Kluwer Arbitration Blog

2018 In Review: Blockchain Technology and Arbitration

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For those of us interested in the intersection of technology and law, 2018 has been a fascinating year. Lawyers across jurisdictions, areas of expertise, and industries have engaged in debates about the use of emerging technologies and the impact that they will have on the future of the legal industry. Blockchain, smart contracts, artificial intelligence ("AI"), machine learning and natural language processing – they have ceased being mere buzz-words and have entered the sphere of technologies that are actively shaping today's society.

Arbitration is no exception in this increased trend of convergence between technology and law. Kluwer Arbitration Blog ("KAB") has seen a stark increase in the number of posts discussing the various impacts these new technologies have had or might have on international commercial and investment arbitration (*see the overview of technology related posts here*). Aside from presenting fascinating points for reflection, these articles show that the key theme of 2018 was blockchain and its use in arbitration. Three core topics emerged over the course of 2018: understanding blockchain, its possible application to enhance existing processes, and its potential to reshape the arbitration process.

Where to Start when Thinking about the Use of Blockchain in Arbitration?

A starting point in an arbitration-blockchain discussion inevitably begins with defining, and more importantly, understanding blockchain technology. Essentially, a blockchain is a shared database filled with entries that must be confirmed and encrypted. The name blockchain comes from the "blocks" that get added to the "chain" of transaction records. The benefit of this technology is its easy adaptation for different purposes. When linked with other technologies, blockchain finds plenty of meaningful applications. A prime example of this is *smart contracts* – a set of coded contractual clauses that sit on the blockchain and enable self-enforcement of parties' rights and obligations.

Blockchain as a standalone tool can decentralize, and therefore, streamline existing processes in managing arbitration proceedings. The role of blockchain as a facilitating tool focuses mostly on the aspects of the process that can be enhanced. The scope is limited and partial. The picture changes if blockchain is connected with another technology, such as, for example, AI or Internet of Things ("IoT").

Is Blockchain only a Management Facilitating Tool?

In the quest for a tool that would reduce cost and time, but still ensure all due process requirements

are duly complied with, blockchain is just one in the line of technologies that have been explored thus far (the most common ones so far being audio and video conferencing tools). While implementing any new technology in a field with as many repercussions as the legal field, it is important to consider if the introduction of the technology is even warranted. The benefits of using blockchain technology to authenticate and validate smart contracts are worth the technological transition that the field will have to accommodate.

As a community, we have mostly explored the limits of using blockchain without affecting the analog nature of arbitration proceedings. Such partial automation revolves around the notion of confirming the authenticity of documents via a blockchain based system. The authentication may include various aspects of an arbitration lifecycle: from an arbitration clause, through submission and taking of evidence, to enforcement of arbitral awards, each using the benefits of the technology to enhance the efficiency of proceedings. (*See examples of these discussions on KAB here and here*)

Simultaneously, looking at a wider market, one can notice a dozen blockchain-based platforms aiming at a different degree of automation. (*See, for example*, Confideal, Coinlancer.io, Jury.online and Kleros). The full automation of the process, but for the arbitrator's assessment of the case and the decision, is something we still need to explore.

Will Blockchain Be the Innovative, Disruptive Industry Force that will Reshape Arbitration as We Know It?

With emerging technologies, one can imagine automated dispute resolution platforms where these technologies are interoperable, thus enabling more efficient and better-secured proceedings. Such full automation, however, requires careful procedural design, translated and adjusted to the conditional logic of a given programming language. Special care must be employed in drafting policies relating to those aspects that require a more nuanced understanding of legal proceedings than those that can be conveyed through conditional logic and 1s and 0s.

As a starting point, an arbitration clause would need to become a smart arbitration clause – i.e. translated into a block of code and stored on the blockchain. The first question here is would such a clause meet the requirements of Art. II of the New York Convention? Looking at smart contracts as another form of executing agreements, one could make the argument that a smart arbitration clause would be compliant with New York Convention Art. II requirements. As has been discussed on KAB here and here, at the very minimum, blockchain technology could preserve the validity of an original arbitration agreement stored therein.

By its very nature, an arbitration clause is passive. For it to be triggered, there needs to be a dispute that parties cannot otherwise resolve. While in an analog environment this means that an arbitration clause can be physically independent from the main agreement, in an automated environment that would not necessarily be the case. Rather, such a clause would need to be conditionally programmed and its activation made dependent on a particular event constituting breach of the parties' agreement. In simple contract terminology, an arbitration clause would be triggered if the goods are not delivered or the price has not been paid as per the terms of the contract.

A blockchain-based dispute resolution platform would exclude oral hearings and the arbitrator's decision on the case. Aside from that, theoretically, all other aspects of the process can be

automated: the submission of claims and counter-claims, submission of evidence, or communication with the tribunal, to list a few.

To design the automation of a dispute resolution system, one needs to look at the nature of the process itself and find ways to enable the same outcome in a blockchain-based platform. As an example, if triggering an arbitration clause means the submission of a notice of arbitration to an institution, what comes next? Notifying the party of the breach and instructing a commencement of proceedings, or automating the commencement notification?

In the former case, it seems that the automation would stop there. The interested party would submit its notice of arbitration and the remainder of the proceedings would be administered in very much the same way as we are accustomed to. The latter option, however, seems to lead further down the path of automation to the first crossroad: Is there a need to integrate a smart arbitration clause within a dispute resolution platform of an arbitral institution?

Even if we, as the arbitration community, opt for “no”, the market may still decide “yes”. The businesses that transition to smart contracts, and integrate smart arbitration clauses therein, might want an integration with the institutionally designed dispute resolution platforms. They would likely see the security and stability of the system as the key advantages of such integration. The decisive element, in that case, sits with arbitral institutions.

On one hand, waiting for the tech-market to offer some stability is the best choice. We currently find ourselves in the wild west days of this technology, with insufficient standards and best practices. The technology is continuously changing and expanding. We are yet to fully grasp the potential of blockchain, either as a standalone technology or coupled with another one. The global hype around blockchain is simply not enough to incentivize any major tech investments in the development of a platform that would be integrated with a smart contract. So far, no institution has announced its intention to undertake such an endeavor. Whether and to what extent we will see arbitration institutions jumping on the tech wagon will depend on the technologies themselves, the regulatory environment, and the need of the industries.

At the same time, the last couple of years have brought independent dispute resolution blockchain-based platforms. However, we are yet to see how these platforms will operate in the future. The mere fact that they exist, even tailored to specific types of transactions, should signal to the arbitral institutions that they need to adjust and adapt to the trends by finding ways to make the technology work for their benefit and the benefit of their clients.

So, What Will 2019 Bring?

It is fascinating to think how far the application of blockchain can lead us. As this technology develops, and new ones emerge, it will take some time to see the extent of their application in practice, and a long time before these technologies become the standard.

We, as a community, have the opportunity to shape the direction in which these technologies are applied. To effectively do so, we will need to expand the audience and include the individuals who are creating these technologies. It is a fundamental shift in the legal industry calling for more discussion across legal and tech industry lines. To effectively code a contract, design a document-storage platform or design an entire dispute resolution platform, we, as a community, need to speak the same language as the programmers. This, in turn, will require us to re-think our approach to arbitration in analog terms and transition to a digital environment.

If you were setting policies for smart-contracts on the blockchain, what checks and balances in the application of the technology would be required to ensure no violation of due process?

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