

Copyright, Smart Contracts, and the Blockchain

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Balázs Bodó, Daniel Gervais, & João Pedro Quintais, [Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?](#), *Int'l. J. of L. & Info. Tech.* (September 2018).

There has been growing academic interest in the topic of decentralised, distributed open ledger technology—better known as the blockchain (see my [last jot](#)). While the literature has been substantial, the copyright implications of the blockchain have not received as much coverage from the research community, perhaps because the use cases have not been as prevalent in the media. Taking the usual definition of a blockchain as an immutable distributed database, it is easy to imagine some potential uses of the technology for copyright, and for the creative industries as a whole. Blockchain technology has been suggested for management of copyright works through registration, enforcement, and licensing, and also as a business model allowing micropayments and use tracking.

Blockchain and Smart Contracts: The Missing Link in Copyright Licensing? by three academics at the [Institute for Information Law](#) at the University of Amsterdam, tackles this subject in excellent fashion. The article has the objective of introducing legal audiences to many of the technologies associated with the blockchain. It goes into more specific treatment of various features, such as distributed ledger technology (DLT), digital tokens, and smart contracts, and the potential uses of these for copyright licensing specifically. The article is divided into three parts: an introduction to the technology, an analysis of its potential use for copyright licensing, and a look at possible problems.

The article explains that DLTs are consensus mechanisms which “ensure that new entries can only be added to this distributed database if they are consistent with earlier records.” (P. 4.) Other technical features include the ability to time-stamp transactions, and the potential to verify ownership of a work through the use of “wallets” and other cryptographic tools. This type of technology can be useful for various copyright test cases, such as allocating rights, registering ownership, and keeping track of expiration. Because you could have an immutable and distributed record of ownership and registration, it would be possible for DLTs to become a useful tool for the management of copyright works by collecting agencies.

Then the article explains the concept of tokenization and the use of digital tokens. Any sort of data can be converted into a digital token, and these can express all sorts of rights. For example, tokenizing rights management information (RMI) could be useful for the expression and management of copyright works through licensing. Further action can be taken through a smart contract, which is software that interacts with the blockchain to execute if-then statements and can also be used for running more complex commands and sub-routines expressing legal concepts. According to the authors, a large number of “dumb transactions” could be taken over by smart contracts, allowing the identification and distribution of royalties, and the payment of such. While the deployment of large-scale smart contract management mechanisms would be very complex, the authors envisage a system by which owners retain control over their own works, and use smart contracts to allocate and distribute rights directly to users by means of these automated transactions.

The article goes into detail on other potential uses, particularly the use of blockchain in registration practices, the potential for solving the orphan works problem, fair remuneration, and allocating rights

through RMs. This is done with both knowledge of the subject as well as rigour in the analysis of potential pitfalls.

The article's best section is its analysis of the many potential issues that may arise in using DLT and smart contracts in copyright. The authors astutely identify the complex nature of copyright norms, and comment that the many variations from one jurisdiction to another may prove to be too complex for a medium that is looking for ease of execution. The authors comment:

In the case of blockchain it is hard, at least as of 2018, to detect high levels of enthusiasm that would lead, in the short term, to the legal recognition/protection of copyright-replacing blockchain-related technological innovations. (P. 22.)

This matches [my own observations](#) about this subject. I have found that while the hype is considerable, there are just too many concerns about the potential uses of blockchain technologies in this area. There are valid concerns about the scalability of the technology, but also about the need to deploy complex technological solutions that could be equally implemented with other existing technology. The blockchain, we are told, can allow authors to publish their work with an immutable record of initial ownership, with automated remuneration awarded. But reality can be quite difficult to match with this vision. For starters, it may be difficult, if not impossible, to match existing rights, exceptions, and limitations in a manner that can be executed in a smart contract; the authors explain the complexity of international copyright law, with mismatched rights and responsibilities across jurisdictions. Similarly, blockchain systems are expensive, and if the market is currently working well with offline and online systems, then it is difficult to see how a cumbersome, slow, and wasteful solution would be adopted. The authors finish the discussion stating that there is a familiar feeling to the blockchain discussion, as DRM (digital rights management) was presented a decade or more ago as the enforcement solution that would end copyright infringement. Needless to say, that was not the case.

The question at the heart of any blockchain implementation always remains the same, what is the problem that you are trying to solve, and is the blockchain the appropriate technology to solve that issue?

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