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SMART CONTRACTS AND LEGAL ENFORCEABILITY

- Vidushi Vats & Shashi Bhushan[1]

Abstract:

This paper explores the intricacies of smart contracts and their legal enforceability in the context of evolving technologies and traditional legal frameworks. Smart contracts, self-executing programs on blockchain technology, offer transparency, security, and automation. The analysis compares smart contracts with traditional contracts, emphasizing differences in automation, transparency, immutability, speed, and cost-effectiveness. Challenges in enforcing smart contracts, such as ambiguity, lack of legal precedents, and technological vulnerabilities, are addressed through clear contract terms, legal involvement, and ongoing research. Mitigating risks involves smart contract audits, legal framework adaptations, and hybrid smart contracts.

The paper delves into issues specific to the Indian context, examining considerations in smart contracts, digital signature validity, jurisdiction challenges, and the transfer of intellectual property rights. Cryptocurrency use as consideration raises legal questions, exemplified by the Supreme Court overturning the RBI's circular. The transfer of intellectual property rights via smart contracts faces limitations under Indian law, illustrated by relevant case laws. As a solution, an interpretive reform of the Indian Contract Act is proposed, leveraging common law's flexibility to address technological complexities.

In conclusion, the paper advocates for a balanced approach, considering legal frameworks, technological advancements, and adaptability in navigating the intersection of smart contracts and legal enforceability.

[1] Student at Amity Law School, Amity University, Noida

Keywords: Smart Contracts, Blockchain Technology, Legal Enforceability, Traditional Contracts, Ambiguity, Legal Precedents, Technological Vulnerabilities, Smart Contract Audits, Legal Framework Adaptations, Hybrid Smart Contracts, Indian Context, Cryptocurrency, Digital Signature Validity, Jurisdiction Challenges, Intellectual Property Rights, Interpretive Reform, Common Law, Innovation.

I. Understanding Smart Contracts

Smart contracts are digital, immutable, automated contracts based on blockchain technology, in which the contracts' rules and execution instructions are written directly into self-executing programme code. Predefined processes ensure that corresponding transactions are automatically triggered when certain events occur. These transactions, in turn, are stored on a blockchain and run in a decentralised manner.

Smart contracts thus guarantee all contracting parties involved the intended and, above all, complete execution of all contract contents. Human supervision is no longer necessary, which reduces errors and provides immutability of the data and transactions executed.[2]

Functionality: Simple "if/when...then..." phrases that are encoded into code on a blockchain are how smart contracts operate. After certain criteria are satisfied and confirmed, a computer network puts the plans into action. These can be releasing money to the rightful owners, registering a car, notifying people, or issuing a ticket. After the transaction is finished, the blockchain is updated. This implies that only those parties with permission can view the outcomes, and that the transaction itself cannot be altered.

A smart contract may have as many clauses as necessary to guarantee the participants' satisfaction with the task's completion. Participants must agree on the "if/when...then..." rules that govern those transactions, investigate any potential exceptions, design a framework for resolving disputes, and decide how transactions and their data are represented on the blockchain in order to set the conditions.

[2]Understanding the Functionality and Benefits of Smart Contracts for Corporations, https://www.ftitechnology.com/resources/blog/understanding-the-functionality-and-benefits-of-smart-contracts-for corporations#:~:text=Smart%20contracts%20are%20digital%2C%20immutable,triggered%20when%20certain%20events%20occur.

A developer can then programme the smart contract; however, more and more companies using blockchain technology for business are using web interfaces, templates, and other online tools to make the process of building smart contracts easier.[3]

Key Components: A smart contract consists of several key components:

1. Participants: These are the entities that interact with the contract. Participants can be people, systems, or other smart contracts.
2. State: This is the current status of the contract. The state changes as participants interact with the contract.
3. Functions: These are the operations that the contract can perform. Functions are triggered by participants and can change the state of the contract.
4. Rules: These are the conditions that govern how the contract operates. Rules are written into the contract's code and must be satisfied for functions to be executed.

Structure of a Smart Contract: A smart contract's structure can vary depending on its purpose, but most smart contracts follow a similar structure:

1. Preamble: This section includes basic information about the contract, such as the contract's name and version.
2. State Variables: These are the variables that store the contract's state. For example, in a smart contract for a sale, there might be state variables for the buyer, seller, price, and item status.
3. Functions: This section contains the functions that the contract can perform. Functions might include actions like initiating the sale, confirming payment, and delivering the item.
4. Modifiers: These are conditions that must be met for functions to be executed. For example, a function might only be executable if the item status is 'for sale'.

[3] What are smart contracts on blockchain, IBM, https://www.ibm.com/topics/smart-contracts#:~:text=Smart%20contracts%20are%20simply%20programs,intermediary's%20involvement%20or%20time%20loss.

5. Events: These are actions that trigger updates to the contract's state. Events are logged in the blockchain, providing a transparent record of the contract's activity.

Example of a Smart Contract: To illustrate these components and structure, following is simple smart contract for a sale:

- The participants are the buyer and the seller.
- The state includes variables for the buyer, seller, price, and item status.
- The functions might include 'initiateSale', 'confirmPayment', and 'deliverItem'.
- The rules might specify that 'confirmPayment' can only be executed if the item status is 'for sale', and 'deliverItem' can only be executed if the item status is 'sold'.
- The events might include 'SaleInitiated', 'PaymentConfirmed', and 'ItemDelivered'. Each of these events would trigger an update to the item status.[4]

II. Legal Foundations of Traditional Contracts

Traditional contracts are drafted by hand or printed on paper and need each party's actual signature. They are agreements between two or more competent parties that are voluntary, thoughtful, and enforceable by law. According to the law, a contract is deemed legitimate if it comprises an offer and acceptance, a desire to establish legally binding relations between the parties, consideration that must be paid, the parties' legal capacity to act, and the parties' sincere assent. Conventional contracts are physical, written in pen, and frequently sent or received in person. Conventional contracts are still enforceable in courts as long as they satisfy the fundamental requirements of a contract, as defined by legal systems over a lengthy period of time.

Elements of a Valid Contract: Section 10 of the Indian Contract Act, 1872 lays down the following essentials which are required to make an agreement into a valid contract.

1. They are made with free consent
2. Made between two or more competent parties.

[4]The Anatomy of a Smart Contract: Key Components and Structure, https://www.linkedin.com/pulse/anatomy-smart-contract-key-components-structure-mosaia-web3/

3. Made for lawful consideration.
4. Made with a lawful object.
5. Not expressly declared to be void.

Contractual Intent: Agreements made by the parties without an intention to create a legal obligation are not enforceable by law. The law presumes that the parties in case of domestic and social agreements do not have an intention to create a legal obligation. Illustration: A promised B to come over for lunch at his place but due to some work he couldn't make it. B cannot sue A, as the agreement between them was not made with the intention to create a legal obligation.

In the case of Balfour v. Balfour (1919) 2K.B. 571, A husband agreed to pay his wife a certain amount as maintenance every month while he was abroad. Husband failed to pay the promised amount. The wife sued him for the recovery of the amount. As it was a social agreement she cannot recover the amount as the parties did not intend to create any legal obligations.

The test of the intention of creating legal relations is objective. What matters is not what the parties had in mind, but what a reasonable man would think. If a promisor contends that he had no intention to create a legal obligation then this would not exempt him from liability. While in the case of commercial agreements the law presumes that the intention to create legal obligations is present.[5]

Lawful Consideration: According to Section 2(d) of the Act consideration iswhen at the desire of the promisor, the promise, or any other person has done or abstained from doing, or does or abstain from doing, or promises to do or to abstain from doing, something, such act or abstinence or promise is called a consideration for the promise. Thus, consideration is a reasonable and valuable benefit passed on by the promisor to the promisee.

Section 23 of the Indian Contract Act,1872 lays down that considerations or object of the

[5]Essentials of a valid contract under the Indian Contract Act,1872: A Comprehensive Analysis, https://www.legalserviceindia.com/legal/article-5512-essentials-of-a-valid-contract-under-the-indian-contract-act-1872-a-comprehensive-analysis.html#:~:text=A%20contract%20must%20be%20made,an%20unlawful%20object%20is%20void.

agreement are lawful unless it is forbidden by law or defeat the provisions of any law; or is fraudulent; or involves or implies injury to the person or property of another is immoral or opposed to public policy. Blackstone: Consideration is a recompense given by the party contracting to the other. Thus, Consideration is the price of the promise.

Essentials of consideration:

- The act of abstinence which is the consideration for the promise should be done at the desire of the Promisor.
- It should be done by the promisee or other person. In India privity of consideration is not applicable, i.e the consideration can be moved from the promisor, promisee, or by the third party too but not if the third party is a minor.
- The consideration can be Past consideration, Executed consideration, Executory consideration.[6]

Performance & Enforcement: According to Section 56 of the Contract Act, any agreement made to do an impossible or unlawful act is itself a void agreement.

When a contract is made and afterward, it becomes impossible or unlawful to perform due to some reason which the promisor could not prevent, the contract becomes void. Here, the section provides for the subsequent or supervening impossibility which made the performance of the contract impossible. This is also known as the Doctrine of frustration. In the famous case of Taylor v. Caldwell, a contract was entered into for the use of a music hall for a concert, but a day before the concert the hall was destroyed by fire. The Court held that the performance becomes impossible.

In the case of Krell v. Henry, a flat was rented only for viewing a coronation procession, but the coronation got canceled due to the king's illness. It was held that the main object or the foundation of the contract was the viewing of the coronation ceremony and thus the object of the contract was frustrated by the non-happening of the coronation. Frustration of the contract only terminates the contractual liability, it does not extinguish the contract and the arbitration clause survives.

[6] Ibid.

Further, according to section 65 of the Act, if a contract is frustrated and one of the parties received a benefit out of it must restore them to the other party. Eg. Any money paid in advance must be restored.

Specific grounds of frustration:

1. If the subject matter of the contact gets destroyed
2. If the event which is contemplated does not occur
3. If the party died or became incapable of performing the contract.
4. Any Government or legislative intervention transforms the contemplated conditions.
5. If there is any change in the circumstances.
6. In case of war or warlike situations.

Situations which do not attract Doctrine of frustration**:**

1. Act of the third Person
2. Commercial hardships
3. Failure of one of the objects
4. Self-induced.
5. In case of completed transfers or contracts.[7]

Difference between a Smart Contract and a Traditional Contract:

Feature	**Smart Contracts**	**Traditional Contracts**
Automation	Self-executing; automatic execution when conditions are met. Eliminates the need for intermediaries, saving time and money.	Requires manual enforcement and execution, which is expensive and time-consuming.
Transparency	Transparent; all parties can view	Subject to interpretation, leading to

[7] Ibid

Feature	Smart Contracts	Traditional Contracts
	contract terms at all times, reducing dispute risks.	potential disagreements and disputes.
Immutability	Immutable; cannot be altered or edited once executed, providing robust security and reducing tampering and fraud risks.	Easily altered, making them susceptible to disputes and potential manipulation.
Speed	Quick implementation due to automation, no need for intermediaries, saving time and reducing delays.	Takes time to create and complete, leading to increased costs and potential delays.
Cost	More cost-effective as they are executed quickly and do not require intermediaries.	Comparatively expensive to create and complete, reducing profitability and increasing costs.

III. Enforceability Challenges of Smart Contracts

As long as smart contracts follow the fundamental principles of contractual agreements—offer, acceptance, and consideration—they are typically enforceable. But there are issues with their enforceability, especially if there are disagreements or they are not enforceable. One of the problems is that smart contracts provide distinct obstacles because they run automatically and cannot be changed, particularly in the absence of conventional text-based agreements. There are potential and challenges associated with the enforceability of smart contracts, particularly when it comes to dispute resolution and the distinctive characteristics of this new technology.

Ambiguity in Legal Interpretation:Ambiguity in legal interpretation is one of the challenges in enforcing smart contracts. This issue arises due to the unique nature of smart contracts, which are often coded in a technical language that may not be easily understood by legal professionals. As a result, there may be disagreements or misunderstandings regarding the

intent and meaning of the contract terms, leading to disputes and challenges in enforcement. To address this challenge, it is essential to:[89]

1. **Develop clear and concise contract terms**: Smart contract creators should ensure that the terms and conditions of the contract are written in plain language and are easily understandable by all parties involved. This can help reduce ambiguity and potential disputes.
2. **Involve legal professionals**: It is advisable to involve legal professionals in the creation and review of smart contracts to ensure that the terms and conditions are legally sound and enforceable. This can help minimize the risk of ambiguity and potential disputes.
3. **Provide explanations and documentation**: Smart contract creators should provide clear explanations and documentation of the contract terms and conditions to help all parties understand the intent and meaning of the code. This can help reduce ambiguity and potential disputes.
4. **Establish clear dispute resolution mechanisms**: Parties should consider implementing clear and effective dispute resolution mechanisms in their smart contracts to address any ambiguities or disputes that may arise. This can help ensure that disputes are resolved efficiently and effectively.

By addressing these challenges, smart contract creators and users can help ensure that smart contracts are enforceable and that disputes are resolved efficiently and effectively.[10]

Lack of Legal Precedents:The absence of established legal precedents poses a problem to the enforcement of smart contracts. Since smart contracts are still a relatively new technology, there isn't any established legal precedent to help with their enforcement or interpretation. This may lead to uncertainty when interpreting the law, especially when there are

[8]The Challenges in the Executability and Enforceability of Smart Contracts, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4300650

[9] Dispute Resolution for Smart Contracts: Challenges and Opportunities, https://www.winsavvy.com/dispute-resolution-smart-contracts/

[10]Enforcing Smart Legal Contracts: Prospects and Challenges, CIGI Paper No. 271, https://www.cigionline.org/publications/enforcing-smart-legal-contracts-prospects-and-challenges/

disagreements or when it cannot be enforced. It can be challenging to predict how courts would interpret and execute smart contracts because to the absence of established legal precedents, even though they are normally enforceable as long as they adhere to the fundamentals of commercial agreements. This emphasises how important it is to continue doing research and development in order to handle the legal issues around smart contracts.

Technological Vulnerabilities and Security Concerns: The following challenges highlight the need for ongoing research and development to address the security, legal, and practical issues associated with smart contracts.[11][12]

1. Security and Privacy: Smart contracts are open-source and publicly readable, which raises concerns about security and privacy. Hacked nodes in a contract's blockchain can log falsified data, potentially triggering the automated execution of the smart contract's outcome.
2. Legal Issues: Smart contracts face legal challenges, including compliance with different countries' laws and regulations, as well as issues related to data protection regulations such as the European General Data Protection Regulation (GDPR).
3. Reliance on Oracles: Smart contracts often rely on "oracles" to interact with external data. However, this reliance can introduce vulnerabilities and create challenges in ensuring the accuracy and reliability of the data obtained from oracles.
4. Immutability: The immutability of smart contracts, once deployed on a blockchain, can pose challenges in the event of errors, disputes, or the need for updates or corrections.
5. Usability Challenges: Smart contracts may face usability challenges, making it important to ensure that they are user-friendly and accessible to all parties involved.

IV. Mitigating Risks and Enhancing Enforceability

[11] Are Smart Contracts contracts? https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2017/08/are-smart-contracts-contracts.pdf

[12] An Introduction to Smart Contracts and Their Potential and Inherent Limitations, Harvard Law School Forum on Corporate Governance, https://corpgov.law.harvard.edu/2018/05/26/an-introduction-to-smart-contracts-and-their-potential-and-inherent-limitations/

Smart Contract Audit:The process of closely examining a smart contract's code before deploying it is known as a smart contract audit. After they are deployed, smart contracts cannot be changed since they are immutable. Because of this, they need to be carefully inspected to rule out any problems or vulnerabilities so that, when the project is deployed, its functioning won't be impacted. Thus, smart contract audits are carried out to improve the integrity and optimisation of codes.

Developers examine the contract's source code line-by-line to find any security flaws or vulnerabilities during a smart contract audit procedure. Following identification, the code lines containing errors are corrected and fixed. This can lower the possible dangers associated with the code and raise its quality.

A smart contract audit can help mitigate security risks associated with the contract's code and is vital to the project's life cycle. It is beneficial for a project in the following ways[13]:

- **Increased security** – Performing a smart contract audit helps identify possible security vulnerabilities and other risks associated with the contract's code. Developers can then work on the discovered issues to fix them and strengthen the security of the smart contract so that the project remains tamper-proof and protected against malicious attacks.
- **Improved optimization** – Conducting a smart contract audit service can optimize the contract's source code by exposing any indirect command execution like runtime error, reentrancy, interface issues, unknown code, gas-intensive operations and other flaws.
- **Better functionality** – Auditing a smart contract can ensure that the contract functions as intended. It can verify if the contract meets the specific requirements and purposes of the project or institution and examine if the contract has deviated from the project's original goal.

[13]A Comprehensive Guide to Smart Contract Auditing, Leeway Hertz, https://www.leewayhertz.com/smart-contract-audit/#What-is-a-smart-contract-audit?

- **Compliance and regulatory approval –** Organizations that require compliance with industry-specific or governmental requirements can benefit from smart contract audits to ensure their contracts adhere to relevant standards and regulations.
- **Boosts performance –** Auditing a smart contract before deploying it can streamline its automation process. It helps to trigger the smart contract without hindrances or glitches and helps boost its overall functionality.
- **Higher efficiency –** Audits are beneficial in improving the efficiency of your code by confirming if it is well-written and organized while also validating that all associated variables and functions go according to the project's intended purpose and goal.
- **Enhanced user trust –** A smart contract audit builds trust with users, demonstrating that the contract has been thoroughly examined and any issues have been resolved.

Legal Framework Adaptations: To enhance the enforceability of Smart Contracts, legal framework adaptations may include the following:

1. **Regulatory Clarity**: Developing clear and comprehensive regulations specifically addressing smart contracts to provide a legal framework for their use and enforcement.
2. **Legal Precedents**: Establishing legal precedents through court cases and arbitration that recognize and enforce smart contracts, providing clarity and confidence in their legal validity.
3. **Amendments to Existing Laws**: Adapting existing contract and commercial laws to accommodate the unique features of smart contracts, ensuring their enforceability within the traditional legal system.
4. **International Standards**: Developing international standards and agreements to harmonize the legal treatment of smart contracts across different jurisdictions, facilitating their enforceability on a global scale.

Hybrid Smart Contracts:A Hybrid smart contract is a type of smart contract that combines the benefits of both traditional smart contracts and off-chain resources to create more powerful

and versatile contracts. They make it feasible to integrate external data sources and APIs, enabling smart contract development that react to actual world events.

Hybrid smart contracts often entail a two-step procedure. The contract is first created on the blockchain and includes the terms and conditions of the agreement. Second, the contract interacts with resources off-chain to carry out the conditions of the agreement.[14]

Feature	Smart Contracts	Hybrid Smart Contracts
Enforcement Mechanism	Self-executing program written in code, automatically enforces contract terms. Typically stored on a blockchain network.	Synthesis of off-chain elements and smart contracts. Core business logic enforced by a smart contract, supplemented by off-chain components.
Middlemen Involvement	No need for middlemen like banks or attorneys; automated execution after conditions are satisfied.	May involve off-chain components, but still reduces reliance on traditional intermediaries. Hybrid approach for additional functionality.
Immutability	Immutable; cannot be changed or tampered with after creation.	Hybrid nature may introduce complexities, but smart contract core remains immutable; off-chain components may have different characteristics.
Complexity	Typically, simpler and more straightforward due to executing a specific set of actions with predetermined rules.	Can be significantly more complex due to the inclusion of off-chain components and interactions with external systems.

[14]A Complete Guide to Understanding Hybrid Smart Contracts, https://rejolut.com/blog/a-complete-guide-to-understanding-hybrid-smart-contract/

Security	Generally considered very secure, stored on a decentralized blockchain network and automatically executed without human intervention.	May be more susceptible to security issues, especially if off-chain components are less secure than blockchain networks.
Flexibility	May have limitations in incorporating a wide range of off-chain components.	Greater flexibility; can incorporate a wider range of off-chain components, offering versatility in contract execution.
Cost and Complexity Reduction	Efficiency gains by eliminating intermediaries; typically lower cost and complexity.	Lower cost and complexity due to automation, but additional functionalities may introduce some complexities. Offers a balance between cost and flexibility.
Future Trends	A mature technology that has revolutionized business processes.	Continues to evolve as blockchain technology advances, offering new creative contract models with specific benefits and constraints.

V. Issues relating to Smart Contracts in the Indian Context and their effect on NFTs[15]

1. NFTs and Smart Contracts: Overview

    - NFTs are unique data units stored on a blockchain, often associated with digital or physical assets.

[15]Issues relating to Smart Contracts in the Indian Context, https://csipr.nliu.ac.in/technology/issues-relating-to-smart-contracts-in-the-indian-context-and-their-effect-on-nfts/

- Smart contracts, digital contracts stored on a blockchain, automate the execution of agreements without intermediaries.
- NFTs rely on smart contracts for transferability and ownership verification.

2. Consideration in Smart Contracts and Indian Law
    - Basic contract elements include offer, communication, legitimate consideration, acceptance, and mutual consent.
    - Indian Contract Act requires lawful consideration; the use of cryptocurrency as consideration raises legal questions.
    - Relevant Case Law: Internet And Mobile Association Of India vs Reserve Bank Of India (March 4, 2020)
        - The Supreme Court overturned the RBI's circular, stating that the power to outlaw something as res extra commercium is solely a legislative decision, and the RBI, being a regulating body, is outside its scope when ruling on this matter.
3. Digital Signature Validity
    - Smart contracts rely on digital signatures created by blockchain technology.
    - Section 35 of the Information Act requires a government-designated Certifying Authority for digital signatures to be valid.
    - Section 65B of the Indian Evidence Act accepts digitally signed contracts as evidence, but uncertainty exists about their admissibility in court.
4. Jurisdiction Challenges in Smart Contracts
    - Smart contracts operate through nodes on a blockchain, creating jurisdictional challenges.
    - Party autonomy, allowing parties to agree on the forum and governing law, is a potential solution.

- Indian laws, specifically Section 20 of the Code of Civil Procedure, support party autonomy for choosing jurisdiction.

5. Transfer of Intellectual Property Rights (IPR)
    - Smart contracts are crucial for transferring copyright related to NFTs.
    - An arbitration clause in smart contracts is proposed to address IPR issues, but limitations exist under Indian law.
    - Relevant Case Laws:
        - Booz Allen and Hamilton Inc. v. SBI Home Finance Ltd.
            - The Supreme Court held that disputes regarding 'rights in rem' are non-arbitrable, while issues pertaining to 'rights in personam' are arbitrable.
        - Eros International Media Limited v. Telemax Links India Pvt. Ltd.
            - The Bombay High Court adjudicated that all Intellectual Property cases are not necessarily 'rights in rem' and could be subject to arbitration.
6. A Probable Solution: Interpretive Reform of Indian Contract Act
    - Courts have historically interpreted contract law to accommodate technological innovations, as seen in the legal validity of electronic contracts.
    - Advocates leveraging the flexible nature of common law to address the technical complexities of smart contracts.

Conclusion

In conclusion, the evolving landscape of smart contracts presents both opportunities and challenges in the legal domain. Understanding smart contracts involves delving into their digital, automated, and immutable nature. These self-executing programs operate on blockchain technology, offering transparency, security, and efficiency. Key components, such as participants, state, functions, and rules, govern the structure of smart contracts.

Traditional contracts, with their physical, handwritten or printed forms, coexist with smart contracts. Elements like contractual intent, lawful consideration, and the ability to perform and enforce constitute the foundation of traditional contracts. However, smart contracts differ in terms of automation, transparency, immutability, speed, and cost-effectiveness.

Enforcing smart contracts faces challenges, including ambiguity in legal interpretation, a lack of established legal precedents, and technological vulnerabilities. Ambiguity can be addressed through clear contract terms, legal professional involvement, and effective dispute resolution mechanisms. The absence of legal precedents underscores the need for ongoing research to handle legal issues surrounding smart contracts. Additionally, technological vulnerabilities and security concerns necessitate continuous development to ensure the integrity and security of smart contracts.

Mitigating risks and enhancing enforceability involve smart contract audits, legal framework adaptations, and the exploration of hybrid smart contracts. Audits enhance security, optimize code, and boost overall functionality. Legal adaptations, such as regulatory clarity, legal precedents, amendments to existing laws, and international standards, aim to provide a robust legal foundation for smart contracts. Hybrid smart contracts, combining on-chain and off-chain elements, offer greater versatility and functionality.

Issues specific to the Indian context highlight considerations in smart contracts, digital signature validity, jurisdiction challenges, and the transfer of intellectual property rights. The use of cryptocurrency as consideration raises questions under Indian law, exemplified by the Supreme Court overturning the RBI's circular. Digital signature validity and jurisdiction challenges can be addressed through legislative support and party autonomy. Intellectual property rights transfer via smart contracts faces limitations, and relevant case laws emphasize the non-arbitrability of 'rights in rem' disputes.

As a potential solution, an interpretive reform of the Indian Contract Act is proposed. Courts have historically interpreted contract law to accommodate technological innovations, as seen with the legal validity of electronic contracts. Leveraging the flexible nature of common law can address the technical complexities inherent in smart contracts.

In navigating the intersection of smart contracts and legal enforceability, a balanced approach involving legal frameworks, technological advancements, and adaptability is essential. The

legal landscape must evolve to accommodate the unique features and challenges posed by smart contracts, fostering innovation while ensuring enforceability and protection for all parties involved.