

Capturing Law Reform in The Digital Age: Indonesian and Estonian Perspectives

Sholahuddin Al-Fatih^{1*}, Sara Sinha²

¹Faculty of Law, University of Muhammadiyah Malang, Malang, Indonesia

²Citizen OS Foundation, Telliskivi Creative City, Telliskivi 60a/3, Tallinn 10412, Estonia

*Corresponding: salfatih@umm.ac.id

Abstract

This article examines how law reform in the digital age happens in Indonesia and Estonia. Indonesia and Estonia are located in different cultures and also areas. While law reform in the digital age happens, the two countries above will also demonstrate differences. This article uses normative legal studies to capture which legal instrument is better in both countries. This article found that Estonia is leading in providing legal instruments to face the digital age, while Indonesia needs to catch up. Some legal instruments in Indonesia such as AI law, Digital ID law, and e-government law should be drafted and implemented.

Keywords: Law Reform; Digital Age; Indonesia; Estonia; Perspective

Abstrak

Artikel ini mengkaji bagaimana reformasi hukum di era digital terjadi di Indonesia dan Estonia. Indonesia dan Estonia terletak dalam budaya dan wilayah yang berbeda. Meskipun reformasi hukum di era digital terjadi, kedua negara di atas pasti akan menunjukkan perbedaan dalam menghadapinya. Artikel ini menggunakan metode penelitian hukum normatif untuk menemukan instrumen hukum mana yang lebih baik di kedua negara. Hasilnya, artikel ini menemukan bahwa Estonia lebih unggul dalam menyediakan instrumen hukum untuk menghadapi era digital, sementara Indonesia tertinggal dalam hal tersebut. Beberapa instrumen hukum di Indonesia harus dirancang dan diterapkan, seperti Rancangan Undang-Undang AI, Rancangan Undang-Undang Identitas Kependudukan Digital, dan Rancangan Undang-Undang Pemerintahan Digital.

Keywords: Reformasi Hukum; Era Digital; Indonesia; Estonia; Perspektif



This work is an open access article under the [Creative Commons Attribution-ShareAlike 4.0 Generic License](https://creativecommons.org/licenses/by-sa/4.0/)

A. INTRODUCTION

Reform is defined as forming, compiling, and reuniting¹ referring to modifying the structure and rules of a game to improve its effectiveness. The reform also involves dismantling

¹ Natangsa Surbakti, "Filsafat Hukum Perkembangan Pemikiran Dan Relevansinya Dengan Reformasi Hukum Indonesia," *Surakarta: Universitas Muhammadiyah Surakarta*, 2010.

the corrupt and inefficient old regime and constructing a more democratic, efficient, and socially just new regime. The term "reform" encompasses core ideals that serve as the state's and society's foundation and hope.² "Law reform," is defined as a change in legal conditions from the prior to the better. Law reform is regarded as a widespread phenomenon in all countries (referring to the rule of law or *rechtstaat*; in Bahasa known as *Negara Hukum*), including Indonesia.

Indonesia, with its diverse languages and cultures, has begun to flourish and carry out law reform initiatives since independence. Indonesian constitution, for example, has undergone several changes, from the 1845 Constitution, UUDS, RIS Constitution, to the 1945 NRI Constitution.³ Those changes indicate flexibility and are captured as the law reform model in Indonesia. In its development, law reform has been seen as changes to the constitution and various forms of changes to other legal products, including changes in welcoming the digital age, where Indonesia is listed as a country with relatively high interaction in cyberspace.⁴

Cyberspace provides much information, followed by cybercrime, such as fake news, hoaxes, hate speech, defamation, fraud in online shopping, and so on, and the Indonesian government issued some regulations to fight against cybercrime and protect its citizens. The transformation and law reform in Indonesia to face the digital age began in 2003 when the Electronic Information and Transactions Bill was discussed in parliament.⁵ However, even though it began in 2003, the Electronic Information and Transactions (henceforth referred to as EIT Law) was successfully drafted and issued in 2008 under Law Number 11 of 2008 on Electronic Information and Transactions.⁶

The issuance of the EIT Law has two main objectives: to facilitate the development of the digital economy in Indonesia and to provide security, justice, and legal certainty for Internet users and operators in Indonesia. With the EIT Law, electronic information or documents became valuable legal evidence in Indonesia for the first time, as intended in Articles 5 and 44 of EIT Law. This is a very progressive law reform in Indonesia's development, especially in the digital era.

With the research background above, this research has strong novelty and findings because no previous research or papers by Indonesian scholars have discussed the digital age. Furthermore, this paper is considered special because it adds comparative studies between

² Lutfil Ansori, "Reformasi Penegakan Hukum Perspektif Hukum Progresif," *Jurnal Yuridis* 4, no. 2 (2018): 148, <https://doi.org/10.35586/v4i2.244>.

³ Ija Suntana and Tedi Priatna, "Four Obstacles to the Quality of Constitutional Law Learning in Indonesia," *Heliyon* 9, no. 1 (2023): e12824, <https://doi.org/10.1016/j.heliyon.2023.e12824>.

⁴ Hidayat Chusnul Chotimah, "Tata Kelola Keamanan Siber Dan Diplomasi Siber Indonesia Di Bawah Kelembagaan Badan Siber Dan Sandi Negara [Cyber Security Governance and Indonesian Cyber Diplomacy by National Cyber and Encryption Agency]," *Jurnal Politika Dinamika Masalah Politik Dalam Negeri Dan Hubungan Internasional* 10, no. 2 (2019): 113–28, <https://doi.org/10.22212/jp.v10i2.1447>.

⁵ Fariza Ramadhani, "Dinamika UU ITE Sebagai Hukum Positif Di Indonesia Guna Meminimalisir Kejahatan Siber," *Kultura: Jurnal Ilmu Hukum, Sosial, Dan Humaniora* 1, no. 1 (2023): 89–97, <https://doi.org/10.572349/kultura.v1i1.98>.

⁶ Zaka Firma Aditya and Sholahuddin Al-Fatih, "Indonesian Constitutional Rights: Expressing and Purposing Opinions on the Internet," *The International Journal of Human Rights* 25, no. 9 (2021): 1395–1419, <https://doi.org/10.1080/13642987.2020.1826450>.

Indonesia and Estonia. Estonia is a leading country in Northern Europe, with a high and fast transformation to face the digital age.

B. METHOD

This article used the legal research method⁷ with normative studies, supported by regulatory and comparative approaches.⁸ Several regulations (Constitution or UUD NRI 1945, Principles of the Estonian Information Policy, Electronic and Information Technology Law, KIP Law, Personal Data Protection Law, Consumer Protection Law/Act, Digital Signature Act, Money Laundering and Terrorist Financing Prevention Act and the Creditors and Credit Intermediaries Act and Commercial Code, both in Indonesia and Estonia) related to the digital age are analyzed and compared between Indonesia and Estonia. The research approach uses a comparative and statutory approach. Several case examples are also used as reinforcement and illustrations to strengthen novelty. The analysis is then carried out using prescriptive methods, such as the prescription of a doctor who prescribes for a patient, so it is hoped that the prescription can be a way to achieve healing, in correlation with this article where this article tries to offer comprehensive ideas and concepts related to comparative studies of legal reform in Indonesia and Estonia. So that based on this constructive legal research method, research results will be obtained that are solutions and implementable in order to capture law reform in the digital age, especially in Indonesia, which can be used as reference legal basis for policymakers.

C. RESULTS AND DISCUSSIONS

1. Law Reform in the Digital Age in Indonesia

The functional content of law reform includes changes in the wording of a country's formal statute or how prosecutors and judges apply it. Whether a reform enhances the law is subjective. What specific interest or coalition of interests does law reform seek to help, and what are the predicted consequences to other parties? The details and public relations that precede a reform typically transmit less than the anticipated repercussions, and consideration should be made for unintended outcomes. Regardless of the assertions made by its supporters, the normative content of reform can only be accurately examined after the fact.⁹

Understanding law reform in Indonesia is an extremely complex matter due to its history. However, while related to the 1998 reform, the phrase "law reform" is rather simple to understand. These reforms have transformed Indonesia from an authoritarian military-backed state into the world's third-largest democracy, though still in its early stages.¹⁰ The military era,

⁷ Sholahuddin Al-Fatih, *Perkembangan Metode Penelitian Hukum Di Indonesia*, 1st ed. (Malang: UMM Press, 2023).

⁸ Sholahuddin Al-Fatih and Ahmad Siboy, *Menulis Artikel Karya Ilmiah Hukum Di Jurnal Nasional Dan Internasional Bereputasi* (Malang: Inteligensia Media, 2021).

⁹ Howard Dick, "Why Law Reform Fails: Indonesia's Anti-Corruption Reforms," in *Law Reform in Developing and Transitional States*, ed. Tim Lindsey (Routledge, 2006), 42–64, <https://doi.org/10.4324/9780203962305>.

¹⁰ Tim Lindsey, "Legal Infrastructure and Governance Reform in Post-Crisis Asia: The Case of Indonesia," in *Law Reform in Developing and Transitional States*, 1st ed. (Routledge, 2006), file:///Users/sholahuddinalfatih/Downloads/Routledge_Studies_in_Development_Economics_Tim_Lindsey_Law_Reform.pdf.

which had previously governed for 32 years, came to an end with the reform period in 1998.¹¹ Through this reform, Indonesia gradually established direct democracy by holding general elections, ensuring human rights, and, of course, changing the constitution.

Since the beginning of the reform era in 1998, Indonesia has gradually implemented democracy and constantly implemented legal reform. Apart from the 1998 reform era, several changes and currents of law reform were seen in Indonesia, including law enforcement through a one-roof justice system, the formation of KOMNAS HAM (National Commission of Human Rights), the disbandment of the dual function of ABRI (National Military Agency) and strengthening the role of the POLRI (Indonesian National Police Agency) to maintain state security, the formation of the Cabinet Secretariat, the formation of independent state commissions, such as the Ombudsman to monitor maladministration of public services to the formation of the KPPU (Business Competition Supervisory Commission) to monitor monopolies in business.¹²

Law reform trend in Indonesia continues every day, and this trend remains up to these days when Indonesia faces the digital age in which all parts of life are increasingly reliant on digital technology.¹³ Based on some literature, the authors captured law reform in the digital age in Indonesia as mentioned below;

- a) Indonesia is developing regulations for e-commerce, covering consumer protection, data privacy, and electronic transactions. These regulations seek to establish a legal framework that promotes the development of the digital economy. Regulation related to e-commerce, covering consumer protection, data privacy, and electronic transactions issued in Law Number 1 of 2024 concerning Second Amendment to Law Number 11 of 2008 concerning Electronic Information and Transactions (EIT Law).
- b) Indonesia is contemplating and implementing measures to address data protection and privacy issues. This involves efforts to create comprehensive data protection laws consistent with international norms. Regulation to address data protection and privacy issues is specified in Law Number 27 of 2022 concerning Personal Data Protection (PDP Law).
- c) The Indonesian government recognizes the importance of cybersecurity and is working on laws to strengthen the country's cybersecurity framework. These rules are intended to handle cyber risks and protect critical digital infrastructure. Regulation related to cybersecurity is specified in Presidential Regulation Number 47 of 2023 concerning National Cyber Security Strategy and Cyber Crisis Management.
- d) Indonesia recognizes digital signatures and electronic transactions, allowing electronic documents to be accepted in different legal circumstances. Regulation related to digital signatures and electronic transactions is specified in Law Number 1 of 2024

¹¹ Camden Kelliher et al., "Unconstitutional Authority of Indonesia's Constitutional Court: The Resolution of Pilkada Result Disputes," *Election Law Journal: Rules, Politics, and Policy* 18, no. 3 (2019): 297–308, <https://doi.org/10.1089/elj.2018.0535>.

¹² Lindsey, "Legal Infrastructure and Governance Reform in Post-Crisis Asia: The Case of Indonesia."

¹³ Taufiq Nur Azis, "Strategi Pembelajaran Era Digital," *Annual Conference on Islamic Education and Social Sains (ACIEDSS 2019)* 1, no. 2 (2019): 308–18, <https://pkm.uika-bogor.ac.id/index.php/aciedss/article/view/512>.

- concerning the Second Amendment to Law Number 11 of 2008 concerning Electronic Information and Transactions (EIT Law).
- e) Indonesia supports open data projects to promote openness and innovation. These initiatives entail making specific government data available to the public for research and application development. Regulation related to open data projects to promote openness and innovation is specified in Law Number 14 of 2008 concerning Openness of Public Information (OPI Law or KIP Law).
 - f) Indonesia’s government is developing legislation to control the growing fintech sector, such as digital payments and peer-to-peer lending. Regulation related to fintech is specified in Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector.
 - g) Indonesia has implemented digital literacy programs to prepare residents for the digital age. These programs aim to increase understanding and awareness of digital technology, online safety, and responsible citizenship. The Indonesian Ministry of Communication and Information released the Increasing Digital Capability program at www.literasidigital.id portal. The Siberkreasi National Digital Literacy Movement (GNLD or Gerakan Nasional Literasi Digital) has four pillars to support Indonesia's digital transformation, covering digital skills, digital ethics, digital culture, and digital safety, all of which are intended to make Indonesia a digital nation.
 - h) Indonesia supports startups and encourages innovation and entrepreneurship in the digital industry. Regulation related to startups is specified in Law Number 6 of 2023 concerning the Stipulation of Government Regulations in Lieu of Law Number 2 of 2022 concerning Job Creation into Law (Job Creation Law or Ciptaker Law).
 - i) Smart Cities Initiatives: - Some Indonesian cities have implemented digital technologies to improve urban living. These efforts frequently entail collaborations among the government, private sectors, and citizens. Regulation related to smart cities is specified in Government Regulation Number 59 of 2022 concerning Urban Affairs. Furthermore, related to the concept of Ibu Kota Negara (IKN) Nusantara, the Indonesian government also issued Law Number 21 of 2023 concerning Amendments to Law Number 3 of 2022 concerning National Capital, which provides some guidelines to create smart city in IKN Nusantara.

Based on the summary statistics for the law reforms mentioned above, various new legal items were discovered and issued by the Indonesian government to face the digital era, including the EIT Law, PDP Law, Job Creation Law, and Startup-Fintech regulations. However, this situation does not imply that Indonesia's efforts to amend its laws in response to the digital era have halted. There are still many dynamics and legal aspects in the digital era that have not been codified in definite legal standards. Below is a table regarding the types of legal products that the Indonesian government has made and should generate to face the digital era.

Table 1. Legal Norms in the Digital Age in Indonesia

No.	Legal Norm	Available	Not yet	Type of Regulation
-----	------------	-----------	---------	--------------------

1.	E-commerce	v	EIT Law
2.	Data privacy and protection	v	EIT Law & PDP Law
3.	Consumer protection	v	EIT Law and Law Number 8 of 1999 concerning Consumer Protection. Based on the authors' identification; those Laws should be amended to accommodate law reform in the digital age.
4.	Cybersecurity	v	Presidential Regulation Number 47 of 2023 concerning National Cyber Security Strategy and Cyber Crisis Management. Based on the authors' identification, this regulation should be drafted on a Bill concerning Cybersecurity, not just issued as a Presidential Regulation.
5.	Digital signature	v	EIT Law
6.	Electronic transaction	v	EIT Law
7.	Open data project	v	KIP Law
8.	E-government	v	Should be amended Law Number 30 of 2014 concerning Government Administration that provides e-government issues.
9.	Digital ID for citizen	v	Should be amended to Law Number 24 of 2013 concerning Amendments to Law Number 23 of 2006 concerning Population Administration providing Digital ID for citizens
10.	Fintech	v	Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector. However, it is possible in the future for the Indonesian government to draft a Bill regarding fintech itself.
11.	Digital literacy	v	This program should be regulated clearly
12.	Startups	v	Job Creation Law. However, it is possible in the future for the Indonesian government to draft a Bill regarding startups itself.
13.	Smart cities	v	Already specified in Government Regulation Number 59 of 2022 concerning Urban Affairs. However, it is possible in the future for the

			Indonesian government to draft a Bill regarding smart cities or cities itself.
14.	Blockchain	v	There is no regulation concerning this matter. The Indonesian government should draft a Bill on blockchain.
15.	Artificial intelligence	v	There is no regulation concerning this matter. The Indonesian government should draft a Bill on artificial intelligence.

Table 1 above indicates that Indonesia has taken some steps to modify its laws in preparation for the digital age. These observations cover whether or not there are connected rules, the need to alter or make adjustments to linked regulations, and recommendations for the Indonesian government to make particular regulations concerning AI.

2. Law Reform in the Digital Age in Estonia

Estonia starts its reform to deal with the digital era in the 1990s. It began in 1994 when the government passed the Law on Information Policy, and the Data Protection Department was created.¹⁴ The Digital Signatures Act of 2000 was the next big milestone, allowing a variety of government services that required signatures to go online. The same year saw the beginning of digital tax filing and paperless cabinet sessions. In 2013, 95% of personal income tax filings were filed electronically. The e-ID card, introduced in 2002, significantly streamlined Estonians' interactions with the government. The e-health system was formed in 2008, and two years later, e-prescriptions became available.¹⁵

Personal data in Estonia is not held on a single server, but rather at multiple data registry points that are linked together via the X-Road (established in 2001)—a secure data exchange platform that authenticates and encrypts all incoming and outgoing transactions. The government service site www.esti.ee allows citizens to monitor the time and access point of their data files.¹⁶ Tiger Leap Foundation which was established in 1997 also played an important role in the digitalization of the education system in Estonia, which has provided computer and internet access since 2000.¹⁷ In practice, e-votes, digital signatures, digital embassies, and other digitalization in Estonian, made the country more effective and efficient in cost and time. Moreover, the authors captured law reform in the digital age in Estonia as mentioned below;

- a. Estonia has an advanced e-government system that provides citizens online access to many governmental services through the catalog of interoperability resources

¹⁴ Damien Azzopardi et al., "Economics Department Seizing the Productive Potential of Digital Change in Estonia," OECD Economics Department Working Papers, 2020, <https://doi.org/10.1787/18151973>.

¹⁵ Azzopardi et al.

¹⁶ Azzopardi et al.

¹⁷ Education Estonia, "How It All Began? From Tiger Leap to Digital Society," Education Estonia, accessed January 23, 2024, <https://www.educationestonia.org/tiger-leap/>.

- (RIHA).¹⁸ The country has created a secure digital ID system that allows users to authenticate themselves and access government services online (Principles of the Estonian Information Policy of 1998).¹⁹ Every Estonian has a state-issued digital identity. This electronic identity system, known as e-ID, has been in place for more than two decades and serves as the foundation of the country's e-state. The e-ID and the ecosystem that surrounds it are part of every citizen's daily transaction in the public and private sectors. People utilize their e-Identities for a variety of purposes, including bill payment, online voting, contract signing, shopping, and accessing health information. Estonians can access their e-Identity via a state-issued identity or ID card, Mobile-ID on their cellphones, or the Smart-ID app. Since 2014, Estonia has also offered a program known as e-Residency to anyone who aspires to become an e-resident of Estonia and enjoy its extensive digital services, regardless of citizenship or location.²⁰
- b. Estonia has used blockchain technology for e-governance and secure data management since 2007 and developed in Estonia, namely KSI. The country has integrated blockchain into its e-residency program, allowing people worldwide to start and operate enterprises in Estonia without being physically present (Principles of the Estonian Information Policy of 1998).
 - c. Data Protection and Privacy: - Estonia, like other EU member states, follows the General Data Protection Regulation (GDPR). The GDPR establishes requirements for the protection of personal data and privacy. Estonia has included GDPR principles in its national legal system (Estonian Personal Data Protection Act of 1996), which continues to provoke in other EU countries in 2018.²¹
 - d. Estonia prioritizes cybersecurity (Estonia Cybersecurity Act of 2018), reflecting its digital developments. The country has taken steps to secure its digital infrastructure and residents against cyber-attacks. The Lifelong Learning Strategy 2014-2020 in the Tiger Leap program stipulates that those competencies about digital skills should also include cybersecurity and that besides digital technology, elementary knowledge related to cybersecurity should be integrated into curricula.²²

¹⁸ Tamara Aslanova, "Nõusolekuhalduse Roll Ja Tähtsus Avalikes Organisatsioonides Digitaalajastul: Juhtum Eesti Kohta (The Role and Importance of Consent Management in Public Organizations in the Digital Age: Case on Estonia)" (Tallin University of Technology, 2021), <file:///Users/sholahuddinalfatih/Downloads/38b22f5547a14837aea0a48f6a7c5450.pdf>.

¹⁹ OECD, "Estonia E-Government and the Creation of a Comprehensive Data Infrastructure for Public Services and Agriculture Policies Implementation," *Digital Opportunities for Better Agricultural Policies*, 2019, <https://doi.org/10.1787/571a0812-en>.

²⁰ e-Estonia, "E-Identity," e-Estonia, accessed January 23, 2024, <https://e-estonia.com/solutions/e-identity/id-card/>.

²¹ Mark Robbins, "Myths, Values and Digital Transformation: The Exceptional Case of Estonia," 2018, [https://www.researchgate.net/profile/Mark-D-](https://www.researchgate.net/profile/Mark-D-Robbins/publication/327424543_Myths_Values_and_Digital_Transformation_The_Exceptional_Case_of_Estonia/links/5b8ea6cc92851c6b7ebff54/Myths-Values-and-Digital-Transformation-The-Exceptional-Case-of-Estonia.pdf)

[Robbins/publication/327424543_Myths_Values_and_Digital_Transformation_The_Exceptional_Case_of_Estonia/links/5b8ea6cc92851c6b7ebff54/Myths-Values-and-Digital-Transformation-The-Exceptional-Case-of-Estonia.pdf](https://www.researchgate.net/profile/Mark-D-Robbins/publication/327424543_Myths_Values_and_Digital_Transformation_The_Exceptional_Case_of_Estonia/links/5b8ea6cc92851c6b7ebff54/Myths-Values-and-Digital-Transformation-The-Exceptional-Case-of-Estonia.pdf).

²² Azzopardi et al., "Economics Department Seizing the Productive Potential of Digital Change in Estonia."

- e. Estonia recognizes digital signatures (800 M digital signatures given so far)²³ as legally enforceable, enabling electronic transactions and minimizing physical paperwork (the Digital Signatures Act, implementation of the EU Directive in 1999).
- f. Estonia has modified its legal system to address emerging technology, including AI and autonomous vehicles. This includes examining ethical and legal concerns and developing standards for responsible use.
- g. Estonia promotes open data programs, making government data available to the public. This increases transparency and encourages innovation.
- h. Estonia has a robust startup ecosystem and a regulatory framework that encourages innovation and entrepreneurship in the digital sector.
- i. Estonia prioritizes teaching residents about digital literacy and ethical technology use. This includes awareness campaigns on issues such as online safety and cybersecurity.

Estonia's quick development and technology transition have resulted in it being one of only three (Estonia with Finland and Singapore) unitary, unicameral parliamentary republics to be listed in the WEF top 10 for digital government.²⁴ This is the result of the transformation and law reform that was carried out by Estonia after it became independent in 1991, where from an early age, children were given theory and practice about technology and learned robotics.²⁵ As a comparative study, hereby table 2 figures out how Estonia's government provides legal norms in the digital age and makes every daily activity in digital mode.

Table 2. Legal Norms in the Digital Age in Estonia

No.	Legal Norm	Available	Not yet	Type of Regulation
1.	E-commerce	v		Consumer Protection Act, VAT Act and Accounting Act (EU E-Commerce Directive in 2015)
2.	Data privacy and protection	v		Estonian Personal Data Protection Act of 1996
3.	Consumer protection	v		Consumer Protection Act (EU E-Commerce Directive in 2015)
4.	Cybersecurity	v		Estonia Cybersecurity Act of 2018
5.	Digital signature	v		The Digital Signatures Act, implementation of the EU Directive in 1999
6.	Electronic transaction	v		Principles of the Estonian Information Policy of 1998
7.	Open data project	v		Principles of the Estonian Information Policy of 1998
8.	E-government	v		Principles of the Estonian Information Policy of 1998

²³ e-Estonia, "E-Identity."

²⁴ Robbins, "Myths, Values and Digital Transformation: The Exceptional Case of Estonia."

²⁵ Ronald Liive, "Raising a Tech-Savvy Nation: In Estonia, Even Kindergartens Teach Robotics," Invest in Estonia, 2022, <https://investinestonia.com/raising-a-tech-savvy-nation-in-estonia-even-kindergartens-teach-robotics/>.

9.	Digital ID for citizen	v	Principles of the Estonian Information Policy of 1998
10.	Fintech	v	Money Laundering and Terrorist Financing Prevention Act and the Creditors and Credit Intermediaries Act (under EU Directive)
11.	Digital literacy	v	Not yet regulated, but serving as a program by the Ministry of Education and Research
12.	Startups	v	Commercial Code of 1995
13.	Smart-cities	v	Not yet regulated, but it has been programmed in cities' strategy documents over the years, such as the Tallinn 2035 strategy document. ²⁶
14.	Blockchain	v	Principles of the Estonian Information Policy of 1998
15.	Artificial intelligence	v	Not yet regulated and still debatable

The data in Table 2 and Table 1 show a difference, indicating that Estonia has started law reform to face the digital era since the 1990s, while Indonesia only started it in the 2000s. This difference also creates quite a distance between Estonia and Indonesia, where Estonia is very ready to face digitalization, while Indonesia must prepare the facilities and infrastructure and prepare the supporting human resources.

D. CONCLUSION

This article found that Estonia has been leading in providing legal instruments to face the digital age since the 1990s, leaving Indonesia behind. Some legal instruments in Indonesia such as AI law, Digital ID law, and e-government law should be drafted and implemented.

E. REFERENCE

- Aditya, Zaka Firma, and Sholahuddin Al-Fatih. "Indonesian Constitutional Rights: Expressing and Purposing Opinions on the Internet." *The International Journal of Human Rights* 25, no. 9 (2021): 1395–1419. <https://doi.org/10.1080/13642987.2020.1826450>.
- Al-Fatih, Sholahuddin. *Perkembangan Metode Penelitian Hukum Di Indonesia*. 1st ed. Malang: UMM Press, 2023.
- Al-Fatih, Sholahuddin, and Ahmad Siboy. *Menulis Artikel Karya Ilmiah Hukum Di Jurnal Nasional Dan Internasional Bereputasi*. Malang: Inteligencia Media, 2021.
- Ansori, Lutfil. "Reformasi Penegakan Hukum Perspektif Hukum Progresif." *Jurnal Yuridis* 4, no. 2 (2018): 148. <https://doi.org/10.35586/v4i2.244>.

²⁶ Lill Sarv and Ralf Martin Soe, "Transition towards Smart City: The Case of Tallinn," *Sustainability (Switzerland)* 13, no. 8 (2021): 1–18, <https://doi.org/10.3390/su13084143>.

- Aslanova, Tamara. “Nõusolekuhalduse Roll Ja Tähtsus Avalikes Organisatsioonides Digitaalajastul: Juhtum Eesti Kohta (The Role and Importance of Consent Management in Public Organizations in the Digital Age: Case on Estonia).” Tallin University of Technology, 2021. <file:///Users/sholahuddinalfatih/Downloads/38b22f5547a14837aea0a48f6a7c5450.pdf>.
- Azis, Taufiq Nur. “Strategi Pembelajaran Era Digital.” *Annual Conference on Islamic Education and Social Sains (ACIEDSS 2019)* 1, no. 2 (2019): 308–18. <https://pkm.uika-bogor.ac.id/index.php/aciedss/article/view/512>.
- Azzopardi, Damien, Patrick Lenain, Margit Molnar, Natia Mosiashvili, and Jon Pareliussen. “Economics Department Seizing the Productive Potential of Digital Change in Estonia.” OECD Economics Department Working Papers, 2020. <https://doi.org/10.1787/18151973>.
- Chotimah, Hidayat Chusnul. “Tata Kelola Keamanan Siber Dan Diplomasi Siber Indonesia Di Bawah Kelembagaan Badan Siber Dan Sandi Negara [Cyber Security Governance and Indonesian Cyber Diplomacy by National Cyber and Encryption Agency].” *Jurnal Politica Dinamika Masalah Politik Dalam Negeri Dan Hubungan Internasional* 10, no. 2 (2019): 113–28. <https://doi.org/10.22212/jp.v10i2.1447>.
- Dick, Howard. “Why Law Reform Fails: Indonesia’s Anti-Corruption Reforms.” In *Law Reform in Developing and Transitional States*, edited by Tim Lindsey, 42–64. Routledge, 2006. <https://doi.org/10.4324/9780203962305>.
- e-Estonia. “E-Identity.” e-Estonia. Accessed January 23, 2024. <https://e-estonia.com/solutions/e-identity/id-card/>.
- Estonia, Education. “How It All Began? From Tiger Leap to Digital Society.” Education Estonia. Accessed January 23, 2024. <https://www.educationestonia.org/tiger-leap/>.
- Kelliher, Camden, Saldi Isra, Yuliantri, Zainul Daulay, Hilaire Tegan, and Feri Amsari. “Unconstitutional Authority of Indonesia’s Constitutional Court: The Resolution of Pilkada Result Disputes.” *Election Law Journal: Rules, Politics, and Policy* 18, no. 3 (2019): 297–308. <https://doi.org/10.1089/elj.2018.0535>.
- Liive, Ronald. “Raising a Tech-Savvy Nation: In Estonia, Even Kindergartens Teach Robotics.” Invest in Estonia, 2022. <https://investinestonia.com/raising-a-tech-savvy-nation-in-estonia-even-kindergartens-teach-robotics/>.
- Lindsey, Tim. “Legal Infrastructure and Governance Reform in Post-Crisis Asia: The Case of Indonesia.” In *Law Reform in Developing and Transitional States*, 1st ed. Routledge, 2006. file:///Users/sholahuddinalfatih/Downloads/Routledge_Studies_in_Development_Economics_Tim_Lindsey_Law_Reform.pdf.
- OECD. “Estonia E-Government and the Creation of a Comprehensive Data Infrastructure for Public Services and Agriculture Policies Implementation.” Digital Opportunities for Better Agricultural Policies, 2019. <https://doi.org/10.1787/571a0812-en>.
- Ramadhani, Fariza. “Dinamika UU ITE Sebagai Hukum Positif Di Indonesia Guna Meminimalisir Kejahatan Siber.” *Kultura: Jurnal Ilmu Hukum, Sosial, Dan Humaniora* 1, no. 1 (2023): 89–97. <https://doi.org/10.572349/kultura.v1i1.98>.
- Robbins, Mark. “Myths, Values and Digital Transformation: The Exceptional Case of Estonia,” 2018. <https://www.researchgate.net/profile/Mark-D->

Robbins/publication/327424543_Myths_Values_and_Digital_Transformation_The_Exceptional_Case_of_Estonia/links/5b8ea6cc92851c6b7ebff54/Myths-Values-and-Digital-Transformation-The-Exceptional-Case-of-Estonia.pdf.

- Sarv, Lill, and Ralf Martin Soe. "Transition towards Smart City: The Case of Tallinn." *Sustainability (Switzerland)* 13, no. 8 (2021): 1–18. <https://doi.org/10.3390/su13084143>.
- Suntana, Ija, and Tedi Priatna. "Four Obstacles to the Quality of Constitutional Law Learning in Indonesia." *Heliyon* 9, no. 1 (2023): e12824. <https://doi.org/10.1016/j.heliyon.2023.e12824>.
- Surbakti, Natangsa. "Filsafat Hukum Perkembangan Pemikiran Dan Relevansinya Dengan Reformasi Hukum Indonesia." *Surakarta: Universitas Muhammadiyah Surakarta*, 2010.