

marketing and management role that a distributed ledger cannot fulfil at the moment. In addition, they are likely to resist and counter any attempt to marginalize them.

In fact, aware of the stakes at play, three of the world's biggest licensing and royalties collection companies – ASCAP (United States), SACEM (France) and PRS for Music (United Kingdom) – joined forces in April 2017 to develop a prototype of metadata recording and management using the IBM blockchain to make it easier to determine ownership and speed up licensing and royalty payments (Smirke, 2017). That same month, music streaming company Spotify acquired Mediachain Labs,<sup>59</sup> a startup that develops blockchain solutions to solve problems of attribution of rights. With this acquisition, Spotify hopes to better connect artists and other rights-holders with the tracks hosted on Spotify's service and help solve music's attribution problems (Higgins, 2017b). These developments would seem to suggest that the industry is likely to remain consolidated, and that we are more likely to witness a reorganization than a revolution.

Blockchain could also be an interesting tool to manage “fractional ownership”, i.e. rights owned by various holders, a situation that has become relatively standard nowadays, in particular in the musical industry, as seen earlier, and for patented innovations. In the case of patents, in many cases, innovation is no longer developed in-house. Collaboration between various individuals and entities has become the norm, or close to it, making the management of patent rights a more complex endeavour. Blockchain could help to register and track who has contributed what and who will obtain future shares of revenue, and to ensure the automatic remuneration of the various rights-holders.

This also holds true for traditional knowledge. The current system of patent protection was developed “in the age of industrialization in the West and developed subsequently in line with the perceived needs of technologically advanced societies”, as WIPO notes on its website.<sup>60</sup> Indigenous people and local communities in developing countries have, for several decades, argued that their traditional knowledge, i.e. the living body of knowledge that is developed, sustained and passed on from generation to generation within a community and that often forms part of its cultural or spiritual identity, such as traditional medicines, should be granted effective protection, and that authorities in third-party countries should ensure that patent applicants have had authorized access from national authorities to the genetic resources and related traditional knowledge before granting a patent. In India, where traditional knowledge plays a key role, a searchable database of traditional medicine – not blockchain-based – has been established and can be used as evidence of prior art by patent examiners when assessing patent applications. The global, immutable and transparent nature of Blockchain, combined with the possibility to