



Blockchain: Lawyers, take note

May 25, 2017 | Kim Nayer

In recent months, discussion of legal issues and business applications of blockchain have proliferated in the press and on legal technology and blockchain technology websites. In April, the ABA even held a day of blockchain discussion.

Many will have first heard of “the blockchain” in the context of Bitcoin, the cryptocurrency developed in 2009. Blockchain is the term given to the computational model underlying Bitcoin. Leaving aside the mystique associated with Bitcoin, and separate and apart from the idea of cryptocurrency, its peer-to-peer, secure, verified transaction system is revolutionary. At minimum, blockchain can be understood as a means of creating trust in and establishing evidence of transactions without the need for a traditional trusted intermediary. Or as one wrote, “Blockchain is an escrow of conclusive transaction evidence. That’s it ... All you need to know as a lawyer, a banker, a creditor, a vendor, a buyer, and a debtor is that blockchain eliminates transaction disputes.”

Without delving into computing and mathematics, one can see the essence of blockchain in a few fundamental features, well illustrated in, for example, The World Economic Forum’s “What is Blockchain?”, or IBM’s “Blockchain, How it works.” Here is a distillation:

- **A secure distributed ledger (or record, or registry):** The database or record of transactions is distributed among nodes, securely, verifiably, and simultaneously available to all participants in the transaction. It lives as a secure chain of time-stamped “blocks” or transactions, each subsequent one inextricably linked to the previous, and visible to all in near-real time;
- **Immutability:** This distributed record of transactions is secure; events cannot be changed. Participants can agree to change the direction of future transactions, but its distributed, shared nature and underlying consensus mechanism means no one participant can alter the record of transactions that have taken place.
- **No intermediary:** The immutability and the distributed, secure, peer-to-peer nature of the record means the trust rests in the record itself. A central authority as a repository or mechanism of trust is superfluous and thus not an element of the blockchain ecosystem.

APPLICATIONS AND POSSIBILITIES

So who uses blockchain, apart from Bitcoin? Other cryptocurrencies exist; however, the distributed, secure, immutable, and unmediated characteristics of blockchain generate the revolutionary potential. Hyperledger, a nascent open blockchain collaboration overseen by the Linux Foundation, envisions healthcare, finance, and supply chain applications. Ethereum, another blockchain platform (created by then-teenaged Russian-Canadian Bitcoin programmer Vitalik Buterin), supports applications by Microsoft, JPMorgan Chase, and others. Applications can embed private segments in the otherwise public blockchain, to enable confidential elements and regulatory oversight. Ethereum applications also can support so-called smart contracts – code that serves as autonomous contractual clauses, self-executing upon the happening of a contingency; and self-operating decentralized autonomous organizations.

Private or closed blockchain implementation can support secure record-keeping and transaction accountability internal to an organization. Public blockchain implementation may suit industries where trusted records and accountability are central; where transactions or deals have multiple or geographically disparate parties; where processes or transactions may be executed in quick succession; or where evidence may be susceptible to compromise or dispute.

One can imagine possibilities in the insurance sector; construction projects; multiparty deals; maritime or cross-border projects; and intellectual property rights transfers. Consider also internet-based sharing or gig economy industries with online payment models, like peer-to-peer ride-arranging and accommodation transactions—already the subject of consternation, given uncertain or absent consistent and agreed-upon regulatory environments.

Essentially, implementation is foreseeable in any deal with characteristics that mandate trust in the soundness of records and verifiability of transactions and, ordinarily, a central authority or intermediary, such as a financial institution, a regulatory body, a government agency, or a transnational legal regime.

IMPLICATIONS FOR THE LAW AND THE LEGAL PROFESSION

With blockchain comes the potential for a fundamental shift in business processes. That means that lawyers and the law itself have to be prepared for that shift.

Here's why: A central attraction of blockchain is trust without an intermediary. Now consider who often is a trusted intermediary, a holder of escrow, a seal of authenticity and validity. Should blockchain implementations become more widespread in traditional and online business, as some predict, the role of the lawyer could conceivably diminish. A recent paper argues that lawyers must be alert to the potential of blockchain.

The law has a key place in foreseeing and initiating appropriate regulatory environments. Potential for shifts in financial regulation is vast, but consider also smaller-scale environments such as the online sharing economy, with its dearth of effective regulation. A recognition of the possibilities accords traditional law a place in designing a successful regulatory and policy environment.

The secure, immutable transaction record at the heart of blockchain applications may even call for a renewed conceptualization of rules and expectations of evidence throughout the legal world, from transaction authentication to courtrooms. Similar evolutions in understanding of

validity and enforceability may be foreseeable in respect of smart contractual clauses or decentralized autonomous organization blockchain-built applications.

Whether transformation is abrupt or gradual, blockchain applications are already testing technological shifts in finance and business. Corresponding shifts in practice, skills, and legal education are due soon, if not now. Think of multidisciplinary firms, with lawyers writing legally valid clauses and terms which developing teams will code, or designing the legal framework within which an algorithm will operate. In a rapidly evolving and multidisciplinary environment, softer skills such as creativity and project management will remain essential. Though coding or deep math are unlikely additions to the legal skill set, basic understanding of technological applications will be essential to understand client needs and to envision the remarkable possibilities.

Is this another tech trend that too shall pass? Can one patiently and safely wait this one out? I suggest not. Blockchain is quite possibly revolutionary – as profound a development as the internet itself.

Kim Nayer is Associate University Librarian for the Law, Legal Research & Writing Program at the University of Victoria's School of Law.

[0] Comments

CBA (Canadian Bar Association) members may sign in to comment.