

Insights

SMART CONTRACTS AND THE USE OF ARBITRATION TO RESOLVE RELATED DISPUTES

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SUMMARY

In recent years, technology advancement has introduced new methods for contract formation. In particular, the rise of blockchain technology has led to the emergence of “smart contracts”, which are digital contracts which automatically execute transactions when pre-determined conditions are met.

This article provides a brief explanation as to what smart contracts are, and examines some of the potential issues that could arise under Hong Kong law when arbitration is used to resolve smart contract disputes.

WHAT ARE SMART CONTRACTS?

A whitepaper published by the Hong Kong Monetary Authority (“HKMA”)^[1] defined a smart contract as an autonomous software running on a distributed ledger technology (“DLT”, explained below) platform which automatically exchanges assets that are stored or represented on the DLT platform.

Similarly, the UK Law Commission^[2] identified three key features of a smart legal contract^[3]:

1. Automaticity: Some or all of the obligations under the smart contract are performed automatically by a computer programme without the need for human intervention. Once the conditions for its performance are met, the computer programme will perform the contractual obligation automatically. (For example, in the context of a travel insurance policy, a smart contract can be programmed to make an automatic payment to policy holders whenever a flight is delayed^[4].)
2. Legally enforceable: To become a smart “legal” contract, it must fulfil the requirements for the formation of a legally enforceable contract: agreement, consideration, certainty and completeness, intention to create legally binding relations and compliance with formalities.^[5]

3. DLT: Distributed ledger technology involves a network of computers (“nodes”) which enables participants to store information digitally. It is “distributed” in the sense that participants in the DLT system approve and eventually synchronise additions to the ledger. This method could be contrasted with the traditional “centralised” way of recording transactions where an intermediary (e.g. a bank) is entrusted to update its ledger (i.e. debiting the payer’s account and crediting the payee’s account).

The UK Law Commission broadly categorised smart legal contracts into the following three types^[6]:

1. Type A: A natural language contract (e.g. a traditional contract on paper using English) in which some or all of the contractual obligations are performed automatically. The code merely is a tool to assist the parties to perform the contractual obligations as set out in the natural language contract.
2. Type B: A hybrid contract in which some contractual obligations are defined in natural language, and others are defined in the code of a computer program (a “Ricardian contract”).
3. Type C: A contract in which all of the contractual terms are defined in, and performed automatically by, the computer programme. No natural language version of the agreement exists.

The UK Law Commission expects that most smart legal contracts will involve at least some terms written in natural language, rather than being entirely code-based (i.e. Types A and B contracts).

Solely code-based smart legal contracts (i.e. Type C contracts) would be rare in practice^[7].

USING ARBITRATION TO RESOLVE SMART CONTRACT DISPUTES

As with all types of contracts, disputes can arise from smart contracts. This section discusses issues that could arise under Hong Kong law where parties to smart contracts intend that arbitration be used as the dispute resolution mechanism.

Formality requirements

A fundamental underlying requirement for arbitration is the existence of a valid arbitration agreement. The arbitration agreement records the parties’ agreement to submit their disputes to arbitration.

An issue that arises is whether an arbitration agreement within a clause contained in a smart contract satisfies the formality requirements for arbitration agreements.

Under section 19 of the Arbitration Ordinance (Cap 609) (“AO”) (which adopts Option I of Article 7 of the UNCITRAL Model Law), an arbitration agreement must be “*in writing*”.

The “*in writing*” requirement is fulfilled if the arbitration agreement is made by “*electronic communication*”, i.e. “*any communication that the parties make by means of data messages*”.

"Data messages" is defined as *"information generated, sent, received or stored by electronic, magnetic, optical or similar means, including, but not limited to, electronic data interchange (EDI), electronic mail, telegram, telex or telecopy"*. Section 19 also requires that an arbitration agreement must be *"accessible"* and *"useable for subsequent reference"* in order to be regarded as *"in writing"*.

In principle, there appears to be no reason why arbitration agreements in the form of computer codes, being information stored by electronic means, cannot satisfy the *"in writing"* requirement for the arbitration agreement, as long as the various requirements under section 19 are fulfilled. However, it is very unlikely that the drafters of the Model Law and therefore of section 19 had computer codes in mind when defining *"data messages"*. Further, being computer codes, there could be difficulties as to the computer codes' *"accessibility"* and how the codes could be extracted *"for subsequent reference"*. (Hong Kong courts are pro-arbitration and holding the parties to their agreement to arbitrate, and so are likely to adopt a pro-arbitration approach to interpreting the requirements in section 19, but equally the Hong Kong courts will not bend the language of section 19 beyond its natural meaning.)

If the parties to smart contracts intend to arbitrate future disputes, a more prudent approach would be to embed their arbitration agreements (if they wish to arbitrate) in the natural language part of their smart contracts (for Types A and B contracts), or in a separate term sheet prepared in the traditional method (for Type C contracts).

Seat of arbitration

The choice of the seat of arbitration is very significant. The law of the seat, in broad essence, determines the validity of the arbitration agreement, the procedural laws that will apply to the many aspects of the arbitration, and issues related to the validity of the award and challenges to the award.

As mentioned above, a key feature of smart contracts is the use of DLT, which is a network of nodes which could be spread around the world. To avoid any future disputes and jurisdiction contests about the applicable seat, parties should expressly agree on the applicable seat in the arbitration agreement. This important choice should be set out expressly in the arbitration agreement / clause.

Arbitrability

A related matter to the seat of arbitration is whether the subject matter of the smart contract is *"arbitrable"* under the law of the seat.

While arbitration is a private dispute resolution process which is based on the parties' agreement to have their disputes referred to an arbitral tribunal, it does not mean that the parties are free to refer any subject matter to arbitration.

For example, in Hong Kong, section 15 of the Control of Exemption Clauses Ordinance (Cap 71) provides that an arbitration agreement made with a consumer is unenforceable against that consumer (unless with the consumer's consent). Therefore, there is a risk that arbitration agreements contained in consumer-related smart contracts would be unenforceable against consumers.

See also below discussion regarding enforcement.

Qualification of arbitrators

One of the strengths of arbitration (as opposed to court litigation) is that the parties have the autonomy to choose their own arbitrator(s) with the special knowledge or expertise required to resolve their dispute.

Parties to smart contracts should specify expressly in their arbitration agreement that the dispute should be referred to arbitrator(s) with the requisite technological proficiency, especially if the dispute concerns the operation of the computer codes in the smart contract.

Public policy / Enforcement

Another important factor to consider is whether an arbitral award relating to a smart contract dispute would be enforced or set aside by the courts.

Often smart contracts involve cryptocurrency transactions, with the consideration of the smart contract being cryptocurrency. However, some jurisdictions heavily regulate or even ban cryptocurrencies.

For example, in 2020, a Mainland Chinese court^[8] set aside an arbitral award because the awarded damages were the Chinese Yuan equivalent value of a certain amount of Bitcoin. The Mainland Chinese court decided that such an arbitral award contravened public policy of the PRC, in particular because it violated the ban on exchange between cryptocurrencies and fiat currencies under PRC law.

On the other hand, Hong Kong is more receptive to cryptocurrencies. Consistent with some other common law jurisdictions, a Hong Kong court^[9] recently accepted that cryptocurrencies were "property" and are capable of being held on trust.

CONCLUSION

Historically, the development of arbitration has been able to keep up with the advancement of technology. In particular, the flexibility of arbitration procedures and the option to choose specialist arbitrators make arbitration an attractive option to resolve disputes relating to new technology, including smart contracts.

However, as highlighted above, there are some potential technological, legal and procedural issues that could arise. Whether arbitration can be an accepted dispute resolution method for smart contract disputes depends on how quickly and efficiently arbitration practitioners and rules can adapt to the ever-change technology in this area.

[1] HKMA 2017 Whitepaper 2.0 on Distributed Ledger Technology.

[2] “Smart legal contracts – Advice to Government” published by the UK Law Commission in November 2021 (“UK Law Commission Paper”).

[3] Paragraphs 2.12 to 2.50 of the UK Law Commission Paper.

[4] See the example given in paragraph 2.48 of the UK Law Commission Paper.

[5] The HKMA Whitepaper noted, in paragraph 7.5, that whether a smart contract can be considered as a legal contract “*is still an open debate*”. Provided that a smart contract fulfils the requirements for the formation of a contract under Hong Kong law, there is no reason why a smart contract cannot be legally enforceable.

[6] Paragraph 2.51 to of the UK Law Commission Paper.

[7] Paragraphs 2.83 to 2.85 of the UK Law Commission Paper.

[8] *Gao Zheyu v Shenzhen Yunsilu Innovation Development Fund Enterprise (L.P.) and Li Bin* (2018) Yue 03 Minte No. 719.

[9] *Re Gatecoin Ltd (in liquidation)* [2023] 2 HKLRD 1079

RELATED PRACTICE AREAS

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MEET THE TEAM



Glenn Haley

Hong Kong SAR

glenn.haley@bclplaw.com

[+852 3143 8450](tel:+85231438450)



Ian Cheng

Hong Kong SAR

ian.cheng@bclplaw.com

[+852 3143 8455](tel:+85231438455)

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