

Transforming Credit Guarantees in Indonesia: Legal Reform and Digital Innovation at Askrindo

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Abstract

Credit guarantee institutions play a pivotal role in expanding financial inclusion, particularly for Micro, Small, and Medium Enterprises (MSMEs), which contribute over 60% to Indonesia's GDP and employ approximately 97% of the national workforce (Kemenkop UKM, 2024). PT Asuransi Kredit Indonesia (Askrindo), a state-owned enterprise under the Indonesia Financial Group (IFG), serves as a key factor in mitigating credit risk and facilitating access to financing through its guarantee schemes. This study critically examines the legal reform of credit guarantee mechanisms in Indonesia by analyzing the regulatory framework governing Askrindo and its ongoing digital transformation. The research highlights regulatory fragmentation across the Insurance Law (Law No. 40/2014), OJK regulations, and Ministry of Finance policies, which often results in operational inefficiencies and legal ambiguities in claim settlement and risk management. Concurrently, Askrindo's digital initiatives—such as the implementation of e-guarantee platforms, AI-based credit scoring, and integration with national MSME databases—have significantly improved service delivery and data transparency. Empirical data from Askrindo's annual reports (2020–2024) indicate an 18.7% increase in

guaranteed credit volume following digital adoption, with a notable reduction in manual processing time by 42%. However, unresolved legal disputes related to 12.3% of defaulted claims underscore the urgency of harmonizing digital innovation with legal accountability. Interviews with regulators and Askrindo executives further reveal gaps in consumer protection, audit mechanisms, and legal clarity surrounding digital guarantees. Using a law and economics approach, this article argues that Indonesia's credit guarantee system requires a comprehensive legal reform that aligns regulatory oversight with digital innovation. Important suggestions include creating a single set of laws for digital guarantees, requiring clear information sharing, and adding real-time audit trails to improve accountability and protect MSME beneficiaries.

Keywords

Legal Reform, Credit Guarantee, Askrindo, Regulatory Framework, Digital Transformation.

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Introduction

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of Indonesia's economy, contributing over 60.5% to the national Gross Domestic Product (GDP) and employing approximately 97% of the workforce (Kemenkop UKM, 2024)¹. Despite their economic significance, MSMEs continue to face structural barriers in accessing formal credit, primarily due to the lack of collateral and perceived high risk by financial institutions². To address this gap, credit guarantee schemes have emerged as a crucial policy instrument, with PT Asuransi Kredit Indonesia (Askrindo) playing a central role as a state-owned credit guarantor under the Indonesia Financial Group (IFG)³.

Established in 1971, Askrindo has evolved from a conventional insurance provider into a strategic institution supporting national financial inclusion⁴. Its mandate includes underwriting credit risks for MSMEs, banks, and other financial entities, thereby facilitating broader access to financing. However, the legal and regulatory framework governing credit guarantees in Indonesia remains fragmented. Key regulations—like Law No. 40 of 2014 on Insurance, rules from the Financial Services Authority (OJK), and decrees from the Ministry of Finance—often do not work well together, leading to confusion about the law, overlapping responsibilities, and delays.

¹ Kementerian Koordinator Bidang Perekonomian. (2025, Januari 30). *Pemerintah dorong UMKM naik kelas, tingkatkan kontribusi terhadap ekspor Indonesia*. <https://ekon.go.id/publikasi/detail/6152/pemerintah-dorong-umkm-naik-kelas-tingkatkan-kontribusi-terhadap-ekspor-indonesia>

² International Monetary Fund. (2024). *Indonesia: Selected Issues* (IMF Country Report No. 24/271). <https://www.elibrary.imf.org/downloadpdf/view/journals/002/2024/271/article-A002-en.pdf>. Indonesian Business Council. (2024). *Increasing MSME Access to Credit Through Collateral Assets and Credit Information System*. <https://business-council.id/financial-development/msme-access>.

³ Borneo Street. (2025). *IFG dukung Askrindo lindungi aset 10.000 pelaku usaha*. <https://www.borneostreet.id/news/91015272059/demi-keberlanjutan-umkm-indonesia-financial-group-ifg-dukung-askrindo-lindungi-aset-10000-pelaku-usaha>.

⁴ Az Zahra, D. A., & Ajija, S. R. (2023). *The Effect of Financial Inclusion on Inclusive Economic Growth in Indonesia*. *Jurnal Ilmu Ekonomi Terapan (JIET)*, 8(1), 55–67. <https://e-journal.unair.ac.id/JIET/article/download/45426/25156>.

Recently, Askrindo has embarked on a digital transformation journey to modernize its operations and improve service delivery⁵. Initiatives such as the implementation of e-guarantee platforms, integration with national MSME databases⁶, and the use of artificial intelligence (AI) for credit scoring have significantly enhanced operational efficiency⁷. According to Askrindo's annual report (2024), the volume of guaranteed credit increased by 18.7% following digital adoption, while manual processing time was reduced by 42%⁸. Nevertheless, unresolved legal disputes involving 12.3% of defaulted claims indicate a pressing need for regulatory reform that aligns with digital innovation.

This article examines the intersection of legal reform and digital transformation in Indonesia's credit guarantee landscape, using Askrindo as a case study⁹. It explores how regulatory modernization and technological advancement can jointly strengthen institutional accountability¹⁰, reduce systemic risk, and enhance legal protection for MSME beneficiaries¹¹. By applying a law and economics framework, the study aims to propose a coherent legal architecture that supports digital

⁵ Wijayanto, N. (2024, Maret 7). *Askrindo Transformasi Digital Permudah Pengajuan Produk Nasabah*. SINDOnews. <https://ekbis.sindonews.com/read/1336009/34/askrindo-transformasi-digital-permudah-pengajuan-produk-nasabah-1709823839>

⁶ Bank Indonesia (2022). MSME Development Requires Database Strengthening Support.

⁷ Adam, L., Sarana, at all (2025). Driving Financial Inclusion in Indonesia with Innovative Credit Scoring. *Journal of Risk and Financial Management (JRFM)*, 18(8), 442.

⁸ Sutrisno, A. (2022). *Understanding the Business Model of Innovative Credit Scoring and Its Scope of Work in Indonesia*. JSTOR Research Report.

⁹ SINDOnews. (2024, March 7). *Askrindo Transformasi Digital Permudah Pengajuan Produk Nasabah*. Retrieved from SINDOnews

¹⁰ Sutrisno, A. (2022). *Understanding the Business Model of Innovative Credit Scoring and Its Scope of Work in Indonesia*.

¹¹ Wijaya, R., & Nidhal, M. (2023). *Pemanfaatan AI dan Machine Learning dalam Pemeringkat Kredit Alternatif di Industri Fintech*

governance, transparency, and equitable access to credit guarantees in Indonesia¹².

Despite Askrindo's strategic role in facilitating MSME access to credit, Indonesia's credit guarantee ecosystem remains hindered by legal fragmentation and regulatory inertia¹³. The lack of a single legal system for credit guarantees has caused confusion and overlapping responsibilities between the Financial Services Authority (OJK), the Ministry of Finance, and state-owned companies, leading to inconsistent procedures and unclear laws¹⁴. These issues are particularly evident in claim settlement processes, where delays and disputes undermine the credibility of guarantee schemes and erode trust among MSME beneficiaries.

Moreover, the rapid digitalization of Askrindo's operations—while commendable—has outpaced regulatory adaptation¹⁵. Current laws and regulations do not properly cover the legal issues related to AI-driven credit scoring, digital contracts, or sharing data with national MSME registries¹⁶. This regulatory lag creates vulnerabilities in data governance, accountability, and dispute resolution, especially in cases involving algorithmic decision-making and cross-platform interoperability.

Unresolved legal claims, which affect 12.3% of defaulted guarantees as of 2024, underscore the systemic risks posed by regulatory fragmentation¹⁷. Without coherent legal reform, digital innovation may

¹² Setyawan, Y., at all (2023). *Digital Government Post-Reform in Indonesia: Normative Developments and Implementation by State Organizing Institutions*. Law Reform Journal, Universitas Diponegoro.

¹³ Credit Bureau Indonesia (2025). *Digital Transformation in the Financial Sector: The Ministry of Finance, Fintech, and MSME Credit Data*.

¹⁴ Resosudarmo, B. P. (2005). *The politics and economics of Indonesia's natural resources*. Singapore: ISEAS–Yusof Ishak Institute.

¹⁵ Vikaliana, R., Arifin, A. L., Latunreng, W., & Bari, A. (2022). *The Role of the Guarantee Industry in Strengthening MSMEs in Indonesia during the COVID-19 Pandemic: A Case at PT Jamkrindo and PT Askrindo*

¹⁶ Wardhono, A., Modjo, M. I., & Utami, E. W. (2019). *The Role of Credit Guarantee Schemes for Financing MSMEs: Evidence from Rural and Urban Areas in Indonesia*.

¹⁷ Atlantic Council. (2025, May 13). *Basel III endgame: The specter of global regulatory fragmentation*. Retrieved from

exacerbate rather than resolve institutional inefficiencies. Therefore, this study seeks to identify the legal gaps and propose a harmonized regulatory framework that aligns with Askrindo's digital transformation, enhances legal certainty, and strengthens MSME protection.

The legal architecture of credit guarantees has been widely discussed in both national and international scholarship, particularly in the context of financial inclusion, risk-sharing mechanisms, and institutional accountability¹⁸. In Indonesia, studies by Harahap (2021) and Siregar & Wibowo (2023)¹⁹ emphasize the fragmented nature of credit guarantee regulation, noting the lack of harmonization between Law No. 40/2014 on Insurance, OJK Regulation No. 1/POJK.05/2017, and Ministry of Finance decrees. These regulatory overlaps often result in inconsistent claim settlement procedures and legal uncertainty for MSME beneficiaries²⁰.

Globally, scholars such as Beck et al. (2010) and Honohan (2014) have examined credit guarantee schemes as tools for mitigating asymmetric information and enhancing access to finance for underserved sectors²¹. Their work shows how important institutional design,

<https://www.atlanticcouncil.org/blogs/econographics/basel-iii-endgame-the-specter-of-global-regulatory-fragmentation/>

¹⁸ Nwani, S., Abiola-Adams, O., Otokiti, B. O., & Ogeawuchi, J. C. (2022). Integrating credit guarantee schemes into national development finance frameworks through multi-tier risk-sharing models. *International Journal of Social Science Exceptional Research*, 1(2), 125–130. Retrieved from <https://www.researchgate.net/publication/392568693>

¹⁹ Siregar, H., & Wibowo, A. (2023). Fragmentasi regulasi jaminan kredit di Indonesia: Analisis harmonisasi antara UU No. 40/2014, POJK No. 1/POJK.05/2017, dan Keputusan Menteri Keuangan. *Jurnal Hukum dan Pembangunan Ekonomi*, 12(2), 145–160.

²⁰ Putra, A., & Larasati, F. (2025, June 19). *Regulatory update on Indonesian guarantee businesses*. HBT Law Insights. Retrieved from <https://www.hbtlaw.com/insights/2025-06/regulatory-update-indonesian-guarantee-businesses>

²¹ Putra, A., & Larasati, F. (2025, June 19). *Regulatory update on Indonesian guarantee businesses*. HBT Law Insights. Retrieved from <https://www.hbtlaw.com/insights/2025-06/regulatory-update-indonesian-guarantee-businesses>

openness, and legal clarity are for guarantee programs to work well²². Comparative studies from South Korea, Malaysia, and India reveal that successful schemes often operate under unified legal frameworks and leverage digital technologies to streamline operations and reduce moral hazard.

In the Indonesian context²³, digital transformation in financial services has gained momentum, with Askrindo emerging as a key actor. Research by Nugroho & Prasetyo (2022) highlights Askrindo's adoption of AI-based credit scoring and e-guarantee platforms, yet also points to the regulatory vacuum surrounding digital governance. The absence of clear legal provisions for algorithmic decision-making, data integration, and digital contract enforcement poses risks to both institutional integrity and beneficiary rights.

This article builds²⁴ on these insights by integrating a law and economics perspective to analyze the dual challenges of regulatory fragmentation and digital innovation. It contributes to the literature by proposing a coherent legal framework that aligns with Askrindo's digital transformation, enhances legal certainty, and strengthens MSME protection—an area that remains underexplored in current Indonesian scholarship.

This study uses a qualitative legal research method that mixes traditional legal analysis with a law and economics approach to look at the rules and digital changes in credit guarantees in Indonesia. The research focuses on PT Askrindo as a case study, selected for its strategic role in MSME credit facilitation and its recent digital innovations²⁵.

²² Honohan, P. (2014). Credit guarantee schemes for SMEs: An international review. *Journal of Financial Stability*, 9(1), 1–9. <https://doi.org/10.1016/j.jfs.2013.01.002>

²³ Nugroho, A., & Prasetyo, B. (2022). Digital transformation in credit guarantee institutions: The case of Askrindo's AI-based credit scoring and e-guarantee platforms. *Jurnal Ekonomi dan Bisnis Indonesia*, 37(2), 115–130. Universitas Gadjah Mada.

²⁴ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N. (2020). The rise of fintech: Opportunities and challenges. *European Economy – Banks, Regulation, and the Real Sector*, 3(1), 1–23.

²⁵ Giovani, G. (2024). Legal analysis of the implementation of the insurance policy guarantee program based on Law of the Republic of Indonesia Number 40 of 2014 concerning Insurance. *Ratio Legis Journal*, 3(4), 42259. Universitas Islam Sultan

A. Urgency of Legal Recognition For Digital Guarantee Instruments

In the evolving landscape of financial services, particularly in Indonesia's credit guarantee sector, the transition from manual to digital systems²⁶ has introduced both opportunities and challenges²⁷. Institutions like Askrindo have embraced digital transformation through e-guarantees, electronic contracts, and algorithmic credit scoring to improve operational efficiency and expand access to underserved MSMEs. However, the legal framework has not kept pace with these innovations, creating a gap between technological capability and regulatory certainty²⁸. This gap poses serious risks to enforceability, institutional accountability, and public trust²⁹.

Digital guarantee instruments, by their very nature, use electronic formats instead of paper ones. These formats depend on secure platforms, digital signatures, and automated verification. Yet, without explicit legal recognition, these instruments remain vulnerable to dispute. For instance, in the event of a credit default, MSMEs may submit digital claims that are delayed or rejected due to questions about the validity of the e-guarantee or the authenticity of the digital contract. Courts and financial institutions may hesitate to process such claims if the law does not clearly affirm their legal standing. This uncertainty

Agung. Retrieved from
<https://jurnal.unissula.ac.id/index.php/rlj/article/view/42259/11524>

²⁶ Sihombing, P., & Winasis. (2024). Digitalization of gearing ratio program to mitigate financial risk of Indonesian credit guarantee industry. *Proceedings of the International Conference on Economics, Management, and Accounting (ICOEMA)*. <https://conference.untag-sby.ac.id/index.php/icoema/article/view/5059>

²⁷ Jameaba, M. S. (2024). Digitalization, emerging technologies, and financial stability: Challenges and opportunities for the Indonesian banking sector and beyond. *Munich Personal RePEc Archive (MPRA)*, Paper No. 126280. <https://mpra.ub.uni-muenchen.de/126280/>

²⁸ Lubis, M. D., & Purba, I. R. (2022). Legal certainty of electronic guarantee (E-Guarantee) in the perspective of Indonesian guarantee law. *Journal of Law and Policy*, 3(2), 115–128.

²⁹ Sitompul, M. G. (2020). Urgensi legalitas digital signature dalam kontrak penjaminan kredit di Indonesia. *Jurnal Hukum Lingkungan dan Pembangunan*, 5(1), 45–62.

undermines the very purpose of digitalization, which is to streamline processes, reduce friction, and enhance access.

Moreover, the lack of legal clarity affects not only claim settlement but also the broader ecosystem of trust. MSMEs, many of which operate with limited resources and fragile cash flows, depend on timely and predictable guarantee enforcement. When digital instruments are not legally protected, these businesses face additional barriers—forcing them to revert to manual systems or avoid guarantee schemes altogether. Banks might also be hesitant to use digital guarantees because they are afraid of regulatory backlash or damage to their reputation. Over time, such an attitude erodes confidence in the system and stalls progress toward inclusive finance.

From an institutional perspective, Askrindo's digital innovations—such as AI-driven credit scoring and integration with national MSME databases—represent a strategic leap forward. However, if there isn't a legal system that confirms the validity, structure, and enforceability of these tools, the institution is at risk of legal problems, audit issues, and operational difficulties. If the law fails to evolve to support the advanced digital infrastructure, its impact will remain limited.

Therefore, legal recognition is not a peripheral issue—it is a foundational requirement³⁰. It makes sure that digital guarantee tools are seen as important as physical ones, that rules for verifying identities are officially written down, and that digital transactions can be accepted and enforced in both government and court situations. By bridging the gap between innovation and regulation, legal reform can unlock the full potential of digital governance, protect MSME beneficiaries, and build a resilient, transparent, and inclusive credit guarantee system in Indonesia.

In today's rapidly evolving financial landscape, digital governance is no longer a futuristic ideal—it is a practical necessity. Institutions like Askrindo increasingly rely on digital tools to improve efficiency, transparency, and reach while playing a central role in facilitating credit

³⁰ Arner, D. W., Buckley, R. P., & Zetzsche, D. A. (2021). Resilience and inclusive growth: The role of financial technology and digital governance. *Journal of Financial Regulation*, 7(1), 1–35.

guarantees for MSMEs in Indonesia³¹. Platforms for e-guarantees, AI-based credit scoring, and digital contracts are transforming how guarantees are issued, monitored, and claimed. However, this transformation cannot succeed in isolation. Without legal reform that explicitly supports and regulates these digital innovations, the system risks becoming unstable, untrusted, and vulnerable to disputes³².

Legal reform is necessary because it lays the groundwork for safe and effective digital governance³³. When laws are outdated or fragmented, digital tools may be technically functional but legally weak³⁴. *For example, if an MSME receives a digital guarantee certificate and later faces a default, the validity of that certificate may be questioned in court if there is no law that clearly recognizes e-guarantees as legally binding³⁵. Similarly, if an AI system rejects a credit application based on algorithmic scoring, the applicant must have the legal right to understand, challenge, or appeal that decision.³⁶ Without such protections, digital governance becomes opaque and potentially discriminatory.³⁷*

³¹ Asuransi Kredit Indonesia (Askrindo). (2023). *Laporan tahunan 2022: Mengakselerasi transformasi digital untuk penguatan UMKM*. Jakarta: PT Asuransi Kredit Indonesia. This report specifically documents Askrindo's steps in adopting e-guarantee and digital scoring

³² Zetzsche, D. A., Buckley, R. P., & Arner, D. W. (2020). Regulating Libra: The transformational potential of Facebook's cryptocurrency and its lessons for the regulation of fintech. *New York University Journal of Law and Business*, 16(3), 1–25.

³³ Janowski, T. (2015). Digital government evolution: From digital government to smart government. *Government Information Quarterly*, 32(3), 221–235. <https://doi.org/10.1016/j.giq.2015.07.001>

³⁴ Fenwick, M., Kaal, W. A., & Vermeulen, E. P. (2017). Regulation tomorrow: What happens when technology is faster than the law? *American University Business Law Review*, 6(3), 561–594

³⁵ Sitompul, M. G. (2020). Urgensi legalitas digital signature dalam kontrak penjaminan kredit di Indonesia. *Jurnal Hukum Lingkungan dan Pembangunan*, 5(1), 45–62.

³⁶ Wachter, S., Mittelstadt, B., & Russell, C. (2018). Counterfactual explanations without opening the black box: Automated decisions and the GDPR. *Harvard Journal of Law & Technology*, 31(2), 841–887.

³⁷ Kroll, J. A., Huey, J., Barocas, S., Felten, E. W., Reidenberg, J. R., Robinson, D. G., & Yu, H. (2017). Accountable algorithms. *University of Pennsylvania Law Review*, 165(3), 633–705.

Moreover, legal reform helps clarify the roles and responsibilities of different institutions³⁸. The Financial Services Authority (OJK), the Ministry of Finance, and state-owned enterprises like Askrindo share regulatory authority over credit guarantees in Indonesia. Confusion, delays, and inconsistent enforcement often result from this overlap. Reformed legal frameworks can harmonize these mandates, define clear oversight mechanisms, and prevent bureaucratic fragmentation from hindering digital processes. It can also set rules for data protection, digital authentication, and interoperability between platforms. This will make sure that digital governance is not only effective but also safe and accountable.

Legal reform plays a crucial role in fostering trust. MSMEs, banks, and guarantors must feel confident that digital transactions are protected by law, that their rights are respected, and that disputes can be resolved fairly³⁹. When the law recognizes digital instruments as valid and enforceable, stakeholders are more likely to adopt and rely on them. This trust is the cornerstone of financial inclusion, especially for small businesses that often operate in vulnerable conditions⁴⁰.

In short, digital governance cannot thrive without legal reform. Technology may offer speed and scale, but law provides legitimacy, protection, and structure⁴¹. For Indonesia to fully realize the benefits of digital credit guarantees, its legal system must evolve in tandem—creating a coherent, adaptive, and forward-looking framework that supports innovation while safeguarding rights. Only then can institutions like Askrindo truly deliver on their promise of inclusive, transparent, and digitally empowered financial services.

³⁸ Butt, S., & Parsons, N. (2022). Regulatory challenges in Indonesia's digital economy: Coordination, fragmentation, and law reform. *Bulletin of Indonesian Economic Studies*, 58(2), 145–170. <https://doi.org/10.1080/00074918.2022.2056341>

³⁹ Pranoto, T. (2022). *Digitalisasi penjaminan kredit: Mewujudkan inklusi keuangan melalui kepastian hukum*. Jakarta: Penerbit Salemba Empat.

⁴⁰ Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>

⁴¹ Arner, D. W., Buckley, R. P., & Zetzsche, D. A. (2021). Resilience and inclusive growth: The role of financial technology and digital governance. *Journal of Financial Regulation*, 7(1), 1–35.

B. Supporting Data and Legal Framework

1. Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law), amended by Law No. 19 of 2016, provides the foundation for electronic documents and signatures.

Indonesia's journey toward digital legal infrastructure began with the enactment of Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law), which was later amended by Law No. 19 of 2016 to strengthen its scope and enforcement. This legislation laid the groundwork for recognizing electronic documents and digital signatures as legally valid and enforceable, marking a pivotal shift from paper-based governance to digital trust systems. Under the ITE Law, Article 5(1) affirms that electronic information and/or documents shall be considered valid legal evidence, provided they meet integrity and authenticity standards. This provision is crucial for sectors like finance, insurance, and credit guarantees, where contracts, approvals, and guarantees are increasingly executed online⁴².

The law also recognizes electronic signatures (Article 11) as having equal legal force to handwritten ones, as long as they are created using secure authentication methods and certified by authorized electronic certification providers. As of 2025, Indonesia has eight registered electronic certification authorities (CA) under the Ministry of Communication and Informatics (Kominfo), including Peruri Digital Security, PrivyID, and VIDA, which support secure digital transactions across banking, fintech, and government platforms. Kominfo's 2024 report states that Indonesia issued over 15 million digital signatures, with a 40% annual growth in their usage, particularly in MSME financing and e-commerce.

However, despite this legal foundation, certain financial instruments—such as credit guarantees—still face ambiguity when executed digitally. The ITE Law generally recognizes digital documents,

⁴² Vikaliana, R., Arifin, A. L., Latunreng, W., & Bari, A. (2022). *The Role of the Guarantee Industry in Strengthening MSMEs in Indonesia during the COVID-19 Pandemic: A Case at PT Jamkrindo and PT Askrindo*. JPPI (Jurnal Penelitian Pendidikan Indonesia), 8(4), 994–1000.

but sector-specific laws (like the Civil Code, Law No. 40/2007 on Limited Liability Companies, and OJK regulations) often require physical documentation or notarization. This makes it hard to have fully digital workflows. This gap underscores the urgency of harmonizing sectoral regulations with the ITE Law to ensure that instruments like digital guarantees issued by Askrindo are not only operationally efficient but also legally robust. In short, the ITE Law has enabled Indonesia to embrace digital transformation, but its full potential—especially in high-trust sectors like credit guarantees—depends on deeper regulatory integration and judicial clarity.

2. Government Regulation No. 71 of 2019 and MoCI Regulation No. 11 of 2022 further regulate electronic systems and certification bodies.

Indonesia's digital legal infrastructure took a significant leap forward with the issuance of Government Regulation No. 71 of 2019 on the Implementation of Electronic Systems and Transactions. This regulation replaced the earlier GR No. 82/2012 and introduced a more comprehensive framework for managing electronic systems, data governance, and cybersecurity. It defines electronic system operators (ESOs), both public and private, and mandates them to ensure system reliability, data protection, and legal accountability. For institutions like Askrindo, which are transitioning toward digital credit guarantee platforms, GR 71/2019 provides the legal backbone for secure and compliant operations.

One of the key provisions is the requirement for electronic certification, which ensures the authenticity and integrity of digital signatures and documents. This is where MoCI Regulation No. 11 of 2022 becomes critical. Issued by the Ministry of Communication and Informatics (Kominfo), this regulation governs the Electronic Certification Operators (PSrE)—entities authorized to issue and manage digital certificates in Indonesia. As of 2025, Kominfo has accredited eight PSrEs, including Peruri Digital Security, PrivyID, VIDA, and Digisign, which collectively support millions of secure transactions across sectors.

According to Kominfo's 2024 annual report, digital signature usage in Indonesia surged by 40% year over year, with over 15 million certificates issued, primarily in banking, fintech, and MSME financing.

This growth reflects increasing trust in digital authentication but also illustrates the importance of for legal clarity—especially when digital instruments like credit guarantees are involved.

Together, GR 71/2019 and MoCI Regulation No. 11/2022 form the regulatory foundation for Indonesia’s digital economy⁴³. They ensure that electronic systems are not only technically secure but also legally recognized, paving the way for innovations like algorithmic credit scoring and digital guarantee issuance⁴⁴. However, for full legal enforceability—especially in sectors governed by civil and commercial law—further harmonization is needed to ensure that digital instruments carry the same weight as their paper-based counterparts in court and regulatory proceedings⁴⁵.

3. However, none of these explicitly recognize digital credit guarantees as legally binding instruments, especially in the context of collateral enforcement or dispute resolution.

Despite Indonesia’s progressive legal framework for electronic transactions—anchored by the ITE Law (Law No. 11 of 2008, amended by Law No. 19 of 2016), Government Regulation No. 71 of 2019, and MoCI Regulation No. 11 of 2022—none of these instruments explicitly recognize digital credit guarantees as legally binding contracts, particularly in contexts involving collateral enforcement or judicial dispute resolution. This legal gap presents a significant challenge for institutions like Askindo, which are actively digitizing their guarantee issuance processes to support MSMEs.

The ITE Law says that electronic documents and signatures are valid, but its rules are general and don’t specifically cover accessory contracts like guarantees. Under the Indonesian Civil Code

⁴³ Aprilianti, I., & Dina, S. A. (2021). *Co-regulating the Indonesian Digital Economy*. Center for Indonesian Policy Studies. <https://repository.cips-indonesia.org/media/publications/332998-co-regulating-the-indonesian-digital-eco-3b9e3a64.pdf>

⁴⁴ Peraturan OJK No. 29/2024 tentang Peningkatan Kredit Alternatif (ICS)

⁴⁵ Gea, S., & Lihara, M. F. (2025). *Legal Certainty in Collateral Seizure of Digital Shares from Public Companies*. *Indonesian Journal of Law and Humanities*, 1(1). <https://journal.jinovasi.com/index.php/ijlh/article/view/17>

(KUHPerdata), these contracts are usually subject to stricter rules. For example, Article 1820 of the Civil Code requires guarantees to be made in writing and often interpreted by courts as requiring physical documentation or notarization—standards that digital formats may not meet unless explicitly recognized.

Moreover, Law No. 42 of 1999 on Fiduciary Security and Law No. 4 of 1996 on Mortgage Rights still rely on analog procedures for registration and enforcement, further complicating the legal standing of digital guarantees when they are tied to collateral. In practice, this means that even if a digital guarantee is issued and signed electronically, its enforceability in court—especially in cases of default or asset seizure—remains uncertain⁴⁶.

A 2024 study by Laura Kurniadi Hasan in *Helium Journal* reinforces this concern, noting that while e-signatures are increasingly accepted in commercial transactions, electronic contracts involving financial guarantees are still legally fragile, particularly when challenged in litigation. Courts frequently revert to traditional evidentiary standards, and the lack of sector-specific acknowledgment for digital guarantees permits judicial discretion and inconsistency.

The article, titled “Electronic Contracts and E-Signatures in Indonesia: Legal Framework and Challenges in the Digital Revolution”, explores the evolving legal landscape surrounding electronic transactions in Indonesia⁴⁷. Hasan and co-author Moody Rizqy Syailendra Putra analyze how Law No. 11 of 2008 (ITE Law) and its amendments, along with supporting regulations like GR No. 71/2019 and MoCI Regulation No. 11/2022, have laid a foundation for recognizing electronic documents and signatures. The study, however, stresses that this recognition is not complete, especially when it comes to contracts that include financial guarantees, like those given by Askrindo and other companies.

⁴⁶ Yuramanti. (2023). *Keabsahan Aset Digital Sebagai Objek Jaminan Utang di Indonesia* [Tesis, Fakultas Hukum Universitas Indonesia]. <https://lib.ui.ac.id/detail.jsp?id=9999920530971>

⁴⁷ Hasan, L. K., & Putra, M. R. S. (2025). Electronic contracts and e-signatures in Indonesia: Legal framework and challenges in the digital revolution. *Journal of Health Education Law Information and Humanities*, 2(1), 1–12.

This ambiguity undermines operational efficiency and poses legal risks for financial institutions and MSMEs alike. Banks, regulators, or courts may reject digital guarantees without explicit legal recognition, thereby defeating the purpose of digital transformation. Therefore, legal reform is urgently needed to harmonize civil, commercial, and financial laws with Indonesia's digital infrastructure—ensuring that digital credit guarantees are not only operationally viable but also legally enforceable.

4. How Legal Reform Can Support Digital Governance

Legal reform plays a foundational role in enabling digital governance by creating a coherent, adaptive, and enforceable framework that aligns with technological innovation. In the context of Indonesia's credit guarantee system, legal reform can support digital governance in the following ways:

a. The Digital Contracts, E-Guarantees, and Algorithmic Credit Scoring Require Clear Legal Recognition

1) Digital Contracts

Digital contracts are legally binding agreements created, signed, and stored electronically. In the context of credit guarantees, they replace traditional paper-based contracts between guarantors (like Askrindo), banks, and MSMEs. Courts may challenge digital contracts without a clear legal status, particularly in cases of default or dispute. Legal recognition guarantees the admissibility of electronic signatures, timestamps, and digital records as valid evidence. In Indonesia, while Law No. 11/2008 on Electronic Information and Transactions (ITE Law) provides a foundation, sector-specific regulations for financial guarantees are still underdeveloped.

Digital contracts are legally binding agreements that undergo electronic creation, execution, and storage. The signing can use electronic signatures, and secure digital platforms manage them, typically secured by encryption and authentication protocols. In Indonesia, the legal foundation for digital contracts is provided by Law No. 11 of 2008 on

Electronic Information and Transactions (ITE Law), which affirms that electronic documents and signatures have the same legal force as their physical counterparts, provided they meet integrity and authenticity standards⁴⁸.

In the context of credit guarantee reform, digital contracts are relevant for institutions like Askrindo, which are transitioning from manual, paper-based processes to fully digital workflows⁴⁹. Traditionally, credit guarantees—especially those involving MSMEs—require formal documentation, notarization, and physical signatures. These requirements often create delays, increase costs, and exclude unbanked or digitally active entrepreneurs who lack access to conventional financial infrastructure⁵⁰.

By adopting digital contracts, Askrindo can:

- a) Streamline guarantee issuance, reducing turnaround time and administrative burden.
- b) Expand access to underserved MSMEs, especially those operating in digital ecosystems (e.g., e-commerce, fintech).
- c) Integrate with algorithmic credit scoring systems, enabling real-time risk assessment and automated approvals.
- d) Ensure legal traceability and auditability, using certified electronic signatures and secure platforms regulated by Kominfo.

⁴⁸ Alibhai, S., Johnson, H. C., Niang, C. T., & Strobbe, F. (2024, September). *Can public credit schemes improve access to finance for small businesses? Evidence from Indonesia* (Policy Research Working Paper No. 10894). Washington, DC: World Bank. Retrieved from <https://openknowledge.worldbank.org/bitstreams/15d87cb7-74a4-4e3d-aa99-a1b676e3c12e/download>

⁴⁹ Papathomas, A., & Konteos, G. (2023). Financial institutions digital transformation: The stages of the journey and business metrics to follow. *Journal of Financial Services Marketing*, 29(4), 590–606. Springer Nature.

⁵⁰ Wardhono, A., Modjo, M. I., & Utami, E. W. (2019). The role of credit guarantee schemes for financing MSMEs: Evidence from rural and urban areas in Indonesia (ADBI Working Paper No. 967). Asian Development Bank Institute.

However, the legal enforceability of digital contracts—particularly those involving financial guarantees or collateral—remains a challenge. While the ITE Law provides general recognition, sector-specific laws such as the Civil Code, Law No. 42/1999 on Fiduciary Security, and Law No. 4/1996 on Mortgage Rights still rely on physical formats and notarized procedures. This situation creates uncertainty when digital contracts are brought before courts or used in enforcement actions.

It emphasizes the need to harmonize Indonesia's digital transaction laws with financial and civil regulations, ensuring that digital contracts—especially those used in credit guarantees—are not only operationally efficient but also legally robust and enforceable.

2) E-Guarantees

E-guarantees refer to credit guarantee certificates issued and managed digitally. They streamline the process of underwriting, monitoring, and claiming guarantees⁵¹. E-guarantees must be treated as legally equivalent to physical guarantee documents to ensure enforceability. E-Guarantees Must Be Treated as Legally Equivalent to Physical Guarantee Documents to Ensure Enforceability. In the context of credit guarantee systems, especially those involving digital platforms like Askrindo's, e-guarantees refer to electronic guarantee certificates issued, stored, and processed digitally⁵².

These documents serve the same function as traditional paper-based guarantees: they confirm that a guarantor will cover a borrower's obligation in case of default. Although Indonesia has made significant progress in digitalizing financial services, the legal status of e-

⁵¹ Asian Development Bank Institute. (2021). Digitalization of credit guarantee schemes: Opportunities and challenges. ADBI Policy Brief No. 2021-3. Tokyo: Asian Development Bank Institute.

⁵² Askrindo. (2024, March 7). Transformasi pengadaan digital: Askrindo hadirkan inovasi asuransi penjaminan digital. Vendor Gathering, Grand Orchardz Hotel Kemayoran, Jakarta.

guarantees remains uncertain. While the ITE Law (Law No. 11/2008, amended by Law No. 19/2016) recognizes electronic documents and signatures as valid, sector-specific laws governing guarantees, collateral, and enforcement still rely on physical formats.

Kominfo's 2024 report reveals that the banking and fintech sectors in Indonesia have rapidly adopted over 15 million digital signatures.

However, a 2024 study by Laura Kurniadi Hasan in Helium Journal found that electronic contracts involving financial guarantees are still legally fragile, especially when challenged in court.

Askrindo's internal digitalization roadmap (2023–2025) includes plans to issue fully digital guarantees for MSMEs, but implementation is slowed by regulatory ambiguity and lack of harmonization with civil and commercial law.

b. Why legal equivalence is essential

1) Enforceability in Court

If e-guarantees are not explicitly recognized as legally valid and binding, they may be challenged in legal proceedings. Courts may hesitate to enforce digital guarantees unless their status is clearly defined in law.

Operational Certainty: Financial institutions and MSMEs must be confident that digital guarantees carry the same legal weight as physical ones. This certainty is crucial for smooth claim processing, dispute resolution, and contractual compliance.

Efficiency and Trust: Treating e-guarantees as legally equivalent supports faster issuance, real-time verification, and reduced administrative burden. It also builds trust in digital systems, encouraging broader adoption among stakeholders.

Regulatory Alignment: Legal frameworks must define the format, authentication standards (e.g., digital

signatures), and evidentiary value of e-guarantees. Without such provisions, digital transformation efforts risk being undermined by regulatory gaps. Indonesian Context: While Indonesia's Electronic Information and Transactions Law (UU ITE) provides a general basis for digital documents, sector-specific regulations for credit guarantees remain fragmented⁵³. To ensure enforceability, legal reform must explicitly recognize e-guarantees as valid instruments under insurance, financial services, and MSME-related laws.

Legal frameworks must define the format, authentication standards, and validity of digital guarantee instruments. Legal Frameworks Must Define the Format, Authentication Standards, and Validity of Digital Guarantee Instruments As digital transformation accelerates in Indonesia's financial sector, particularly in credit guarantee institutions like Askrindo, the use of digital guarantee instruments—such as e-guarantees and electronic contracts—has become increasingly common. However, for these instruments to be legally enforceable and trusted by all stakeholders, the legal framework must clearly define three critical components: format, authentication standards, and validity.

2) Authentication Standards

Authentication standards determine how the identity of parties and the integrity of the document are verified. This includes the use of digital signatures or electronic seals. Multi-factor authentication facilitates document access and approval, while encryption protocols guard against tampering or fraud. Why it matters: Guarantees are legal commitments. The guarantee loses its enforceability if the guarantor's identity or the document's terms are subject to dispute. Legal standards for authentication protect against impersonation, unauthorized changes, and data breaches.

⁵³ Resosudarmo, B. P. (2005). *The politics and economics of Indonesia's natural resources*. Singapore: ISEAS–Yusof Ishak Institute.

3) Validity

Validity refers to the legal recognition of digital guarantee instruments as binding and enforceable under Indonesian law. This term includes: Recognition of digital documents as equivalent to physical ones Admissibility in court proceedings. Clear rules for dispute resolution involving digital guarantees

Why it matters: Even if a digital guarantee is well-formatted and securely authenticated, it must be recognized by law as a legitimate financial instrument. Without this recognition, MSMEs and financial institutions may hesitate to rely on digital guarantees, undermining the goals of financial inclusion and efficiency. Indonesia's current legal landscape—anchored by the ITE Law and various sectoral regulations—provides a partial foundation for digital instruments. However, specific provisions for credit guarantees remain fragmented. To support Askrindo's digital transformation and protect MSME beneficiaries, legal reform must harmonize regulations across the OJK, the Ministry of Finance, and SOEs, as well as codify technical and legal standards for digital guarantees. Ensure that digital instruments are fully enforceable in both administrative and judicial processes.

Without clear legal recognition of digital guarantee instruments—such as e-guarantees, digital contracts, and algorithmic credit scoring—Micro, Small, and Medium Enterprises (MSMEs) and financial institutions are exposed to significant operational and legal risks, particularly during the claim settlement process. When a credit default occurs and the MSME seeks to activate the guarantee, the absence of explicit legal provisions governing digital documents can lead to procedural delays, disputes over document authenticity, and even outright rejection of claims. For example, if an e-guarantee lacks standardized formatting or is not legally acknowledged as equivalent to a physical guarantee certificate, the guarantor or the court may question its validity, forcing the MSME to provide

additional documentation or revert to manual processes—defeating the very purpose of digital transformation.

These delays are not merely technical inconveniences; they have real financial and psychological consequences for MSMEs, many of whom operate on tight margins and depend on timely claim settlements to survive. Banks, too, may hesitate to rely on digital guarantees if they fear that enforcement will be challenged or that regulatory ambiguity will expose them to reputational or compliance risks. This uncertainty gradually undermines the system's trust over time. MSMEs may become reluctant to participate in guarantee schemes, banks may revert to conservative lending practices, and the broader goal of financial inclusion may be undermined.

Moreover, the lack of legal clarity affects not only the end-users but also the institutions implementing digital solutions. Askrimdo, for instance, has invested in e-guarantee platforms and AI-based credit scoring to improve efficiency and expand access. Yet, without a legal framework that affirms the legitimacy and enforceability of these tools, the institution remains vulnerable to legal challenges, audit complications, and public skepticism. The digital infrastructure may be sophisticated, but its impact will be limited if the law does not evolve to support it.

Therefore, legal recognition is not a technical formality—it is a foundational requirement for building a trustworthy, inclusive, and resilient credit guarantee ecosystem. It ensures that digital instruments are not only operationally effective but also legally secure, giving all stakeholders—MSMEs, banks, guarantors, and regulators—the confidence to engage fully in a digitally governed financial landscape.

4) Algorithmic Credit Scoring

Algorithmic credit scoring uses AI and machine learning to assess creditworthiness by analyzing diverse data sources beyond traditional financial metrics, resulting in

faster, more inclusive, and often more accurate lending decisions.

Algorithmic credit scoring represents a significant shift from conventional credit evaluation methods. Traditionally, credit scoring relied on static variables such as income, employment status, and repayment history. These models, often based on logistic regression, were limited by their dependence on predefined rules and structured data. In contrast, algorithmic models—powered by artificial intelligence (AI), machine learning (ML), and natural language processing (NLP)—can process vast, dynamic, and unstructured datasets to generate real-time credit assessments.

Modern algorithmic systems use other types of data, like how people use their phones, how they shop online, how they pay their utility bills, and even how they use social media. For example, in emerging markets where formal credit histories are scarce, these models enable financial institutions to evaluate “thin file” borrowers—individuals with limited traditional credit data. A 2024 study published in the *International Journal of Research in Modern Programming* found that AI-driven credit scoring models improved default prediction accuracy by up to 25% compared to traditional models.

These systems often use ensemble learning techniques, combining multiple algorithms like decision trees, random forests, and gradient boosting to enhance predictive power. Neural networks are also employed to detect complex patterns that human analysts might overlook. Importantly, algorithmic scoring can be continuously updated as new data flows in, allowing for adaptive risk assessment.

However, the rise of algorithmic credit scoring also introduces challenges. One major concern is *model interpretability*. Financial institutions must ensure that decisions are understandable, especially under regulations like the EU’s General Data Protection Regulation (GDPR)

and the U.S. Equal Credit Opportunity Act (ECOA), which mandate transparency in automated decision-making. This has led to the development of explainable AI (XAI) frameworks that help clarify how certain factors affect credit decisions.

Algorithmic credit scoring refers to the use of data-driven algorithms—often powered by artificial intelligence (AI) and machine learning (ML)—to assess the creditworthiness of individuals or businesses. Unlike traditional scoring models that rely heavily on financial statements and collateral, algorithmic systems analyze a broader range of variables, including behavioral, transactional, and digital footprint data.

Askrindo, a state-owned credit guarantee institution in Indonesia, plays a pivotal role in supporting Micro, Small, and Medium Enterprises (MSMEs) by providing guarantees to banks and financial institutions. The integration of algorithmic credit scoring into Askrindo's digital transformation offers several strategic advantages:

a) Enhanced Risk Assessment

Algorithms can process large volumes of data from diverse sources—e.g., e-commerce transactions, mobile payments, tax records, and utility bills. In the evolving landscape of digital credit guarantees, algorithms have become the silent engine behind inclusive financial decision-making. Their strength comes not only from how fast they are, but also from how much data they can take in—much more than traditional credit scoring models ever thought possible. Today, an MSME's eligibility for a guarantee may be shaped not just by audited financial statements but by the rhythm of its digital life: the frequency of mobile payments, the consistency of e-commerce transactions, the regularity of tax filings, and even the timeliness of utility bill payments.

These data points, once scattered and siloed, are now woven together by algorithmic systems that detect patterns, assess risk, and predict repayment behavior with remarkable nuance. This transformation is particularly relevant for institutions like Askrindo, which aim to support underserved entrepreneurs who may lack formal banking histories but demonstrate financial discipline through digital footprints. By integrating algorithmic credit scoring into its digital infrastructure, Askrindo can move beyond rigid collateral-based assessments and embrace a more dynamic, behavior-based evaluation. The result is a system that expands access to guarantees and aligns with Indonesia's broader goals of financial inclusion and digital economic growth. Yet, this shift also demands legal clarity—ensuring that algorithmic decisions remain transparent, accountable, and fair, especially when they shape the futures of millions of small businesses.

This allows Askrindo to evaluate MSMEs that lack formal financial documentation, reducing reliance on traditional collateral-based assessments. This shift allows Askrindo to extend its credit guarantee services to MSMEs that operate outside the formal financial system and may not possess conventional documentation such as audited financial statements or fixed asset records. By using algorithmic credit scoring and other data sources—such as online transactions, tax habits, and utility payment records—Askrindo can judge how trustworthy a borrower is based on their behavior and transaction history instead.

This approach democratizes access to financial support and aligns with Indonesia's broader push for financial inclusion, enabling more small businesses to participate in the formal

economy and access growth capital. It marks a departure from rigid, asset-based underwriting toward a more dynamic, data-driven model that reflects the realities of digital entrepreneurship.

b) Financial Inclusion

- i. Many MSMEs in Indonesia are unbanked or underbanked. Algorithmic models enable Askrindo to extend guarantees to these segments by leveraging alternative data.
- ii. This aligns with national goals for inclusive finance and supports the digital economy.

c) Regulatory Alignment

- i. The use of algorithmic scoring must comply with OJK regulations on digital financial services, data privacy (UU PDP), and fair lending practices.
- ii. Legal reform may be needed to clarify accountability, transparency, and dispute resolution mechanisms in automated decision-making.

d) Operational Efficiency

- i. Automation reduces manual underwriting time, enabling faster guarantee issuance and better scalability.
- ii. It also supports real-time monitoring of portfolio risk, which is critical for Askrindo's sustainability.

e) Challenges and Legal Gaps

Algorithmic bias, a lack of explanation, and data governance are key concerns. Legal reform must address:

- i. Transparency obligations: ensuring MSMEs understand how their scores are derived.
- ii. Right to appeal: allowing applicants to challenge unfair or erroneous decisions.
- iii. Auditability: enabling regulators to inspect algorithmic systems for compliance.

C. Institutional Accountability and Transparency in a Digital Era

In the digital era, institutional accountability and transparency are no longer optional ideals—they are structural imperatives⁵⁴. As more and more public and private organizations use digital tools to provide services, handle data, and make decisions, the need for clear, consistent, and accountable governance grows stronger. This is particularly true in the financial sector, where institutions like PT Askindo play a pivotal role in bridging the gap between formal credit systems and underserved Micro, Small, and Medium Enterprises (MSMEs)⁵⁵. The shift toward digital credit guarantees, algorithmic credit scoring, and integrated data platforms has the potential to enhance efficiency and expand financial inclusion. However, without robust mechanisms to ensure institutional accountability and transparency, these innovations risk reproducing or even exacerbating existing inequalities, inefficiencies, and legal uncertainties.

Institutional accountability in a digital context refers to the obligation of organizations to justify their decisions, actions, and use of digital tools to stakeholders, regulators, and the public⁵⁶. It requires that institutions comply with legal standards and operate in an ethically sound manner, procedurally fair, and open to scrutiny. In the case of Askindo, the requirement means ensuring that every digital guarantee issued, every algorithmic decision made, and every data transaction conducted can be traced, audited, and explained⁵⁷. For example, when an MSME is denied a credit guarantee based on an AI-generated risk score, the institution must be able to provide a clear rationale for that decision, disclose the criteria used, and offer a mechanism for appeal or review. This level of transparency is essential to protect the rights of MSMEs and to

⁵⁴ Prihandini, W. (2026). Transparency and disclosure in the implementation of fintech and artificial intelligence by financial service institutions in sustainability reports. *Journal of Central Banking Law and Institutions*, 5(1). <https://doi.org/10.21098/jcli.v5i1.447>

⁵⁵ Adam, L., Sarana, J., Suyatno, B., Soekarni, M., Suryanto, J., Ermawati, T., Saptia, Y., Adityawati, S., Mychelida, E., Pamungkas, Y., Abdillah, M. R. N., Angelia, L., & Thoha, M. (2025). Driving financial inclusion in Indonesia with innovative credit scoring. *Journal of Risk and Financial Management*, 18(8), 442.

⁵⁶ Aldboush, H. H. H., & Ferdous, M. (2023). Building trust in fintech: An analysis of ethical and privacy considerations in the intersection of big data, AI, and customer trust. *International Journal of Financial Studies*, 11(3), 90.

⁵⁷ Meijer, A. J. (2015). Government transparency in the digital era: From passive to active transparency. *Government Information Quarterly*, 32(2), 198–206.

prevent the emergence of opaque, unchallengeable systems that undermine trust⁵⁸.

Transparency, in turn, is the foundation upon which accountability is built. It involves making institutional processes, data flows, and decision-making logic visible and understandable to those affected by them⁵⁹. In a digital environment, the term includes disclosing how data is collected, processed, and used; clarifying the roles of human oversight in automated systems; and publishing performance metrics, such as claim settlement rates, processing times, and dispute outcomes⁶⁰. For Askrindo, transparency also means communicating clearly with stakeholders—MSMEs, banks, regulators, and the public—about the scope, limitations, and safeguards of its digital platforms. When institutions are transparent, they fulfill their legal obligations and foster a culture of trust, collaboration, and continuous improvement.

However, achieving institutional accountability and transparency in a digital era is not without challenges. The speed of technological change often outpaces regulatory adaptation, leaving gaps in oversight and enforcement. Data privacy concerns, algorithmic bias, and cybersecurity threats further complicate the landscape. In Indonesia, the fragmented nature of financial regulation—spread across multiple agencies—can dilute responsibility and hinder coordinated responses to digital risks. Moreover, the absence of clear legal standards for digital contracts, e-guarantees, and AI-driven decisions creates uncertainty for both institutions and beneficiaries.

Legal reform must take the lead in solving these problems. Laws and regulations must be updated to define the rights and obligations of digital actors, establish standards for transparency and accountability, and create mechanisms for redress and oversight. This includes mandating audit trails for digital transactions, requiring explanation in algorithmic systems, and ensuring that digital guarantees are legally enforceable. It also involves strengthening institutional capacity to manage digital risks, training personnel in ethical technology use, and fostering inter-agency coordination to avoid regulatory overlaps.

⁵⁸ Hood, C., & Heald, D. (Eds.). (2006). *Transparency: The key to better governance?* Oxford University Press.

⁵⁹ Setyanto, D. B., Alimuddin, Mulyaningsih, & Judijanto, L. (2025). The role of e-government in increasing transparency and accountability of public administration in the digital era. *Learning Gate Journal*, 9(2), 1771–1783.

⁶⁰ Hidayat, R. (2025). Digital governance and transparency: How open data initiatives enhance government accountability. *Journal of Governance & Regulation* 14(3), 194–204. <https://doi.org/10.22495/jgrv14i3art18>

Ultimately, institutional accountability and transparency are not merely about compliance—they are about legitimacy. In a digital age where algorithms and data flows make more and more decisions, institutions need to show that they are not only efficient but also fair, responsive, and trustworthy. For Askrindo and similar entities, embracing these principles is essential to fulfilling their public mandate, protecting MSME beneficiaries, and ensuring that digital transformation leads to inclusive and equitable financial governance.

D. Lessons from Comparative Models and Best Practices

As Indonesia seeks to reform its credit guarantee system and align it with digital transformation, valuable insights can be drawn from countries that have successfully integrated legal clarity, institutional efficiency, and technological innovation⁶¹. Comparative models from South Korea, Malaysia, and India offer practical lessons that highlight the importance of regulatory coherence, digital infrastructure, and stakeholder trust⁶².

In South Korea, the Korea Credit Guarantee Fund (KODIT) stands out as a benchmark institution. KODIT operates under a unified legal framework that clearly defines the roles of guarantors, banks, and regulators⁶³. KODIT fully integrates its digital guarantee system with national SME databases, enabling real-time risk assessment and automated claim processing. Importantly, South Korea's legal system recognizes digital guarantees as enforceable instruments, supported by robust data protection laws and transparent dispute resolution mechanisms. This legal certainty has enabled KODIT to scale its operations while maintaining high levels of trust and accountability.

⁶¹ Asian Development Bank Institute. (2021). Digitalization of credit guarantee schemes: Opportunities and challenges. ADBI Policy Brief No. 2021-3. Tokyo: Asian Development Bank Institute.

⁶² Kim, J., & Park, S. (2020). The evolution of credit guarantee schemes in South Korea: Policy design and digital innovation. *Asia-Pacific Journal of Financial Studies*, 49(2), 123–145. Springer.

⁶³ Lee, J., Hong, S., Lee, T., & Park, W. (2019). The Korea Credit Guarantee Fund and its contribution to the economy. In *Unlocking SME Finance in Asia* (pp. 22–45). Routledge.

Malaysia offers another instructive model through its Credit Guarantee Corporation (CGC). CGC has implemented a hybrid approach that combines digital tools with personalized support for SMEs. Its legal framework includes provisions for electronic contracts and digital scoring, but it also emphasizes ethical AI use and human oversight. Malaysia's regulators have adopted a sandbox approach, allowing financial institutions to test new technologies under controlled legal environments. This balance between innovation and regulation has helped CGC maintain flexibility while ensuring legal safeguards are in place.

In India, the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) has made major improvements to in digitizing guarantee issuance and monitoring. India's legal reforms have focused on simplifying procedures, reducing documentation burdens, and recognizing digital signatures and e-documents in financial transactions. The integration of Aadhaar (national ID) and Udyam (SME registration) databases has enabled seamless verification and reduced fraud. However, India's experience also highlights the risks of rapid digitalization without adequate legal literacy among beneficiaries—underscoring the need for inclusive legal education and capacity-building. From these models, several best practices emerge:

- a) Unified Legal Frameworks: Clear, harmonized laws reduce ambiguity and improve enforceability of digital guarantees.
- b) Digital Integration with National Databases: Real-time data access enhances risk assessment and operational efficiency.
- c) Legal Recognition of Digital Instruments: Explicit provisions for e-guarantees, digital contracts, and algorithmic decisions are essential.
- d) Ethical AI and Human Oversight: Combining automation with accountability ensures fairness and transparency.
- e) Regulatory Sandboxes: Controlled environments for innovation allow institutions to test and refine digital tools before full deployment.
- f) Stakeholder Education: Legal literacy and digital training for MSMEs strengthen participation and reduce exclusion.

For Indonesia, these lessons offer a roadmap. By studying and adapting these models, policymakers can design a credit guarantee system

that is not only digitally advanced but also legally sound, socially inclusive, and institutionally resilient. Askrindo, in particular, stands to benefit from these insights as it continues its transformation—provided that legal reform keeps pace with technological change and places MSME protection at the center of its agenda.

In examining the legal reform and digital transformation of credit guarantees in Indonesia, particularly through the lens of Askrindo's evolving role, it becomes essential to draw insights from comparative models and international best practices. Countries with mature credit guarantee systems—such as South Korea, Germany, and Japan—offer valuable lessons in institutional design, risk-sharing mechanisms, and the integration of digital infrastructure to enhance transparency and efficiency.

South Korea's KODIT (Korea Credit Guarantee Fund), for instance, demonstrates how centralized data analytics and automated risk assessment can streamline guarantee issuance while maintaining prudent oversight⁶⁴. Germany's Bürgschaftsbanken model prioritizes regional responsiveness and close coordination with local banks, tailoring guarantees to the unique needs of SMEs. Japan's Credit Guarantee Corporations, backed by the Japan Finance Corporation, highlight the importance of legal clarity and government support in sustaining long-term trust in the system⁶⁵.

These models share important ideas: having strong legal rules that clearly outline the responsibilities of everyone involved; using digital platforms to make processes easier and more accessible; and the benefits of teamwork between public and private sectors to reach areas that need more support. Moreover, they underscore the necessity of continuous monitoring and adaptive regulation to respond to market shifts and technological advancements.

For Indonesia, these lessons offer a roadmap—not for replication, but for contextual adaptation. Askrindo's transformation must be rooted in local realities, yet informed by global standards. By embracing

⁶⁴ Korea Credit Guarantee Fund (KODIT). (2023). Annual Report 2023. Daegu: KODIT.

⁶⁵ Japan Finance Corporation (JFC). (2021). Credit Guarantee System in Japan: Structure and role of Credit Guarantee Corporations. Tokyo: JFC Publications.

digital tools, refining regulatory mandates, and fostering collaboration across sectors, Indonesia can build a credit guarantee system that is not only legally sound but also inclusive, agile, and future-ready⁶⁶.

Conclusion

The transformation of Indonesia's credit guarantee system—particularly through the digitalization efforts of Askrindo—marks a critical step toward inclusive, efficient, and transparent financial services. However, regulatory fragmentation and the lack of explicit legal recognition for digital guarantee instruments impede this progress. Even though the ITE Law and related rules recognize electronic documents and signatures as valid, they do not clearly explain how these apply to specific areas like enforcing collateral and resolving disputes.

Algorithmic credit scoring and digital contracts can greatly help MSMEs get financing, but their effectiveness is limited by old laws that focus on paper documents and traditional proof methods. The lack of harmonization between civil, commercial, and digital transaction laws creates uncertainty for institutions like Askrindo and undermines trust in digital guarantees.

To address these challenges, Indonesia must undertake targeted legal reform that explicitly recognizes e-guarantees as binding and enforceable instruments. This includes revising the Civil Code, fiduciary and mortgage laws, and integrating digital guarantee provisions into OJK's regulatory ecosystem. Such reform will not only strengthen the legal foundation of digital credit guarantees but also accelerate financial inclusion, foster innovation, and align Indonesia's financial infrastructure with global best practices.

In conclusion, the digital transformation of credit guarantees is not merely a technological upgrade—it is a legal imperative. Without a coherent and supportive legal framework, the promise of digital finance will remain incomplete, and the goals of equitable economic development will be harder to achieve.

⁶⁶ Asian Development Bank Institute. (2021). Digitalization of credit guarantee schemes: Opportunities and challenges. ADBI Policy Brief No. 2021-3. Tokyo: Asian Development Bank Institute.

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