson et al, "How We Analyzed the COMPAS Recidivism Algorithm," https://www.propublica.org/, 2023, https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm.

and then makes a preliminary legal decision.[33] If one or both parties disagree with an AI decision, they can still appeal to a human judge. Although details of individual cases are not publicly available, reports state that AI has successfully treated hundreds of cases since its introduction.

Adaptation and Transformation in regulating the use of artificial intelligence technology in legal practice is a challenge and an urgent need. As artificial intelligence and related technologies, such as "robot lawyers," are increasingly being integrated into various aspects of our lives, the practice of law is no exception. Therefore, ensuring that this adaptation and Transformation is carried out effectively and sustainably is important. Adaptation in this context means understanding and accepting that artificial intelligence technologies will play an increasingly significant role in legal practice. This involves not only the use of this technology in carrying out legal tasks but also adjusting the way of work, approach, and even the organizational structure of the legal practice to make the most of this technology.

Transformation is more than adaptation; it implies a more fundamental and long-term change in legal practice. In the context of artificial intelligence, this could involve changes in the business model of law firms, whereby this technology is used to provide legal services that are faster, cheaper, and more accessible. It could also mean legal education and training changes, focusing more on technology and digital skills. In addition, this adaptation and Transformation must also include the development and implementation of appropriate legal and regulatory frameworks to regulate the use of artificial intelligence technologies in legal practice.

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[33] Joshua Park, "Your Honor, AI.," https://hir.harvard.edu, 2023, https://hir.harvard.edu/your-honor-ai/.

This should include protecting data privacy and security, maintaining ethics and fairness in the use of this technology,[34] In order to carry out this adaptation and Transformation, the role of various stakeholders is very important. Governments, the legal industry, educational institutions, and the technology community need to work together to shape a shared vision and strategy for the future of legal practice involving artificial intelligence. In this way, we can ensure that this technology will benefit the legal system and society while minimizing potential risks and challenges.[35]

Indeed, no specific countries explicitly regulate or allow the use of "robot lawyers." However, in many countries, technology and artificial intelligence use in the legal field, including "robot lawyers," is becoming increasingly common. Examples include the United States, the United Kingdom, Canada, and Estonia.

a. United States of America

   Many legal technology firms in the United States have developed AI-based software that can perform various legal tasks, from legal research to document creation. Examples are ROSS, DoNotPay, Legal Robot, and CaseText.

b. English

   In the UK, companies like Ravn and Luminance use AI to assist with legal research and analysis. The DoNotPay service is also available in the UK.[36]

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[34] John Barresi, "On Building a Person: Benchmarks for Robotic Personhood," *Journal of Experimental & Theoretical Artificial Intelligence* 32, no. 4 (3 Juli 2019): 581–600, https://doi.org/10.1080/0952813X.2019.1653386.

[35] Patrick J. Hayes, Kenneth M. Ford, dan Jack R. Adams-Webber, "Human Reasoning about Artificial Intelligence," *Journal of Experimental & Theoretical Artificial Intelligence* 4, no. 4 (2007): 247–63, https://doi.org/10.1080/09528139208953750.

[36] Oscar Williams, "Fourth Industrial Revolution: AI Startups Like RAVN, Luminance, and Ravelin Mean Less Boring Paperwork," https://www.businessinsider.com, 2017,

   c. Canada

Blue J Legal is a Canadian company that uses AI to assist lawyers with legal research and analysis. The key feature of Blue J Legal is Foresight, a platform that can forecast legal outcomes based on patterns in existing legal data. This platform is designed to help lawyers and other legal professionals understand and forecast potential legal outcomes more accurately and efficiently.[37]

Meanwhile, it should be noted that although the use of AI in law is becoming increasingly common, many legal and ethical questions still need to be answered. For example, who is responsible if a "robot lawyer" makes a mistake? How do we ensure that the algorithms used by "robot lawyers" are fair and unbiased? Moreover, how do we protect the privacy and security of client data? Additionally, the law of many countries usually requires a person to be licensed to provide legal advice, limiting what a "robot lawyer" can do. Therefore, even though AI is starting to penetrate the field of law, human lawyers are still very necessary and relevant.

A 2013 study on the future of work evaluated the risks of algorithms replacing various jobs over the next 20 years. This study shows that lawyers only have a 3.5% chance of being replaced by robots. This figure is much lower than that of paralegals, who have a 94% chance of being replaced. The main reason behind this is that algorithms are very reliable at making mostly binary decisions, such

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https://www.businessinsider.com/fourth-industrial-revolution-ai-ravn-luminance-ravelin-automation-less-boring-paperwork-2017-3.

[37] Thomson Reuters, "Thomson Reuters and Blue J Legal Deliver Artificial Intelligence-Based Tax Foresight," https://www.thomsonreuters.com/, 2016, https://www.thomsonreuters.com/en/press-releases/2016/november/thomson-reuters-and-blue-j-legal-deliver-artificial-intelligence-based-tax-foresight.html.

as in the case of judges, who have a 40% chance of being replaced. However, according to Andrew Murray, a technology law professor at the London School of Economics, a lawyer's job includes providing advice that draws multiple perspectives by considering complex issues."[38] However, some technological advances in the last decade may have swayed this forecast and pointed to greater potential for the role of robot lawyers in the future.

In Indonesia, the role of robot lawyers in the future can be very important, especially in the criminal justice system. Here are some potential examples:

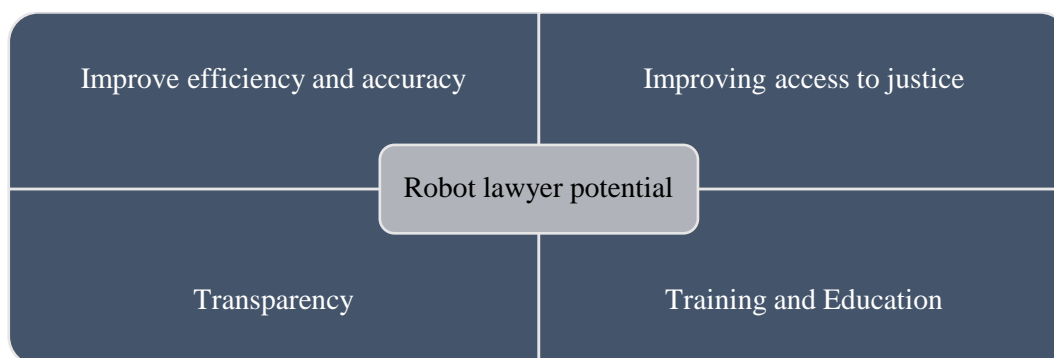| Improve efficiency and accuracy	Improving access to justice
Robot lawyer potential	
Transparency	Training and Education

FIGURE 2. The potential for robot lawyers in Indonesia

a. Improve efficiency and accuracy

Robot lawyer can assist in legal research, case analysis, and document writing, all of which can increase the efficiency and accuracy of the legal process. They can help reduce the workload of judges and other legal staff, speeding up the legal process and reducing the backlog of cases.

b. Increase access to justice.

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[38] The Guardian, "Ready for Robot Lawyers? How Students Can Prepare for The Future of Law," https://www.theguardian.com/, 2017, https://www.theguardian.com/law/2017/jul/31/ready-for-robot-lawyers-how-students-can-prepare-for-the-future-of-law.

Robot lawyer can be used to provide legal advice to those who cannot afford a lawyer. In many cases, this can provide access to the legal system for those who previously did not have access.

c. Transparency

AI can make decisions based on the rule of law and the evidence presented, which can help increase transparency in the justice system.

d. Training and Education

Robot lawyer can also be used in training and legal education. For example, they can be used to simulate legal cases and allow law students to practice and learn.

Reform or updating the Criminal Procedure Code (KUHAP) in Indonesia is a complex and important process, covering various aspects such as legal procedures, the rights of the accused, and the efficiency of the criminal justice system. The use of robot lawyers or AI in the context of criminal law can be a benefit of updating the Criminal Procedure Code (KUHAP).
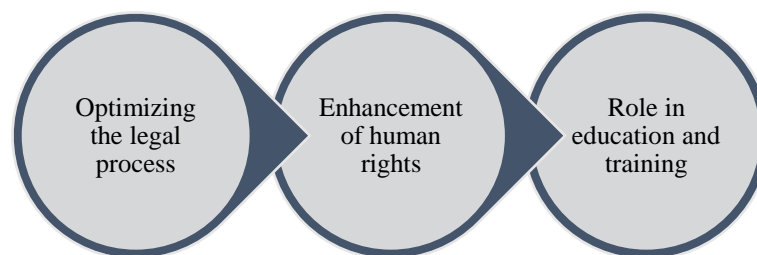
Optimizing the legal process → Enhancement of human rights → Role in education and training

FIGURE 3. The benefits of a robot lawyer for KUHAP reform

a. Optimizing legal processes

The utilization of artificial intelligence (AI) in the legal domain is a game-changer for optimizing legal processes. AI's application in legal research transforms the laborious task of sifting through legal databases into an efficient, automated process. It can rapidly produce draft indictments, thus reducing the time lawyers and paralegals spend on preliminary drafts. Furthermore, AI algorithms excel at identifying and retrieving relevant case precedents, enabling legal professionals to build stronger arguments backed by comprehensive legal research. Additionally, AI can assist in the evidence discovery process by pinpointing pertinent information from a vast array of data, which would be a formidable task for humans to manage in a timely manner. These applications not only enhance efficiency but also increase the accuracy and consistency of legal work, allowing human practitioners to allocate more time to critical thinking and strategy development, which are inherently human skills that AI cannot replicate.

b. Improvement of human rights

The integration of "robot lawyers," powered by AI, into the justice system can significantly contribute to the improvement of human rights. Moreover, AI democratizes legal assistance through virtual legal services, offering those who might not have the financial means to afford a lawyer access to legal guidance. This can manifest as online platforms providing preliminary legal advice or chatbots that can help individuals understand their legal rights and the remedies available to them. By making legal aid more accessible, AI can bridge the gap between the law and those who are often underserved by

the current system, ensuring that every individual has the opportunity to seek justice. This technological leap has the potential to level the playing field, making the legal process more equitable and just for all, regardless of socioeconomic status.

c. Role in education and training

In the context of education and training within the legal system, robot lawyers serve as an innovative tool for disseminating knowledge and facilitating learning. Robot lawyers can simulate various legal scenarios, providing interactive learning experiences that help legal professionals understand and apply new regulations and procedures effectively. They can also offer personalized learning modules, adapting to the user's pace and style of learning, which enhances the educational experience. Furthermore, AI-driven programs can be updated in real-time to reflect the most current legal changes, ensuring that legal practitioners have the most up-to-date information. This continuous education is crucial in a field where laws and legal interpretations are constantly evolving. By integrating robot lawyers into legal training programs, the judicial system can ensure that its members are well-equipped to implement new laws with competence and confidence, ultimately leading to a more efficient and just legal system.

C. Challenges and obstacles faced in implementing "Robot Lawyer" technology in the criminal law system in Indonesia

DoNotPay has gained significant recognition in the media and the legal industry. Joshua Browder, the founder of DoNotPay, has been

named the "Robin Hood of the internet" by the BBC, and many major news publications have covered the service. The growth of users from only ten people to 50,000 shows that services like DoNotPay have significant value to society.[39] However, the popularity and growth of DoNotPay have also generated some controversy.[40] Several attorneys and legal commentators have pointed out that while DoNotPay simplifies many legal processes, there is also a risk that users may underestimate the complexity of their legal issues or miss important details that could impact the outcome of their case. In addition, there are also questions about how to protect user privacy and data in apps like DoNotPay.

Implementing technology such as "robot lawyers" in the criminal law system in Indonesia certainly faces various challenges and obstacles, ranging from technological infrastructure to regulations and ethics.[41] The following are some of the main challenges that will be faced:

a. Technology infrastructure and access

Indonesia is an archipelago with a vast territory, and technological infrastructure can vary widely between urban and rural areas. Although internet access and the use of technology are increasing across the country, there are still areas with limited technological infrastructure. This can be a

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[39] Igor Bosilkovski, "Stanford Grad Who Created The World's First 'Robot Lawyer' Raises $12 Million In Series A," https://www.forbes.com/, 2020, https://www.forbes.com/sites/igorbosilkovski/2020/06/23/stanford-grad-who-created-the-worlds-first-robot-lawyer-raises-12-million-in-series-a/?sh=1a50ecf13309.

[40] Mohsen Klasik, "Robot Lawyer Beracara di Indonesia Suatu Hil yang Mustahal," https://klikhukum.id, 2023, https://klikhukum.id/robot-lawyer-beracara-di-indonesia-suatu-hil-yang-mustahal/.

[41] Miles Brundage, "Limitations and Risks of Machine Ethics," *Journal of Experimental & Theoretical Artificial Intelligence* 26, no. 3 (2014): 355–72, https://doi.org/10.1080/0952813X.2014.895108.

bottleneck in implementing "robot lawyers," which require stable and strong internet connectivity.

b. Laws and regulations

Laws and regulations regarding using artificial intelligence and technology in law still need to be clear in Indonesia. There are questions about how to ensure that "robot lawyers" comply with legal standards and professional ethics, as well as how to protect the privacy and security of user data. Developing and updating regulations that support and regulate the use of this technology will be a major challenge. In Indonesia, existing legal regulations do not specifically address the use of artificial intelligence (AI) in legal practice, including the role of "robot lawyers". This raises a number of questions on how to ensure compliance with applicable legal and ethical standards in the legal profession when AI is involved, particularly in maintaining the privacy and security of user data. In line with Law No. 18/2003 on Advocates, currently the advocate profession in Indonesia is limited to individuals who provide legal services, both inside and outside the court, and meet certain requirements. In other words, advocates are recognized as humans who have the ability to provide consultation, legal assistance, and other legal actions for the benefit of clients. The inclusion of AI in legal practice necessitates updates to existing regulations to include arrangements on how AI can be used in providing legal services as well as how AI can be integrated in the legal profession without overriding the need to maintain ethical standards and professionalism. This is a significant challenge for Indonesian policymakers and legal practitioners to ensure that technological and legal developments go hand in hand

while maintaining the principles of fairness and adherence to professional ethics.

c. Education and Awareness

Using a "robot lawyer" requires a basic understanding of technology and artificial intelligence. Even though more and more Indonesians are tech-savvy, a knowledge gap can become an obstacle to the acceptance and use of this AI-based legal technology. Education and training will be critical to helping the public and legal professionals understand and adapt this technology.

d. Trusts and Accuracy

While "robot lawyers" can help automate and speed up legal processes, there are also concerns about the accuracy and reliability of information generated by AI. Errors or inaccuracies in legal advice can have serious consequences and raise concerns about users' trust in robot lawyers.

e. Human Replacement

Some concerns that using "robot lawyers" could threaten traditional legal work. While some tasks can be automated, many aspects of legal practice require human judgment and empathy - something machines still need to duplicate. Addressing and addressing these concerns will be a challenge in accepting and implementing this technology.

f. Language and Culture

An effective user must be able to understand and respond in the language used by the user. Even though many of these technologies were originally developed in English, it was important to adapt them to the local language, in this case, Indonesian Language. In addition, they must also be programmed to understand the cultural context and local legal norms to provide relevant and appropriate advice.

g. Cost and Investment

The development and implementation of robot lawyer technology require significant investment. These costs cover the initial development and maintenance of the system and training costs for users and legal professionals. In the context of the Indonesian economy, this can be a significant barrier, especially for smaller law firms and institutions.

h. Data Privacy and Security Issues

With the increasing use of AI technology in law, privacy and data security issues are becoming increasingly important. Legal data is often highly sensitive and must be properly protected. Therefore, robot lawyers must have a strong security system to protect user data and ensure privacy.

To overcome challenges and obstacles in implementing "robot lawyer" technology in the criminal law system in Indonesia, the following are some approaches that can be taken:

a. Technology infrastructure and access

To address this challenge, investment in technology infrastructure and increased internet access across the country is essential. This may involve cooperation between the government and the private sector to expand coverage and improve the quality of internet connectivity. In addition, developing applications that can operate efficiently at lower internet speeds can also be a solution.

b. Laws and regulations

It requires cooperation between the government, the legal industry, and the technology community to develop and update regulations that support and regulate the legal use of AI technologies. This may involve drafting new laws or

amendments to existing laws to ensure that the legal use of AI complies with legal and professional ethical standards.

c. Education and Awareness

Education and training programs can be created to help the public and legal professionals understand and adapt this technology. This could involve seminars, workshops, or online courses that cover the basic principles of AI and how this technology can be applied in law.

d. Trusts and accuracy

In order to build user trust, robot lawyer developers need to ensure that their system can provide accurate and reliable information. This can be done by involving legal professionals in the development process to ensure that the advice provided by the AI system is in line with applicable legal standards.

e. Human replacement

Open and transparent communication about the purpose and benefits of robot lawyers can help allay concerns about replacing traditional legal jobs. It is important to emphasize that the purpose of this technology is to assist, not replace, lawyers and legal professionals.

f. Language and culture

A multicultural and multilingual approach to robot lawyer development can ensure that various user groups can use this technology. This may involve translation and localization of services to ensure Indonesians can understand and use them effectively.

g. Cost and investment

Collaboration between the government, the private sector, and educational institutions may be required to ensure sufficient investment in developing and implementing robot lawyer technology in Indonesia.

h. Data privacy and security issues

Data security and user privacy must be top priorities in developing robot lawyers. This can be achieved through advanced encryption technology and security protocols.

Despite the challenges and controversies, robot lawyers like DoNotPay show much potential for the future of legal services. By continuously expanding its range of services and improving its AI capabilities, DoNotPay can continue to expand access to legal services and help users navigate the legal system more efficiently and effectively.

In addition, DoNotPay's success could drive further developments in the legal and technological fields, with more companies and developers looking for ways to integrate AI and chatbots into legal services. Humanity may see more "robot lawyers" like DoNotPay, each with specialties and unique features. Overall, DoNotPay is an interesting example of how AI technology and chatbots can help users resolve their legal issues. While some challenges and questions need to be answered, the potential benefits of this technology are substantial and could have a significant impact on the legal field in the future.

The application of robot lawyers in the criminal justice system in Indonesia brings significant challenges, particularly in terms of the integration of these technologies with the existing legal framework. In Indonesia, as well as in many other countries, the practice of law requires a license, which raises important questions regarding how AI can be accommodated within this framework. Either AI will only be considered an assistant to licensed lawyers or it may require an entirely new form of certification. Internationally, the use of AI in legal practice already exists, but only as support rather than as an

independent lawyer taking full responsibility for legal cases. Efficiency and accuracy in legal research are increasing thanks to AI, but this also raises concerns regarding data privacy and its impact on the legal workforce. From a legal perspective, AI is not yet recognized as a legal subject as it lacks the personhood to act or be legally accountable.

In the Indonesian context, the legal framework that has not fully supported the integration of AI technology adds to the complexity of the situation. AI is not considered a legal subject that can be held responsible for its actions, as legal responsibility requires consciousness and intention—something that AI lacks. Currently, robots or AI are considered tools used by humans or corporations, not entities with legal rights and obligations. Integrating AI into Indonesia's legal system requires an in-depth analysis of the barriers and challenges. This includes consideration of the legal basis, professional ethics, and liability mechanisms. In addition, it is necessary to consider the impact of robot lawyers on the principles of equality before the law and the right to an adequate defense. While AI promises substantial benefits, its application must be done carefully to ensure that standards of fairness are met without compromising the integrity of the legal system. The debate over the legal status of AI continues to evolve. In the European Union, for example, the concept of "electronic personhood" has been considered to grant AIs a special form of legal status. However, most legal systems, including in the United States, still view AI as the property of its users or creators, with legal liability returning to the human or legal entity that operates or owns the AI. Therefore, despite intensive legal discussions, AI has not generally been recognized as an independently liable legal subject.

Discussions on the legal status of AI in Indonesia require careful attention to the dynamic evolution of the law and the adaptations that

may be required to accommodate non-human entities. The question of how AI can be certified or licensed for legal practice demands consideration of existing legal regulations and the potential establishment of new legal frameworks. The presence of AI as an assistive tool in international legal practice foreshadows the possibility of a similar role it could take in Indonesia's criminal justice system, but with broader implications for the accessibility and efficiency of legal services. Because of this, AI needs to be added to the legal system in a way that is fair and includes all types of people, since it is a tool that can help people get justice. However, such a framework should also address ethical and privacy concerns, establish liability limits, and consider socioeconomic impacts, including the risk of unemployment in the legal sector due to automation. Also, because AI could be used in the law, policymakers, lawyers, and technology experts need to keep talking about the legal, moral, and practical effects of AI getting smarter.

In Future, collaboration between robot lawyers and human legal professionals will be the key to the successful application of AI technology in the legal field, as lawyers can use robot lawyers to assist them in conducting legal research, dealing with administrative tasks, and compiling initial legal documents. Thus, human lawyers can focus on strategy, negotiations, and important cases requiring human expertise and critical thinking.[42] Robot lawyers can assist lawyers in automating time-consuming processes, such as contract review or legal research, thereby reducing the time spent on routine tasks. Additionally, AI can help reduce human error and improve accuracy

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[42] Zico Junius Fernando, "Robot Lawyer: Inovasi Penegakan Hukum Masa Depan," www.puslatkumtara.id, 2023, http://www.puslatkumtara.id/2023/05/robot-lawyer-inovasi-penegakan-hukum.html.

in legal work. By reducing the costs incurred on legal tasks, robot lawyers can help make legal services more affordable for individuals and businesses with limited budgets. This will increase access to justice and allow more people to get the legal assistance they need. Robot lawyers can help expand people's access to legal resources by providing information and services through online platforms. This will enable individuals to navigate day-to-day legal matters more easily and get needed support. Human legal professionals and AI developers can work together to develop more sophisticated, efficient, and effective algorithms. This collaboration will help create better and more innovative legal solutions for society.[43]

To make this collaboration possible, it is important for legal professionals to continuously develop their knowledge of AI technologies and adapt to the changes brought about by robot lawyers. Adequate education and training will be key in preparing a new generation of lawyers to work effectively with robot lawyers and exploit the full potential of this technology in the legal field.

4. Conclusion

The development of "robot lawyer" technology, which is based on artificial intelligence (AI), holds a lot of promise for improving the effectiveness and accessibility of legal services within Indonesia's criminal justice system. Still, integrating this technology comes with some challenges, such as improving technology infrastructure, creating legal and moral frameworks, filling in gaps in knowledge, and addressing concerns about privacy, accuracy, trust, and the cost of these new technologies. These problems can be solved, though, if the government, the legal community, and the tech community all work together to make conditions that are good for AI to be used and

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[43] Zico Junius Fernando.

grow in legal practices. By investing in technological infrastructure, enacting pertinent laws and regulations, facilitating education and training, and ensuring stringent privacy and data security measures, robot lawyers can become an integral component of Indonesia's legal ecosystem. The transformative potential of robot lawyers is immense, offering broader access to legal services, expediting legal processes, and contributing to a more equitable and inclusive criminal justice system. Lawyers don't have to worry about becoming obsolete because these AI solutions are meant to support their jobs by taking on boring and repetitive tasks. This frees them up to work on the more complicated and nuanced parts of law that require human judgment and emotional intelligence. For the full realization of AI's benefits, ethical considerations and transparency must be at the forefront of deploying robot lawyers. This includes safeguarding user data, ensuring unbiased AI decision-making, and encouraging public dialogue about AI's role within legal frameworks. In essence, while the path to integrating robot lawyers in Indonesia is dotted with challenges, the opportunities they present are vast and exciting. Through collaboration, innovation, and prudent regulation, Indonesia can harness this technology to foster a more effective, accessible, and just legal system. The synergy between human and AI-based legal practitioners will be crucial in navigating the future of legal practice, ensuring that as AI handles the procedural, humans can concentrate on providing insightful, compassionate counsel.

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The authors state that there is no conflict of interest in the publication of this article.

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As computational technology and artificial intelligence matures, more people will be able to have better access to justice.

Monica Bay
Fellow, Stanford Law School CodeX

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