

Why We Don't Need Blockchain to Manage Cases in International Arbitration

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Until a few decades ago, international arbitration was perceived to be a quick and inexpensive way of resolving disputes. However, the proliferation of legal rules, the disclosure of voluminous documents, complex technical evidence and over-lawyering have, to a large extent, hollowed that boast and made it appear somewhat of an urban myth.

Quite recently though, we have been told that blockchain might be the panacea for several of those ills.[fn]See GAR article *"Is blockchain the future?"* 14 March 2018 and Law360 article *"Blockchain will improve International Dispute Resolution"* 14 March 2018.[/fn] Given the current euphoria surrounding potential uses of blockchain in almost every industry, it is unsurprising that the international arbitration community is excited to see how this emerging technology can be used in international arbitration.

However, the main difficulty with any potential application of blockchain in the area of international arbitration is that the resolution of disputes does not require the use of ledgers in the same way that they are needed to, for example, record cross-border payments in the finance services sector or property rights in the real estate industry.

This is what appears to be blockchain's core strength. It is a digital ledger that is

decentralised (i.e. there is no single controlling entity), distributive (i.e. the ledger is shared, processed and synchronised over a vast network of computers or “*blockchain nodes*”) and almost incorruptible because it would be extremely difficult to alter retrospectively an entry which has been recorded on the ledger without altering all of the subsequent entries recorded on it. These entries (or “*blocks*” of data) are linked or “*chained*” together by using cryptography and time-stamping giving blockchain its unique name.

Blockchain accordingly allows us to rely on a continuously-growing record of economic transactions on a digital ledger without the need for a trusted third party to validate those transactions. Users are willing to trust a given blockchain ledger because it will be highly improbable for anyone to be able to manipulate the ledger. Thus, for example, a blockchain property title ledger could possibly record the particulars of specific properties, including their exact location, title details and ownership history. If buyers and bankers are able to rely on this information at face value, it is a no brainer that it would serve to reduce costs as well as to simplify and expedite property transactions.

With specific reference to international arbitration, there are cogent technological reasons which will make it difficult for the management of an arbitration reference to be conducted in a blockchain platform in the foreseeable future.

These technological reasons stem from blockchain’s own limitations (i.e. it is actually quite slow and expensive to store massive volumes of data on a blockchain ledger). We know for a fact that, for example, the blockchain-based Bitcoin can only process 1MB of data every 10 minutes. Moreover, the current transaction cost of storing about 1KB of data on a public blockchain is reported to be well over US\$2. Moreover, once data is actually stored on a blockchain ledger, it must be borne in mind that it is immutable and can never be deleted.

Thus, before a complete arbitration reference can be efficiently managed on a blockchain platform (as proposed by the groups such as the Smart Arbitration and Mediation Blockchain Application (SAMBA)), one needs to first find a way to effectively overcome the inherent shortcomings of blockchain technology.

It is also incorrect to suggest that we need blockchain to somehow bring us into a new era where hard copies of voluminous documents will no longer need to be served on the arbitral tribunal and the other parties by courier service.

On the contrary, contemporary practices in international arbitration show that, for the past several years, many arbitral tribunals have been able to effectively manage the filing of a large number of documents by the parties with the assistance of third-party cloud storage providers such as Dropbox, Amazon AWS and Google drives.

The real issue as to whether such a practice should continue to be used in international arbitral proceedings emanates from a concern that such cloud storage providers may not have adequate security protocols which can prevent major cyberattacks in the future. If they do not, it could potentially lead to the unauthorised disclosure of documents in the public domain and thereby undermine the confidential nature of the arbitral process.

In order to obviate this concern, the use of decentralised cloud storage systems is slowly gaining currency. Such systems are currently being commercialised by companies such as Storj, Sia and Filecoin. In short, in a decentralised cloud storage system, a document is encrypted and shredded into smaller parts and duplicated. The smaller files are then sent to different computers on a peer-to-peer network. This effectively means that in the event of a cyberattack against one specific computer, it will still not be possible to access the original document. The only way it would be possible is by using a private key to reconstruct and decrypt the original document with the aid of distributed hash table (DHT) technology. DHT technology notably predates blockchain and an earlier version was in fact used by companies (such as Napster and BitTorrent) to infamously share files over their peer-to-peer networks in the early 2000s.

Moreover, it is noteworthy that several arbitral institutions (such as WIPO, JAMS and the Court of Arbitration for Sport) have already introduced their own electronic case management systems, which allow parties and the arbitral tribunal to upload documents in relation to an arbitration reference on a secure website hosted by the arbitral institution. A blockchain platform is neither necessary nor currently used by such institutions to operate their electronic case management systems.

In conclusion, whilst the ingenious opportunities that blockchain presents are truly unprecedented and potentially revolutionary, it is unlikely that one of the significant applications of blockchain will be data storage or the creation of an electronic case management system for the complete conduct of an arbitration reference.

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