

platform that allows photographers and agencies to store their image assets and associated metadata and track ownership, rights and license transactions regardless of where those images are used and by whom.<sup>57</sup>

### ***(ii) Smart IP rights***

One of the most interesting features of the technology is the possibility to use smart contracts that self-execute upon fulfilment of certain conditions. Smart contracts built onto a blockchain could prove particularly useful to ensure the automatic, flexible and fair payment of rights-holders.

In the music industry, for example, where monitoring the use of creative works is a particularly acute problem, one could imagine that a songwriter could post a song onto the blockchain with a smart contract that would specify the contact details of the rights-holder(s) and the conditions applicable to the use of the work. This would make it easier for third parties to contact the rights-holder(s) to obtain a license to use the work, and for the songwriter and other rights-holders to obtain payment for the use of his/her creations. Licenses granted through smart contracts would be self-executing upon use of the work. Payments of royalties would be automatically executed and amounts of royalties charged could be made flexible and adjusted based on usage (frequent users, for example, could be charged less than one-time users).

Such arrangements already exist; for example, the singer Imogen Heap, a best-selling UK recording artist and founder of Mycelia, a research and development hub for music makers, launched in 2017 a pilot project with the Featured Artists Coalition (FAC) and Digital Catapult involving blockchain technology. The pilot project, which covered two Imogen Heap's songs at the time of writing, enables users to purchase licenses to download, stream and mix the songs via smart contracts. Payments are sent automatically to all rights-holders upon use of the songs. Building on the experience of the pilot project, Mycelia is now developing a Creative Passport to allow interested music-makers to use the technology to automatize and personalize the management of their IP rights. The objective of the Mycelia Creative Passport project is to create a "fair, sustainable, and vibrant music industry ecosystem" in which all those involved, from musicians to distributors, are paid fairly for their work.<sup>58</sup> Blockchain "could help musicians make money again", as Imogen Heap notes (Heap, 2017).

Can the use of Blockchain lead to a complete decentralization of copyright management and threaten well-established intermediaries such as labels and record companies, performance rights organizations and digital streaming services such as Spotify? Nothing is less certain. These intermediaries play an important