

Gabriela Sacha
ORCID: 0000-0001-7065-6863
Jagiellonian University

DOI: 10.19195/1733-5779.29.14

Blockchain and its relevance to intellectual property law in the fashion industry

JEL Classification: K19

Keywords: blockchain, new technologies, intellectual property law, IP law, fashion

Słowa kluczowe: *blockchain*, nowe technologie, prawo własności intelektualnej, moda

Abstract: Taking into account the growing influence of technology across many industries, this paper demonstrates the implications of the use of blockchain by the fashion industry for protecting intellectual property. In the face of a lack of global regulations on the issue, this paper attempts to outline legal considerations of using blockchain in this new context. The analytical research was based on the European Parliament Resolution on Distributed Ledger Technologies and Blockchains as well as the American, Belarusian, Maltese and Gibraltar laws regulating blockchain. An outline of blockchain technology leads into a description of how it may be beneficial in different sectors of the economy. This paper aims to present ways in which blockchain may influence intellectual property law and how it may be applied in the fashion industry. Additionally, by pointing out the risks associated with blockchain, this paper highlights the need for implementing international regulations regarding this technology.

Technologia *blockchain* i jej znaczenie dla prawa własności intelektualnej w branży mody

Abstrakt: Biorąc pod uwagę rosnący wpływ technologii w wielu gałęziach przemysłu, autorka niniejszego opracowania przedstawia w nim konsekwencje wykorzystania technologii *blockchain* (łańcucha bloków) przez branżę mody w celu ochrony własności intelektualnej. W obliczu braku światowych regulacji w tym zakresie w artykule podjęto próbę nakreślenia prawnych aspektów wykorzystania technologii *blockchain*. Badania analityczne zostały przeprowadzone na podstawie Rezolucji Parlamentu Europejskiego w sprawie technologii rozproszonego rejestru i łańcuchów bloków oraz amerykańskich, białoruskich, maltańskich i gibraltarskich przepisów regulujących technologię *blockchain*. Omówienie zarysu działania technologii *blockchain* prowadzi do wskazania, w jaki sposób technologia ta może być przydatna w różnych sektorach gospodarki. Celem artykułu

jest przedstawienie, w jaki sposób technologia *blockchain* może wpływać na prawo własności intelektualnej oraz jak może być stosowana w przemyśle mody. Ponadto, zwracając uwagę na zagrożenia związane z technologią *blockchain*, w tekście podkreślono potrzebę wprowadzenia międzynarodowych regulacji dotyczących tej technologii.

1. Introduction

Blockchain has a range of applications and far reaching consequences of its use. The technology is best known for its use in cryptocurrencies, but has piqued the interest of many other industries outside of the financial sector. These are as diverse as vehicle manufacturers and fashion houses. This article aims to demonstrate the legal implications of the use of blockchain to combat the sale of counterfeit goods and ensure the authenticity of products. In this application, blockchain would be used for the protection of intellectual property, which shows just how versatile the use of blockchain can be. Although the technology is an influential one, there are still no global or supranational regulations covering it.

The importance of blockchain technology has been recognized by the European Commission, which initiated the European Union Blockchain Observatory and Forum in February 2018. The Commission points out that the technology in the chain of blocks will have a significant impact on digital services and transform business models in many areas of activity, e.g., healthcare, insurance, finance, energy, logistics, public administration services, as well as the management of intellectual property rights.¹ So far, EUR 141 million has been allocated by the EU to blockchain-related projects, and potentially up to EUR 340 million could be committed before the end of 2020.²

Since May 2019, 29 European countries³ have signed the Declaration creating a European Blockchain Partnership (EBP) and agreed to cooperate in the establishment of a European Blockchain Services Infrastructure (EBSI) that will support the delivery of cross-border digital public services, with the highest standards of security and privacy.⁴ The aim of the Partnership is to enable cooperation between countries for the exchange of technical and regulatory expertise and experience in order to prepare EU-wide blockchain implementation in the European digital market for the benefit of the public and private sectors. Mariya Gabriel, Commissioner for Digital Economy and Society stated that

¹ Business Insider Polska, "Komisja Europejska stawia na blockchaina," <https://businessinsider.com.pl/technologie/blockchain/powstaje-unijne-forum-ds-blockchaina/et3398d> (accessed: 27.05.2019).

² European Commission official website, "Blockchain technologies," <https://ec.europa.eu/digital-single-market/en/blockchain-technologies> (accessed: 27.05.2019).

³ European Commission official website, "Hungary joins the European Blockchain Partnership," <https://ec.europa.eu/digital-single-market/en/news/hungary-joins-european-blockchain-partnership> (accessed: 27.05.2019).

⁴ European Commission official website, "Blockchain technologies"...

in the future, all public services will use blockchain technology [as it is] a great opportunity for European and Member States to rethink their information systems, to promote user trust and the protection of personal data, to help create new business opportunities and to establish new areas of leadership, benefiting citizens, public services and companies.⁵

The European Parliament on 3 October 2018 has also adopted the Resolution “on distributed ledger technologies and blockchains: building trust with disintermediation.”⁶ The resolution indicates strategic directions of the application of Distributed Ledger Technology (DLT) both in the EU and in Member States. The resolution points out sectors in which this technology will be of greatest value, among them the energy sector, transport, education, the healthcare sector, environmental protection, the financial sector, as well as creative industries and copyright. The European Parliament has also included some recommendations for the European Commission regarding DLT in different sectors which may result in further European regulation brought out by the Commission concerning this technology.

On the international level, the International Association for Trusted Blockchain Applications (INATBA) was launched on 3 April 2019 with its 105 founding member organizations from Europe, North America and Asia. INATBA brings together industry, startups and Subject-Matter Experts (SMEs), policy makers, international organizations, regulators, civil society and standard setting bodies to support blockchain and Distributed Ledger Technology (DLT) to be mainstreamed and scaled-up across multiple sectors.⁷ INATBA aims to maintain “a permanent and constructive dialog with public authorities and regulators that will contribute to the convergence of regulatory approaches to blockchain and other distributed ledger technology globally.”⁸ It is INATBA’s ambition to promote public and private sector collaboration, regulatory convergence, legal predictability and ensures the system’s integrity and transparency.⁹

INATBA, however, is not the only international association created in the past few years with the aim of promoting and developing new applications of blockchain technology. There have been over 250 identified consortia and councils of blockchain in the world. These consortia and councils are based mainly in the

⁵ European Commission official website, “European countries join Blockchain Partnership,” <https://ec.europa.eu/digital-single-market/en/news/european-countries-join-blockchain-partnershi>, (accessed: 27.05.2019).

⁶ European Parliament resolution of 3 October 2018 on distributed ledger technologies and blockchains: building trust with disintermediation (2017/2772(RSP)).

⁷ European Commission official website, “Launch of the International Association of Trusted Blockchain Applications — INATBA,” <https://ec.europa.eu/digital-single-market/en/news/launch-international-association-trusted-blockchain-applications-inatba> (accessed: 27.05.2019).

⁸ International Association of Trusted Blockchain Applications official website, <https://inatba.org> (accessed: 27.05.2019).

⁹ European Commission official website, “Launch of the International Association...”

USA and the United Kingdom, but also in Japan, China, Canada, Luxembourg and Dubai.¹⁰ Their main areas of interest are dissemination of knowledge about blockchain technology, discovering its possible applications and implementation in various areas of the economy.¹¹ It is worth emphasizing that those consortia and councils are transnational, cross-border and even global in nature.¹²

Considering the above, it is evident that there is a wider recognition of blockchain and DLT as a potential tool for implementing changes to public and private sectors. Blockchain technology is experiencing global support on the financial, organizational and technological level. Its well-recognized applications concern mainly the financial sector. However, blockchain can be used in creative industries as well. It may prove to be a solution to intellectual property law enforcement issues. Blockchain technology also has the potential to become a tool for the prevention of the counterfeiting of goods in the fashion industry. In order to present applications of this technology in creative industries, it is important to understand how blockchain works.

2. How does blockchain technology work?

Blockchain was originally invented as a technical basis for digital currencies such as Bitcoin. This technology was initially introduced as a type of peer-to-peer (P2P) cashless payment based on excluding the necessity of a central authority, or a “middleman.” Since then, it has evolved in many directions.¹³ Because the technology itself is relatively new, its systematized definition is yet to be created. Depending on the source, there is a number of explanations of how blockchain technology works. One of them defines blockchain as

a type of database that takes a number of records and puts them in a block (rather like collating them on to a single sheet of paper). Each block is then “chained” to the next block, using a cryptographic signature [which] allows block chains to be used like a ledger, which can be shared and corroborated by anyone with the appropriate permission.¹⁴

It can be also defined by comparison. Ledgers created by blockchains may be compared to ledgers used for centuries by banks to maintain databases of account

¹⁰ M. Garstka, K. Piech, *Konsorcja i Rady Blockchain na Świecie*, Warszawa 2017, p. 4, <https://www.gov.pl/documents/31305/0/porozumienia-v1.pdf/7d0d1eac-0b54-434c-a322-48b42f77fd29> (accessed: 28.05.2019).

¹¹ *Ibidem*.

¹² D. Szostek, *Blockchain a prawo*, Warszawa 2018.

¹³ The European Union Blockchain Observatory and Forum, “Blockchain innovation in Europe,” p. 6, <https://www.eublockchainforum.eu/reports> (accessed: 28.05.2019).

¹⁴ The UK Government Chief Scientific Adviser, “Distributed Ledger Technology: Beyond block chain. A report by the UK Government Chief Scientific Adviser,” p. 17, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf (accessed: 28.05.2019).

transactions, or records of land ownership kept by governments. These ledgers have been controlled by a central authority responsible for checking the legitimacy of transactions, and which possessed the authority to access certain information. Blockchain offers the same record-keeping functionality but without a centralized architecture.¹⁵ This technology allows large groups of people and organizations to permanently record information without a central authority.¹⁶ Blockchain is one of several types of Distributed Ledger Technologies (DLTs) which creates chains of blocks placed in chronological order, allowing for the security and integrity of data. These technologies “create a trustworthy and transparent record by allowing multiple parties to a transaction to verify what will be entered onto a ledger in advance without any single party having the ability to change any ledger entries later on.”¹⁷

This brings us to one of blockchain’s biggest advantages — immutability. Once entered into a ledger, the block cannot be replaced, changed or modified. Blockchains can be divided into two categories: they may be “permissioned” when the accessibility and the ability to check and add transactions to the ledger is limited to restricted groups of actors or “permissionless” when anyone may access and add transactions to the ledger since there is no central authority which could deny permission to do that. The latter is based on the system where multiple computers hosting blockchains verify and validate the transactions. Hence, blockchains are nearly impossible to hack, since a cyberattack would have to target a large number of copies of such chains simultaneously, rather than a centralized version.¹⁸

3. Blockchain legal regulations

Even though blockchain is a technology recognized by many countries, it has not been yet legally regulated at the international level. Currently, there is no uniform international approach to blockchain. However, the above-mentioned consortia and councils may lobby and influence the implementation of an international treaty concerning blockchain and DLTs. As of now there have been several legal regulations at the national level.

In the United States, digital currency is recognized and legalized on the federal level. The U.S. Congress has created the Congressional Blockchain Caucus to handle legislation pertaining to Digital Ledger Technology (DLT) and cryptocurrencies. Since then, there have been several bills enacted which encourage

¹⁵ P. Boucher, S. Nascimento, M. Kritikos, *How Blockchain Technology Could Change Our Lives: In-depth Analysis*, European Parliamentary Research Service, Brussels 2017, p. 5.

¹⁶ The European Union Blockchain Observatory and Forum, “Blockchain innovation...”

¹⁷ B. Clark, “Blockchain and IP law: A match made in crypto heaven?,” *WIPO Magazine* 2018, https://www.wipo.int/wipo_magazine/en/2018/01/article_0005.html (accessed: 28.05.2019).

¹⁸ Ibidem.

the federal government to monitor blockchain entities that may or may not need to register as money transmitters.¹⁹ Moreover, there are several federal agencies that regulate blockchain-related businesses in the U.S.²⁰ State legislators of e.g., Arizona, California, New York, and Vermont have already implemented some regulations concerning blockchain.²¹ Nevertheless, it was the Wyoming legislator, who recently “enacted a total of 13 blockchain-enabling laws, making it the only U.S. state to provide a comprehensive, welcoming legal framework that enables blockchain technology to flourish, both for individuals and companies.”²² Experts believe that other states and the U.S. Congress will soon implement their laws on blockchain following Wyoming’s lead.

Even though the United States is considered to be one of the most technologically advanced countries in the world, it was not the first to implement an official regulatory framework for the blockchain industry. Belarus was the first country to do so. On 21 December 2017, the Belarusian president signed the Ordinance No. 8 on digital economy development, which focused on blockchain and cryptocurrency-related innovations.²³ DLT-related regulations have also been implemented in Gibraltar. Commencing on 1 January 2018, Financial Services (Distributed Ledger Technology Providers) Regulations 2017,²⁴ set principles which DLT providers and companies using blockchain need to follow. A couple of months later Malta enacted two bills — The Malta Digital Innovation Authority Act²⁵ and Innovative Technology Arrangements and Services Act,²⁶ both concerning distributed ledger technologies.

National legislators introduce legal regulations regarding distributed ledger technologies. However, given the transnational nature of blockchain and related technologies, creating an international law regulating these matters would be far more effective.

¹⁹ A.F. Kowlessar, “Blockchain: U.S regulation and governance,” <http://www.financialpolicy-council.org/blog/blockchain-u-s-regulation-and-governance/> (accessed: 28.05.2019).

²⁰ D. Karatkevich, “Blockchain and the law: Regulations around the world,” <https://openledger.info/insights/blockchain-law-regulations/> (accessed: 26.05.2019).

²¹ H. Morton, “Blockchain state legislation,” <http://www.ncsl.org/research/financial-services-and-commerce/the-fundamentals-of-risk-management-and-insurance-viewed-through-the-lens-of-emerging-technology-webinar.aspx> (accessed: 28.05.2019).

²² C. Long, “What do Wyoming’s 13 new Blockchain laws mean?,” <https://www.forbes.com/sites/caitlinlong/2019/03/04/what-do-wyomings-new-blockchain-laws-mean/#2cbe2ae25fde> (accessed: 28.05.2019).

²³ D. Karatkevich, *op. cit.*

²⁴ Gibraltar Financial Services (Distributed Ledger Technology Providers) Regulations 2017, <https://www.gibraltarlaws.gov.gi/articles/2017s204.pdf> (accessed: 26.05.2019).

²⁵ Malta Digital Innovation Authority Act, <http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12873&l=1> (accessed: 26.05.2019).

²⁶ Maltese Innovative Technology Arrangements and Services Act, <http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12874&l=1> (accessed: 26.05.2019).

4. How can blockchain be beneficial?

There are several widely recognized advantages of blockchain. One of them is the fact that the technology positively influences the transparency of transaction histories, as all network participants share the same documentation.²⁷ Blockchain technology offers better security of transactions, as every one of them needs to be accepted before encrypted and linked to the previous transactions. Hence, data allocated in blockchains is far more difficult to hack, as it is stored across a network of computers.²⁸ Another advantage of blockchain is that it improves traceability of transactions. Once linked to the previous transactions, the block cannot be changed or replaced. Recording e.g., complex supply chain transactions on a blockchain enables one to create an audit trail that shows exactly where an asset came from. This transaction trail is likely to help with authenticity verification as well as fraud prevention.²⁹ Moreover, blockchain reduces the cost of transactions, as it excludes the necessity of middleman supervision and decreases the time spent of transactions.³⁰

The European Parliament has recognized a width of possible application not only of blockchain, but also distributed ledger technologies in general.³¹ The Parliament points out that these technologies may reduce corruption, detect tax evasion, allow the tracking of unlawful payments, facilitate anti-money laundering policies. Moreover, these technologies can be applied to patent and copyright databases, online voting, verification of academic qualifications, insurance policies, medical and real estate records, tracking distribution of products e.g., in the fashion or pharmaceutical industry, and many others. DLT has also enabled the evolution of smart contracts, as some blockchain solutions can hold, execute and monitor contractual codes. Nevertheless, its risks relating to jurisdiction are not yet completely known.

5. Blockchain and its relevance to intellectual property law

The European Parliament stated that “DLT can significantly improve key sectors of the economy as well as the quality of public services, providing high-level transactional experience to consumers and citizens and reducing the costs incurred

²⁷ M. Hooper, “Top five blockchain benefits transforming your industry,” <https://www.ibm.com/blogs/blockchain/2018/02/top-five-blockchain-benefits-transforming-your-industry/> (accessed: 28.05.2019).

²⁸ *Ibidem*.

²⁹ *Ibidem*.

³⁰ *Ibidem*.

³¹ European Parliament resolution of 3 October 2018 on distributed ledger technologies and blockchains: building trust with disintermediation.

by them.”³² Taking into consideration the above, blockchain as a technology may be beneficial in many sectors of the economy. Initially created for FinTech purposes, it is now recognized to be an attractive tool in creative industries, providing a framework of transparency, certainty and security. Therefore, blockchain became also relevant in many areas of intellectual property law. This technology is

already being used to track the progress of goods in a supply chain, which is of interest to many IP-intensive sectors including the pharmaceutical, automotive, luxury and consumer goods industries, where the traceability of goods is important and counterfeit and grey goods are of concern.³³

In the resolution cited above, the European Parliament has emphasized that DLT can enable the tracking and management of intellectual property and facilitate copyright and patent protection.³⁴ The Parliament has also stressed that DLT can enable greater ownership and creative development by artists through an open public ledger which would result in clear identification of ownership and copyright, as well as help link creators to their work, thus enhancing safety and functionality in the context of a collaborative and open innovation ecosystem. Additionally, it was noted that the author may benefit from the transparency and traceability brought by distributed ledger technology to the use of their creative content. Excluding intermediaries, with regard to authors receiving payment for their creative content is also meant to be beneficial for them.

In the intellectual property (IP) industries, blockchain and other distributed ledger technologies may be possibly applied to: providing evidence of creatorship and provenance authentication, registering and clearing IP rights; controlling and tracking the distribution of registered and unregistered IP; providing evidence of genuine or first use in trade or commerce; management of digital rights (e.g., online music sites); establishing and enforcing IP agreements, licenses or exclusive distribution networks through smart contracts; and transmitting payments in real-time to IP owners.³⁵ Blockchain may be also applied for purposes of detecting counterfeit or stolen goods, which is of particular use for creative industries such as the fashion industry.

Applying DLT to create a blockchain-based IP rights register would establish a transparent history of data assigned to a specific trademark, design or patent. Blockchain technology may also contribute to a decrease in the number of disputes arising on the basis of unregistered IP rights, such as copyright. According to the Berne Convention for the Protection of Literary and Artistic Works,³⁶ copyright comes into existence with the formation of the work, and is not conditional

³² Ibidem.

³³ B. Clark, op. cit.

³⁴ European Parliament resolution of 3 October 2018 on distributed ledger technologies and blockchains: building trust with disintermediation.

³⁵ Ibidem.

³⁶ The Berne Convention for the Protection of Literary and Artistic Works, 1886.

upon compliance with any formality. Therefore, there is no registry keeping track of works protected by copyright. As a result, disputes arising on the grounds of copyright are very difficult to solve, hence unregistered IP rights may in some cases turn out to be difficult to enforce. Uploading information concerning the original work (such as concept, qualification requirements and the author) to a blockchain would create solid evidence as to the genuine status of this type of work. Blockchain may be also beneficial in terms of patent protection. The technology of encrypted “hashes” recorded on the blockchain enables the proof of the existence of a certain document, without revealing any of its content. “It has been suggested that innovators could use this process to protect their work by recording a hash of their patent description [...] on the blockchain.”³⁷ Creating such blockchain-related IP rights registries would positively influence the transparency of IP protection and its security by providing a trustworthy data record. In addition, such databases would have the potential to exclude some of the disputes arising from IP rights and add confidentiality to the process.

6. Blockchain and its relevance to intellectual property law in the fashion industry

The fashion world is fast-paced and continually evolving. Constantly changing trends drive the development of new products, which are often available to a customer for only a short period of time. Providing efficient intellectual property protection is extremely difficult, due to the transient nature of this industry resulting from the fast-paced changes of trends, and the ongoing creative process. Simultaneously, this protection is crucial in the view of the constantly expanding counterfeit goods global market. In terms of the fashion industry, blockchain may reduce the complexity of the supply chain and increase transparency of the production process, providing more effective enforcement of IP rights protecting fashion designs³⁸ and reducing costs.

Given the above-mentioned nature of the fashion industry, designers often rely on unregistered IP rights, such as copyright, to protect their works. “Enforcement of unregistered rights gives rise to difficulties of proving matters, such as ownership of the design, whether it is still in the period of protection and whether qualification requirements have been met.”³⁹ Immutable data recorded on a blockchain may be effectively used to prove certain facts about the product or a design, relating

³⁷ P. Boucher, S. Nascimento, M. Kritikos, *op. cit.*, p. 11.

³⁸ B. Whittle, “Fashion meets the blockchain: How blockchain can solve fashion’s woes,” <https://coincentral.com/fashion-meets-the-blockchain-how-blockchain-can-solve-fashions-woes/> (accessed: 29.05.2019).

³⁹ R. Burstall, B. Clark, “Blockchain, IP and the fashion industry,” <https://www.managingip.com/Article/3667444/Blockchain-IP-and-the-fashion-industry.html> (accessed: 29.05.2019).

to its use, author, legal status, original shape or form. As a result, the enforcement of the IP rights and the detection of potential infringers may prove easier.

Blockchain may prove to be a beneficial tool for providing evidence of the use of trademarks in trade or commerce. This would be possible if the transactions relating to a product bearing a particular trademark were recorded on a blockchain. This immutable record would likely simplify the process of use of a trademark in trade or first use in commerce, depending on the jurisdiction, as well as provide other evidence such as evidence of acquired distinctiveness or secondary meaning.⁴⁰ Such application of blockchain technology would significantly lower the burden of collecting relevant evidence for IP rights holders.

Certification trademarks are another field of potential application of blockchain technology in the fashion industry. They are a relatively new type of trademark in Europe, as their registration is possible as of 1 October 2017. The EU trademark Regulation 2017/1001⁴¹ in its Article 83(1) defines a certification mark as a mark that is “capable of distinguishing goods or services which are certified by the proprietor of the mark in respect of material, mode of manufacture of goods or performance of services, quality, accuracy or other characteristics, with the exception of geographical origin, from goods and services which are not so certified.” In that case, blockchain could be used to certify that products meet certain established criteria or standards, for example the Global Organic Textile Standards, which indicates that the goods were made from organic fibers. Recording information concerning products bearing certification trademarks on the “permissioned” blockchains would enable immediate identification of fake certification marks.

Blockchain may also be applied to track the stages in the manufacturing process and the progress through the complex supply chain. Brand owners could record where goods are placed on the market — allowing them to distinguish grey goods in cases of parallel imports and identify where they left the supply chain.⁴²

At the beginning of 2019, the European Union Intellectual Property Office (EUIPO) has announced the launch of the “Anti-Counterfeiting Blockathon Forum,” which will bring together people and organizations to shape and deliver the future anti-counterfeiting infrastructure based on blockchain.⁴³ The Executive Director of the EUIPO, Christian Archambeau, stated that “in today’s fast moving world, we need to use the latest technology to keep a reliable record of the origin of goods

⁴⁰ Ibidem.

⁴¹ Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union trade mark, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1506417891296&uri=CELEX:32017R1001> (accessed: 29.05.2019).

⁴² R. Burstall, B. Clark, op. cit.

⁴³ EUIPO Press Release, “Using blockchain in the fight against counterfeiting — EUIPO launches a Forum to support concrete solutions in that field,” https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/News/Blockchain_Forum_launch_PR_en.pdf (accessed: 29.05.2019).

and their progress through international supply chains. Blockchain's ability to create permanent and unchangeable records makes it one of the best candidates to deliver results on the ground.⁴⁴ In the fashion and luxury goods industry, where counterfeiting is a substantial problem, blockchain may prove to be an effective tool for preventing this phenomenon from spreading even further. This aim can be achieved by embedding fashion designs, such as bags or other leather goods, with scannable blockchain-connected tags, tamperproof seals, imprints or chips hosting the information about the certain product, accessible e.g., via mobile applications. This application of blockchain makes it nearly impossible to put counterfeited goods on the market, as the absence of such an interactive tag or incorrect data recorded on it would indicate that the product is in fact a counterfeit. These types of blockchain solutions have already been implemented into some luxury brands' policies. At the turn of May and June 2019, LVMH, a French multinational luxury goods conglomerate, owner of such brands as Louis Vuitton, Christian Dior, Fendi, Loewe or Givenchy, announced plans on implementing blockchain technology for authenticating its luxury brands.⁴⁵ AURA, a Microsoft platform, is said to provide evidence of authenticity of luxury items and trace their origins from raw materials to the point of sale and beyond to used-goods markets.⁴⁶ Nevertheless, blockchain technology can inevitably produce no effect in the case of consumers who knowingly buy counterfeited products, fully aware of their infringing nature.

7. Final thoughts and conclusion

Blockchain as a technology has the potential to influence and even revolutionize many sectors of the economy, providing greater transparency in core business functions, enhancing security and traceability of data. One of these sectors is the fashion industry, where blockchain may improve the effectiveness of intellectual property rights enforcement as well as introduce enforceable solutions for anti-counterfeiting. Nevertheless, there are also some risks associated with the application of this relatively new technology, as regulatory and legal environments are still under development and as such are open for interpretation.⁴⁷ The main con-

⁴⁴ Ibidem.

⁴⁵ The Paypers website, "French fashion retailer incorporates Microsoft's blockchain into luxury brands," https://www.thepayers.com/cryptocurrencies-bitcoin-virtual-currencies/french-fashion-retailer-incorporates-microsoft-s-blockchain-into-luxury-brands/778953-39?utm_source=dlvr.it&utm_medium=twitter# (accessed: 29.05.2019).

⁴⁶ I. Allison, "Louis Vuitton owner LVMH is launching a blockchain to track luxury goods," <https://www.coindesk.com/louis-vuitton-owner-lvmh-is-launching-a-blockchain-to-track-luxury-goods> (accessed: 29.05.2019).

⁴⁷ EY website, "The risks and opportunities of Blockchain: Disruption in the boardroom," <https://www.ey.com/gl/en/issues/governance-and-reporting/center-for-board-matters/ey-the-risks-and-opportunities-of-blockchain> (accessed: 29.05.2019).

cerns include the governing laws and jurisdictions, enforceability of smart contracts, data security and privacy concerns, reliable rules and definitions for smart contracts.⁴⁸ It is therefore clear that these issues should urgently be addressed by appropriate transnational regulations, which would undoubtedly permeate the practice of IP law and the fashion industry.

References

Legislative acts

- The Berne Convention for the Protection of Literary and Artistic Works, 1886.
 European Parliament resolution of 3 October 2018 on distributed ledger technologies and blockchains: building trust with disintermediation (2017/2772(RSP)).
 Gibraltar Financial Services (Distributed Ledger Technology Providers) Regulations 2017, <https://www.gibraltarlaws.gov.gi/articles/2017s204.pdf>.
 Malta Digital Innovation Authority Act, <http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12873&l=1>.
 Maltese Innovative Technology Arrangements and Services Act, <http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12874&l=1>.
 Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union trade mark, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1506417891296&uri=CELEX:32017R1001>.

Secondary sources

- Boucher P., Nascimento S., Kritikos M., *How Blockchain Technology Could Change Our Lives: In-depth Analysis*, European Parliamentary Research Service, Brussels 2017.
 Szostek D., *Blockchain a prawo*, Warszawa 2018.

Internet sources

- Allison I., “Louis Vuitton owner LVMH is launching a blockchain to track luxury goods,” <https://www.coindesk.com/louis-vuitton-owner-lvmh-is-launching-a-blockchain-to-track-luxury-goods> (accessed: 29.05.2019).
 Burstall R., Clark B., “Blockchain, IP and the fashion industry,” <https://www.managingip.com/Article/3667444/Blockchain-IP-and-the-fashion-industry.html> (accessed: 29.05.2019).
 Business Insider Polska, “Komisja Europejska stawia na blockchaina,” <https://businessinsider.com.pl/technologie/blockchain/powstaje-unijne-forum-ds-blockchaina/et3398d> (accessed: 27.05.2019).
 Clark B., “Blockchain and IP law: A match made in crypto heaven?,” *WIPO Magazine* 2018, https://www.wipo.int/wipo_magazine/en/2018/01/article_0005.html (accessed: 28.05.2019).
 EUIPO Press Release, “Using blockchain in the fight against counterfeiting — EUIPO launches a Forum to support concrete solutions in that field,” https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/News/Blockchain_Forum_launch_PR_en.pdf (accessed: 29.05.2019).
 European Commission official website, “Blockchain technologies,” <https://ec.europa.eu/digital-single-market/en/blockchain-technologies> (accessed: 27.05.2019).

⁴⁸ B. Clark, op. cit.

- European Commission official website, "European countries join Blockchain Partnership," <https://ec.europa.eu/digital-single-market/en/news/european-countries-join-blockchain-partnership> (accessed: 27.05.2019).
- European Commission official website, "Hungary joins the European Blockchain Partnership," <https://ec.europa.eu/digital-single-market/en/news/hungary-joins-european-blockchain-partnership> (accessed: 27.05.2019).
- European Commission official website, "Launch of the International Association of Trusted Blockchain Applications — INATBA," <https://ec.europa.eu/digital-single-market/en/news/launch-international-association-trusted-blockchain-applications-inatba> (accessed: 27.05.2019).
- The European Union Blockchain Observatory and Forum, "Blockchain innovation in Europe," <https://www.eublockchainforum.eu/reports> (accessed: 28.05.2019).
- EY website, "The risks and opportunities of blockchain: Disruption in the boardroom," <https://www.ey.com/gl/en/issues/governance-and-reporting/center-for-board-matters/ey-the-risks-and-opportunities-of-blockchain> (accessed: 29.05.2019).
- Garstka M., Piech K., *Konsorcja i rady blockchain na świecie*, Warszawa 2017, <https://www.gov.pl/documents/31305/0/porozumienia-v1.pdf/7d0d1eac-0b54-434c-a322-48b42f77fd29> (accessed: 28.05.2019).
- Hooper M., "Top five blockchain benefits transforming your industry," <https://www.ibm.com/blogs/blockchain/2018/02/top-five-blockchain-benefits-transforming-your-industry/> (accessed: 28.05.2019).
- International Association of Trusted Blockchain Applications official website, <https://inatba.org>, (accessed: 27.05.2019).
- Karatkevich D., "Blockchain and the law: Regulations around the world," <https://openledger.info/insights/blockchain-law-regulations/> (accessed: 26.05.2019).
- Kowlessar A.F., "Blockchain: U.S regulation and governance," <http://www.financialpolicycouncil.org/blog/blockchain-u-s-regulation-and-governance/> (accessed: 28.05.2019).
- Long C., "What do Wyoming's 13 new blockchain laws mean?," <https://www.forbes.com/sites/caitlinlong/2019/03/04/what-do-wyomings-new-blockchain-laws-mean/#2cbe2ae25fde> (accessed: 28.05.2019).
- Morton H., "Blockchain state legislation," <http://www.ncsl.org/research/financial-services-and-commerce/the-fundamentals-of-risk-management-and-insurance-viewed-through-the-lens-of-emerging-technology-webinar.aspx> (accessed: 28.05.2019).
- The Paypers website, "French fashion retailer incorporates Microsoft's blockchain into luxury brands," https://www.thepayers.com/cryptocurrencies-bitcoin-virtual-currencies/french-fashion-retailer-incorporates-microsoft-s-blockchain-into-luxury-brands/778953-39?utm_source=dlvr.it&utm_medium=twitter# (accessed: 29.05.2019).
- The UK Government Chief Scientific Adviser, "Distributed Ledger Technology: Beyond blockchain. A report by the UK Government Chief Scientific Adviser," https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf (accessed: 28.05.2019).
- Whittle B., "Fashion meets the blockchain: How blockchain can solve fashion's woes," <https://coincentral.com/fashion-meets-the-blockchain-how-blockchain-can-solve-fashions-woes/> (accessed: 29.05.2019).