Smart Legal Contracts & Dispute Resolution

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Hot Legal Topics in the Age of Digitalization

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What are Smart Contracts? Neither Smart nor Contracts?

Key characteristics of Blockchain Smart Contracts

- Software code reflecting any data-driven business logic
- Stored in an underlying blockchain-based network
- Event-driven – Triggered by trusted sources (Oracles, IoT)
- Automatically allocates and transfers digital assets/currency
- Self-verifying and self-executing once coded conditions are met
Smart Contracts Today & Forecast

Examples of SC currently developed in the market

• Smart Derivatives Contracts
• Smart Contracts for Commodity Trading
• Self-Executing Insurance Smart Contracts
→ Industries where automatic executing process will be useful

Global Forecast for Smart Contracts Market

• USD 3 Billion by the end 2023*

(*Source: Smart Contracts Market Research Report – Global Forecast to 2023)
Blockchain Smart Contracts vs Smart Legal Contracts

**Legally Binding?**

- Applicable law → new rules on validity and enforceability
- Hybrid version (traditional written contract + encrypted-coded smart contract)
- Validation of smart contract code to ensure faithfulness to legal text
- Operational semantics (actions to be performed) vs Non-operational semantics
- Dispute Resolution → Article II (1) and (2) of the New York Convention
Estate Planning

Parents → Wallet → Monthly Allowance → Child

Oracle: Notary Public

<contract>

1. [Code snippet]
2. [Code snippet]
3. [Code snippet]
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19. [Code snippet]
20. [Code snippet]

</contract>
Benefits of Smart Contracts

✓ Execution & transaction certainty (but less flexibility)
✓ Speed of execution
✓ Increase verifiability & transparency (DLT)
✓ Self-enforcement of contractual obligations (≠ traditional legal contracts)
✓ Remove the middlemen and trusted intermediaries
✓ Lower transactions costs
Potential Sources of Smart Contracts Disputes

• Unexpected performance issues (bugs, coding errors)
• Incorrect external data / false signal from IoT sensors
• Oracle’s disappearance (long-term smart contracts)
• Parties may want to unwind a transaction on the grounds of misrepresentation, mistake or duress
• Discrepancies between the traditional written agreement and the coded-language
• Uncertainty over governing law and dispute resolution (decentralized nature of the blockchain)
• Sanctions (OFAC)
Arbitration proceedings as optimal dispute resolution?

**State courts**
- Potentially limited authority to order the alteration of the encoded obligations
- Alternative: court order to pay remedies to the aggrieved party for damages

-VS-

**Arbitration**
- Flexibility and swiftness of arbitral proceedings
- Bespoke arbitration process which may help overcome irrevocable nature of SC
- Selection of arbitrators with relevant technical knowledge
What dispute resolution mechanisms could be used?

**Intra – blockchain dispute resolution**

- Parties delegate to a Central Blockchain Administrator the authority to directly resolve disputes
- Dispute resolution conducted without formal parties’ submissions

**Arbitration Library Process**

- Once triggered, pause execution and send a message to an Appointing Authority
- Appointing Authority
  - (i) propose an arbitrator to the parties - or -
  - (ii) provide a database with arbitrators from which the parties can choose

< Specific threshold

> Specific threshold
Arbitration Library Process – Simplified

Smart Contract runs

Party triggers arbitration through function #pauseAndSendToArbitrator# in Arbitration Library

Arbitration Library sends Notice of Arbitration to Appointing Authority

Bespoke arbitration proceedings (arbitrator nomination, statement of claim/defence, e-hearing)

Arbitrator’s decision

Depending on award, Appointing Authority amends Smart Contract

(Source: CodeLegit)
Arbitrating Smart Contracts Disputes – Legal Challenges

• Independency of private companies providing online dispute resolution services/platform (merchant’s friendly?)

• Risk of invalidation by courts (depending on applicable Law on Consumer Protection and corresponding rights and prohibitions)

• Arbitration clause incorporated between anonymous parties may not be deemed as a valid arbitration agreement (e.g. Swiss case law)

• Central Blockchain Administrator may be unable or unwilling to amend the ledger
Conclusion

- Disputes will not disappear with self-executing smart contracts (dispute resolution mechanism is a must-have)
- Innovation within arbitration rules (so-called “Blockchain Arbitration Rules”)
- Emerging arbitration institutions aspiring to provide smart contracts dispute resolution
- Development of dispute resolution services/platforms for smart contracts (e.g. CodeLegit, Datarella, SAMBA, Kleros, etc.)
- Compatibility with consumer protection rights and data protection requirements
Thank you

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References

- CodeLegit White Pater on Blockchain Arbitration.
- R3 and Norton Rose Fulbright White Paper, “Can smart contracts be legally binding contracts”.
- James Rogers, Harriet Jones-Fenleigh and Adam Sanitt, Norton Rose Fullbright, “Arbitrating Smart Contract disputes”, October 2017