For physical objects, scannable QR* codes attached to a work or product can give access to the history of the work or product and serve to prove authenticity. A myriad of startups is developing solutions to track and identify products such as pharmaceuticals, electronics, and luxury and fashion items, and to ensure that consumers or producers receive an authentic product. Everledger for diamonds, Blockpharma for pharmaceutical products, as well as Blockverify, VeChain and Chronicled for protection against counterfeiting of a range of products, are some of the companies active in this field. Fashion brand Babyghost, for example, partnered with VeChain, a startup that focuses on protecting brands, trademarks and products, to incorporate in each garment a VeChain chip embedded with a public key stored on the blockchain. By scanning the QR code on the label with their smartphone, consumers can access the story of the garment, including information about the designer and the design, and verify the authenticity of the product (see also Section 4.1(a) and Campbell, 2016). In most of these cases, the potential of Blockchain is realized thanks to the use of other technologies and innovations, in particular the IoT.

One can easily imagine the opportunities that blockchains open for fighting counterfeiting in international trade. The TRIPS Agreement gives WTO members the possibility to authorize customs officials to act upon their own initiative, *ex officio*, to suspend the release of goods for which there is evidence that IP rights are being infringed.[65] A key problem is the lack of expertise of most customs officials in detecting counterfeit goods.

The use of the technology to trace the provenance of products, from factory to end-users, could be a precious tool to demonstrate *prima facie* evidence of infringement. A brand owner using blockchain technology to record the history of its products could, for example, inform customs and enforcement agencies that its products include a crypto-embedded tag linked to the blockchain that proves its origin. The absence of a tag or an incorrect tag would then make it easy for enforcement officers to detect counterfeits (Burstall and Clark, 2017). The stakes are high, not only in areas such as pharmaceuticals and luxury products, but also in the car and aeronautics industries, where, as in the health sector, counterfeits can be very dangerous.

However, there is growing concern that Blockchain could make the enforcement of IP rights for digital goods, in particular copyright, nearly impossible. While data on a blockchain cannot be easily altered, nothing can prevent a malicious user from submitting a pirated version of the work to the blockchain – and there is no obligation for the infringer to attach any kind of identifying data to the upload. The decentralized and anonymous nature of public blockchains makes it extremely