Fighting Against Fashion Counterfeits: A Unique Source Method Based on Blockchain Technology

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Abstract: The issue of fashion counterfeits and trademark infringement becomes more serious as globalization and internet-based trade developed. Unique source method based on the blockchain provides a new way for brands to fight against counterfeits in the fashion industry. Customers can distinguish fake goods from genuine ones. However, blockchain technology lacks predictable legislative rules, raises transaction costs, and consumes computational power. Though blockchain technology is hardly applied universally in the fashion industry these days, with the fast development of new technology, the problems may be overcome.

1. Introduction

Fashion counterfeits and trademark infringement has been a substantial legal issue since the emergence of fashion brands. The issue becomes more serious as globalization and internet-based trade developed. According to OECD and EUIPO's report, watches, articles of leather, headgear, footwear, which all belong to fashion, are top industries suffering from counterfeiting. To fight against counterfeits, Chinese online shopping giant Alibaba released a unique source function based on blockchain technology to track the supply chain and indicate the source of every luxury good. Customers may access the source of every single good. What legal effect the blockchain technology would have on the counterfeiting issue in the fashion industry?

Based on blockchain technology, Alibaba's luxury goods platform will be able to integrate the data of raw material manufacturing, transportation process, and marketing process, and recording the information on the blockchain. The information will be bound with a unique digital ID on the platform and the product. Customers can scan the digital ID on the product and access the supply chain information. The recorded information on the blockchain is irreversible and counterfeits cannot fake information to confuse the source of goods.

Unique source method based on blockchain technology provides a new way for brands to fight against counterfeits in the fashion industry. However, the method lacks legal recognition, raises transaction costs, and consumes computational power. Owing to the limitations, the method may be hard to apply to the fashion industry universally. But with the fast development of new technology, blockchain technology may play a vital role in fighting against counterfeits.

2. Counterfeits Issue in the Fashion Industry

Fashion may be understood as everything that is worn on the body and that is done to or with the body: all the dress, clothing, adornment, modification and so on that happens on and to the body is fashion (Barnard, 2014). The value of the global fashion industry exceeds 3 trillion dollars, 2 percent of the world's Gross Domestic Product (GDP). In the fashion industry, brand trademark protection is more important and realistic than design copyright protection (DiAsio, 2019). Brands play an instrumental role in rewarding the efforts of right holders, innovators, and investors (OECD, EUIPO, 2016). As to design protection, it is generally accepted that fashion design could be rewarded for market first-mover advantage. To build a steady relation with customers,

manufacturers establish their own brands. Who first unveils the design, who has the chance to lead the fashion trend? Therefore, the leader position is quite profitable. This may clarify why many brands hold a fashion show every season.

"Women do not buy hats. They buy fashion." Fashion is not an only garment, but also a social and cultural identity (Barnard, 2014). People buy fashion goods not only to keep the body warm and dry but also to display and communicate what or who we are. The communication can be sent and receive by what we wearing. In other words, one's identity, what or who we are, could be represented by what one wears. Fashion brands also work and benefit from that. Fashion manufacturers invest to design and spread their own stories and value. For example, the jewellery brand Tiffany alleges it has always celebrated the dreamers, the believers, the romantics, and free spirits. By long time advertisement, Tiffany represents the people who are dreamers, believers, romantics and free spirits. Sticking to long-time stable quality management, brands gain reputation and build up the relation with consumption and identity.

However, the fashion industry is suffering from trademark infringement and counterfeiting more than other industries. Historically, the fashion industry was among the first to be impacted by counterfeiting. With the development of globalization and internet-based trade, counterfeiting has been more severely injured the fashion market. The fashion market is involving in globalization deeply. Its supply chain follows the social division of labour and distributes it around the world. The textile and clothing sector may exist in Asia, while the design and retail sectors exist in Europe and the United States. The textile and clothing sector requires a large amount of labour force but the profit is much lower than design and retail sectors. Those who make originals may also made "knock-offs" (counterfeits) to get extra profits. Besides, since fashion manufacturing is a low threshold, organized criminal groups are playing an increasingly important role in counterfeiting. Induced by benefiting significantly from profitable counterfeiting and piracy operations, organized criminal groups employ a group of workers who could produce fashion counterfeits. China produces a significant share of the world's fashion goods. Meanwhile, it is also the source of a large share of counterfeits. China has the heaviest burden to resolve counterfeits. In China, there are thousands of cases concerned with trademark infringement in the fashion industry every year.

Furthermore, counterfeiting becomes more intense in the e-commerce age. E-commerce markets are growing at noticeable rates. The online market is expected to grow by 56% in 2015–2020, while traditional markets are only expected 2% growth during the same time. People enjoy the convenience to buy or sell products and services online or over the internet. However, counterfeiting in the online market appears more serious than the offline market. A large amount of counterfeit goods rapidly moves from physical markets to internet-based platforms. Though almost large marketplaces have the problem, Alibaba seems to have a larger counterfeit problem than eBay and Amazon have. Alibaba is often criticized for billions of counterfeits on its online shopping platforms. In 2015, fake goods in Alibaba's shopping platform exceeded $1.7 trillion. In 2016 and 2017, the U.S. Trade Representative dumped Alibaba back on its Notorious Markets List for over suspected trademark counterfeiting.

The essential issue in counterfeiting is the information asymmetry in a transaction in the fashion industry. Information asymmetry deals with the transactions where one party has more or better information than the other. This asymmetry creates an imbalance of power in transactions. This may cause the transactions to go awry, market failure in the worst case. Information asymmetry also exists in the fashion industry. Customers are unable to know how fashion goods are produced, where the goods come from. They only get to know the goods from descriptions and pictures alleged by sellers, while sellers have more and better information than the customers. Owning to information asymmetry, some manufacturers bear other brand's logos, pretending the real ones. For example, a dress bearing the channel logo but not made by Channel, Inc.

Trademark identifies products or services of a particular source from those of others. Its function to indicate source is vital to the trademark owner and consumer. To build and preserve steady relations with customers, manufacturers establish their own brands. Through long term marketing operations and advertisement, the brand bearing the goodwill that would be accepted and favored

by customers. If there exists the likelihood of confusion of source, the counterfeiting shall be characterized as trademark infringement.

Trade-in counterfeits is a major challenge in the global economy. These practices have negative effects on sales and profits of affected firms, while also have adverse revenue, economic, health, safety, and security effects for governments, businesses, and customers. Governments take measures to fight against counterfeits including penalties and sanctions. Meanwhile, governments require e-commerce platforms to take measures to decrease counterfeits. In fact, the e-commerce platforms themselves have the motivation to do, or else they would lose brands and the trust of customers.

Counterfeiting adversely affects the development and valuable innovation of the fashion industry. Counterfeiting imitates other's trademarks with the intent to deceive customers the source of goods. Counterfeiting disrupts the relationship between the brands and customers. For instance, who wants to wear Armani but wearing fake clothes, which destroys the relation between Armani and her customer. Elegant, noble, elite, the brands want to represent, would be destroyed by counterfeits. With respect to brand's owner, his hardworking in building value and maintain high quality fails to be rewarded.

3. The Role of Blockchain in Fighting Against Counterfeits

Internet companies tend to solve problems through the internet method. In 2017, Alibaba announced that it had formed a coalition that would leverage the power of big data to crack down on purveyors of fake goods. However, the big data method seems failed. Alibaba still is put on the blacklist for counterfeit products in 2018 for ineffective intellectual property protection. On April 12, 2018, Alibaba Cloud released a new blockchain solution for luxury goods. With the blockchain technology support from Alibaba Cloud, Alibaba's luxury goods platform will be able to integrate the data of raw material manufacturing, transportation process, and marketing process, and recording this information on the blockchain. Then every single piece of information will have a unique blockchain "ID card", with a digital signature and time stamp for customers to verify.

The unique source function based on blockchain technology aims to eliminate information asymmetry in the supply chain. Customers are unknown of the supply chain of the dress and hard to distinguish the fake one from the real one. In an especially online marketplace, it is impossible for customers to distinguish from pictures. To change this situation, Alibaba attempted blockchain technology to be used in the fashion industry to disclose the supply chain of goods. The fashion industry has a supply chain consisting of a number of discrete activities from raw materials to distribution centers and retail stores. Every step in the supply chain can be recorded in a block. Along with the transaction in the supply chain, the block is linked to the former one (hence the term "chain").

Blockchain is able to record every node in the supply chain for every single good. Blockchain is a decentralized transaction and data management technology developed first for Bitcoin cryptocurrency (Yli-Huumo, Ko, Choi, Park, and Smolander, 2016). The reason for the interest in Blockchain is its central attributes that provide security, anonymity, and data integrity without any third-party organization in control of the transactions. The whole process would record the supply chain. Firstly, manufacturers shall give each product a unique digital ID on the platform and the NFC chip on the product. Secondly, every business operation shall be connected to the blockchain platform and the NFC chip. And they shall upload every step of information to the platform with standard APIs. Lastly, a universal mobile application shall be created and installed as the interface to scan the digital ID to access the whole supply chain with a time stamp.

There are four basic principles of blockchain technology to support the unique source function. First, blockchain is a distributed database. Every party on the blockchain has access to the entire database and its complete history and can verify the records of its transaction partners directly. No single party controls the information. Second, data transmission is peer-to-peer. Communication occurs directly between peers instead of through a central node. Each node stores and forwards information to all other nodes. Third, information on the blockchain is transparent with

pseudonymity. Every transaction and its associated value are visible to anyone with access to the system. Each node on the blockchain has a unique 30-plus-character alphanumeric address that identifies it. Fourth, records on the blockchain are irreversible. Once a transaction is entered in the database and the accounts are updated, the records cannot be altered, because they're linked to every transaction record that came before them.

Owing to these principles, blockchain can be used to develop data trading system, supply chain finance system, securities assets system, and others. Nowadays, blockchain applications are hotly invested and created. In China, it has been billions of dollars internet-based industry. For example, a blockchain platform, Vechain, offering Blockchain-as-a-Service to enterprises for products and information. HyperChain Technology focuses on distributed ledger technologies and smart contracts.

4. Analysis the Effect of Blockchain Technology

Blockchain used in the fashion industry provides a new way for brands to establish a peer-to-peer connection with customers. The blockchain can record all the business operations include manufacturing, logistics, warehousing, distribution, retailing, and quality-checks. This information is bound with a unique digital ID on the platform and on the products. Through the interface to the blockchain, such as a mobile application, customers can scan the digital ID of the product and access the supply chain information. Customers and the product then engage in a one-on-one connection.

Comparing to linear barcode, a unique source based on blockchain is hard to forge. Linear barcode is the most universal industrial use code nowadays. It can be used to keep track of objects. One batch of products usually shares the same linear barcode. Therefore, it cannot distinguish a single product. Besides, a linear barcode is easy to fake. A clever counterfeiter can copy a product bar code and apply it to perfect, near-perfect replicas of the same product type. But for a unique source based on blockchain, a blockchain is distributed, and each record contains a timestamp and a secure link to the previous record. Changing one block would take tremendous efforts to modify more than half of the computers, which would be proved the loss outweighs the gain.

And unique source based on blockchain discloses the disguise of counterfeits. Though the manufacturers other than the blockchain platform upload the information, the information cannot be promised to be true logically. However, since the information uploaded is irreversible, the supply chain can be followed back to find the liable one if any node goes wrong. Thus, manufacturers would not input fake information since it will be easy to be found. Even if manufacturers produce too many goods and input them on the blockchain, it will be mismatching with former information.

Unique sources based on blockchain also could be used to identify legitimate parallel imports and second-hand goods. One challenge in the battle against counterfeit goods is being able to quickly identify goods that might at first appear to be counterfeit but are not-in other words, legitimate parallel imports and second-hand goods (Burbidge, 2017). The same principles that enable tracking the authenticity and licensing of an e-book or digital download can apply to physical items using blockchain, ensuring that genuine items can be tracked across their life cycle (Burstall & Clark, 2017). Again, this is achieved by adding some form of a unique physical identifier to the physical item (Burbidge, 2017). If a cryptographic key has to be provided to authenticate a fashion item as genuine before it can be sold second-hand, then verifying goods sold everywhere-from Sotheby's and eBay to Craigslist and Facebook-can be achieved with clear and accurate precision This will enable third-party seller platforms to take a more active part in the monitoring of products sold on their sites and buyers can be sure that they are buying the real deal.

5. Limitation of Blockchain Application

Though blockchain technology indicates a unique source could solve the source confusion matter, blockchain technology application has limitations. The limitations are mainly caused by legislative supervision and the blockchain technology itself.

Blockchain technology lacks legislative attention and acceptance. It is brand new for lawyers. And its applications are forming and upgrading. Therefore, the legislative department and legal researchers are starting to study it. China is one of blockchain technology first mover. Though the Chinese courts have dealt with timestamp evidence, blockchain in the supply chain has not appeared in trademark infringement cases yet. Neither legislation nor judicial cases have formulated rules on the blockchain. This uncertainty may delay the application of blockchain technology in the fashion industry.

Blockchain technology also raises the transaction cost in the fashion market. It requires every single product has integrated information, which would hugely raise the cost of a transaction. When market transactions are so costly as to make it difficult to strike a bargain (Coase, 1960). The fashion industry is a nearly perfect competition market, and a firm cannot make any more money than is necessary to cover its economic costs. If the fashion industry puts a unique source based on blockchain into practice, every node of the transaction shall add information to the blockchain. The whole market transactions will increase rapidly which may be resisted by customers. Small size factories and low-cost goods are hard to afford the burden. This may be the reason why Alibaba released its blockchain program on luxury goods. Luxury goods are special in the fashion industry. Luxury goods are insensitive to price. Even with the price increase, the customers still pay the bill. But for normal products in the fashion industry, blockchain may strike the whole market and many firms may unable to struggle through the change.

Besides, blockchain technology requires vigorous computational and electronic power. Confirming transactions security, prevent attacks, and attempts to disturb transactions, on the blockchain require considerable computational power. The information may be recorded on several servicers before. Now blockchain requires it shall be recorded on thousands of services. This task costs (even wastes) tremendous computational power and also electronic power. Only a giant business company or alliance is qualified to support the cost. Alibaba as one of the biggest e-commerce company proposed the blockchain method. But small size firms could not afford such enormous expenditure.

6. Conclusion

Unique source method based on the blockchain provides a new way for brands to fight against counterfeits in the fashion industry. Customers can distinguish fake goods from genuine ones. However, blockchain technology lacks predictable legislative rules, raises transaction costs, and consumes computational power. Blockchain technology is hardly applied universally in the fashion industry. However, with the fast development of new technology, the problems may be overcome.

References

[1] Barnard, Malcolm (2014) Fashion theory: An Introduction. Routledge.

[2] DiAsio, S. (2019). Fashion has no function: Diminishing the functionality bar to trademark protection in the fashion industry. Mississippi College Law Review, 38(1), 28-44.

[3] OECD, EUIPO (2016) Trade in Counterfeit and Pirated Goods: Mapping the Economic Impact. OECD Publishing.

[4] Burbidge, R. (2017). The blockchain is in fashion. The Trademark Reporter, 107(6), 1262-1268.

[5] Yli-Huumo, J., Ko, D., Choi, S., Park S., Smolander, K. (2016) Where Is Current Research on Blockchain Technology?—A Systematic Review. PLoS ONE 11(10).

[6] Burbidge, R. (2017). The blockchain is in fashion. The Trademark Reporter, 107(6), 1262-1268.

[7] Burstall, R., & Clark, B. (2017). Blockchain, IP and the Fashion Industry. Managing Intellectual Property, 266, 9-13.

[8] Coase, R. R. (1960). The Problem of Social Cost. Journal of Law & Economics, 3, 1-44.