

Promise of Legal Disruption: Smart Contracts & Beyond

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A. Judges and Lawyers: Reach of Smart Contracts

There is no universal definition of “smart contract,” but the term generally refers to coded language placed on a blockchain. The benefits of such a contract are that it allows complete strangers (anonymity) to make commits that are then encapsulated into a block that is added to the blockchain (public or private). This eliminates the need for trusted intermediaries, such as banks, insurance companies, courts, escrow agents). The trust afforded knowing the identity of the other party and the use of intermediaries is replaced with *trustless trust* based on confidence in the technology. Once added to the blockchain, the commitments or obligations are self-executing. The contract is immutable (cannot be modified), breachless (self-executing), and the parties remain unknown to each other.

1. Are smart contracts' legal contracts? Are smart contracts' smart?

There are no simple answers to these questions. Often it is said that smart contracts are not legal contracts. Also, it has been said that smart contracts are dumb and traditional dumb contracts are smart. As to the first question, the better answer is that smart contracts may be contracts or can be part of a contract. Smart contracts are legal if they meet all the requirements for a contract—between parties with legal capacity, binding agreement, and a legal subject matter. Today, smart contracts mostly are used in the areas of financial and property transfers. A smart contract that provides that “if” Party A transfers title to a certain property “then” Party B will transfer €500,000. The transfer of title would automatically be entered into the block that would trigger a self-executing payment. This would be a legal contract. The larger use of smart contracts may be to effectuate a part of a natural language contract, such as transfer of title or funds.

Smart contracts are very smart when limited to the simplest of transaction. But given the overall *complexity and variety of contracts*, smart contracts are dumb due to the limitations of coding (if-then). Contracts are normally a compilation of hard and fixed terms (transfer, payment), which may be codable and standard-like terms (best-efforts, good faith, re-negotiate), which are

not codable. However, smart contracts may be made a bit smarter by using “oracles” especially when the parties want to adjust terms based upon a change of circumstances from the time of formation or conclusion of the contract and the time of performance.

2. What is LegalTech?

Smart contracts are part of a much more significant trend known as the *acceleration of technology*. This acceleration is being strongly felt in the legal profession. The abundance of LegalTech software products, some already managed by AI, will only accelerate as the number of LegalTech start-up companies continue to grow. LegalTech is produced by independent tech companies or may be created within a law firm (*proprietary LT*). LegalTech is already transforming the practice of law and court systems. The importance of technology has been made apparent during the current pandemic. The transformation or disruption of law and legal practice, as well as judicial practice, will become more pronounced with the development of advanced AI.

The question for judges (court systems) and lawyers is whether AI can be ignored, should AI software be ignored, and what are the risks of adopting AI controlled programs or systems. AI LegalTech is divided into AI that merely assists the legal function managed by the human lawyer and AI that autonomously works without human intervention. Further, AI as a learning machine can “decide” to make changes from its initial protocols by learning from its work. Brief answers to the above questions are as follows: (1) LegalTech cannot be ignored because those that use it will gain a competitive advantage over those who do not (more efficient work at a lower cost to clients or other court systems; generation of additional revenue streams). (2) From an *ethical perspective*, the lawyer and judge may have to use technology if it increases competency, accuracy, and justice. A judge’s primary role is the protection of justice and the lawyers’ primary role is to their clients. (3) The use of LegalTech will ultimately fall on the lawyer or judge given other ethical mandates, such as confidentiality of client information and faults in the AI system (bias, discrimination, inaccuracy, bad data).

B. Judges and Lawyers: Reach of LegalTech

The blockchain and LegalTech offer numerous opportunities or disruption to the court systems. Smart arbitration clauses can sidestep both the courts and established arbitral institutions. However, this type of arbitration is best suited to small claims and, therefore, increases access to justice.

Technology has already showed its prowess in *restructuring the court system* and the delivery of justice. China has established a number of *Internet courts* where the entire litigation process is performed online. Online Dispute Resolution (ADR) provides a cheaper method of resolution than traditional arbitration. For traditional courts the blockchain can be used to streamline and shorten processes. Examples include *Judicial Blockchain Platforms* and *Evidence Storage Platforms*, which allow for the presentation or transfer of evidence in a more secure way—evidence placed on the blockchain is tamper-proof. It also drastically reduces the costs of authentication. Judicial Blockchain Platforms may include secure links to police records and other government records.

In law practice, LegalTech will change what lawyer's do and how they do it. Tasks done by junior lawyers such as due diligence and legal research will largely be replaced by technology, and thereby reducing the number of lawyers needed. Alternatively, LegalTech has shown its power to enhance lawyers' work in areas such as:

- **Legal Research: Find cases, rank cases, find trends in cases, find reasoning of individual judges**
- **E-discovery**
- **Document Review & Contract Drafting**
- **Predictive Analytics**
- **Measuring Performance**
- **Interpreting Smart Contracts**

If lawyering tasks and skill sets change, legal education will need to proactively restructure its curriculum to include tech skills needed in present and future law practice. Also, law firms wanting a competitive advantage will invest in proprietary LegalTech.

The *inevitability of LegalTech* in legal practice is also ensured by three contextual factors. First, companies have become increasingly tech savvy and will want to interact with their lawyers in technological ways. Second, the role between in-house lawyers and law firms will be changed. In-house lawyers will seek out outside counsel that use LegalTech to communicate and to provide services at a lower cost. Also, in-house lawyers enabled by LegalTech may do work in-house that was previously performed by outside lawyers. Third, if law firms fail to coopt technology, then outside companies, such as big accounting firms, will offer similar services at a fraction of the cost.

In the end, AI and LegalTech will transform the delivery of legal systems. Although fewer lawyers may be needed that will be partially offset by the *creation of hybrid jobs* within law firms and court houses that involve pure tech skills to jobs that combine legal and tech skills. Also, technology may allow for the expansion of services provided by lawyers and create new revenue streams. Finally, AI and the blockchain may be seen as a direct threat to the European *notarial profession* if not in the short-term then in the long-term (security and time stamp provided by blockchain; AI's ability to review documents to ensure they comply with legal requirements).

C. Judges and Lawyers: Artificial Intelligence (AI) as Enhancement or Replacement

As noted above, LegalTech will have a disrupted impact on the practice of law and the creation of new types of court systems. This section focuses on the benefits and risks of current and future AI. At an abstract level, is the trade-off between enhanced cognitive abilities of AI and the idiosyncrasies of the human mind's use of emotion, judgement, and creativity. For current judges, the risks of AI include a lack of transparency, along with the threat of algorithms' *replicating human biases*.

Current Example: After years of negotiation, the American National Football League (NFL) and the NFL's Players Association reached a \$1 billion settlement, which went into effect in 2016. Both sides were represented by groups of elite lawyers and the settlement was confirmed by a Federal Court judge and eventually approved by the U.S. Supreme Court. The settlement fund is used to compensate former players suffering the consequences of head injuries resulting from numerous concussions and head injuries playing football. A number of agreed to factors determine what players qualify and the amount of their awards. Recently, it has been discovered that the algorithm used to implement the factors had placed the starting "normal" cognitive threshold for African American players at a lower benchmark than white players. The result is that it is easier for the white players to meet the criteria for an award of compensation. This type of algorithmic bias is called "race norming."

The **black box dilemma** refers to the fact that lawyers and judges are required to be competent and understanding of evidence and how evidence is processed, but at the same time the knowledge and understanding of the creation and use of algorithms is ultimately unreachable for lawyers.

If general or superintelligence is ever created that makes some type of **robo-judge** possible, creating bigger concerns. First, turning control of systems over to AI may lead to unexpected consequences. Can the science-fiction idea of the takeover of humankind by the robots become a reality. If so, AI without human intervention poses a threat to democratic institutions. Second, AI is the creation of humans, and as noted above, may be biased and discriminatory. Third, more problematic is the **alignment problem** where AI based on its underlying algorithm may make a decision that the AI "thinks" is in the best of its human creator, but in fact the human would have made a different decision. Since court systems are a core element of democracy and rule of law systems, the use of judicial AI systems should proceed with great caution.

Possible responses to the dangers of AI enhanced judging or replacement vary from the strict limitation of advanced AI in the judicial and litigation systems to quasi-Robo Judges. The idea of restrictive application of AI in legal proceedings is mere fallacy since the normative assessment of whether advanced AI should be allowed to develop will give way to the reality that it will develop. If the courts hold to the status quo than there is likely to be a **de-judicialization** of dispute resolution as courts become more and more inefficient and costly relative to alternatives, such as AI-Assisted ADR and Machine Arbitrators.

In the end, the dangers of advanced AI can be avoided by the recognition that any solutions to the risks of AI will be **interdisciplinary** in nature. In short, lawyers and judges will need to be educated in technology and technologists need to know something about law. The best AI will be a product of collaboration between technologists, the legal profession, regulators, and public policy makers. The best safety precaution is that an AI system should never be truly autonomous; where there is always the possibility of **human intervention**. For the judicial and the larger area of dispute resolution, any decision of a Robo-Judge should be appealable to a human judge.

D. Bibliography of Professor DiMatteo (Recent Publications)

DiMatteo, Larry A., M. Cannarsa & C. Poncibó, *Cambridge Handbook on Smart Contracts, Blockchain Technology & Digital Platforms* (Cambridge University Press 2020)

DiMatteo, Larry A., et al., *Lawyering in the Digital Age* (Cambridge University Press, in press 2021)

DiMatteo, Larry A., P. Sirena, C. Poncibó & M. Cannarsa, *Artificial Intelligence: Global Perspectives on Law & Ethics* (Cambridge University Press, upcoming, 2022)

Larry A. DiMatteo & Jiaying Christine Jiang, *Blockchain-Based Financial Services and Virtual Currencies: United States*, 8 J. EUROPEAN CONSUMER & MARKET L. (2019)

Larry A. DiMatteo, *Smart Contracts: Are they Contracts and are they Smart?*, 17 LA REVUE DES JURISTES DE SCIENCES PO 68 (2019)

Larry A. DiMatteo & Cristina Poncibó, *Quandary of Smart Contracts and Remedies: Role of Contract Law and Self-Help Remedies*, 26 EUROPEAN REV. PRIVATE L. 805 (2019)