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INNOVATIVE STRATEGIES TO COMBAT COUNTERFEITING: THE ROLE OF TECHNOLOGY

Globalization has made the world a global village and has eroded all forms of boundaries preventing people from being connected and sharing ideas. As a result, people in different parts of the world can access markets away from them to purchase the goods they may need; consumerism is on the rise. The benefits of the internet and globalization to trade and commerce come at a great cost, counterfeiting. According to LexisNexis, a counterfeit is “a replica of a branded product (complete with trade marks) which misleads consumers into thinking that it originates from the legitimate brand owner”. Counterfeiting is therefore the production of counterfeit of branded products. Goods can be counterfeited by substituting the label of the goods and reselling them under a fake label, making a fake product and selling it as the original one, by means of fraudulent identification, which allows counterfeiters to obtain access to supply chain networks and introduce counterfeit goods into the system under the guise of legitimate products. Whereas the advancements in technology help to curb counterfeiting, counterfeiters not only circumvent these technological measures to pirate goods but are also

emboldened by them. They (the counterfeiters) can make near perfect replicas of the original goods or the labels on them through the use of technology leaving members of the general public and including experts unable to differentiate the original from the fake. The same pirated goods get injected into the supply chain and to the hands of final consumers. The dangers of counterfeiting include but not limited to economic losses, health hazards etc. Countries like Nigeria, stand to lose revenue from tax, companies lose a lot of profits and consumers suffer health problems and may even lose their lives. The United Nations Office on Drugs and Crime in a threat assessment report published in February 2023 noted that substandard drugs kill 500,000 persons in Sub-Saharan Africa every year. This article will examine the modern ways to combat counterfeiting.

Legal Framework of Anti-counterfeiting in Nigeria

Nigeria has no single legislation that embodies the legal framework in the fight against anti-counterfeiting, rather the legal framework can be gleaned from such

1. LexisNexis. (n.d). Counterfeit Definition. <https://www.lexisnexis.co.uk/legal/glossary/counterfeit/>

2. Bernard Klein (2023) How to Utilize Ai to Combat Counterfeiting. Global Trade <https://www.globaltrademag.com/how-to-utilize-ai-to-combat-counterfeiting/>

3. Punch (2023) Counterfeit Drugs Threaten Nigerian's Health. <https://punchng.com/counterfeit-drugs-threaten-nigerians-health/>

legislations as:

1. The Copyright Act (CAP C2, 2022);
2. The Counterfeit and Fake Drugs and Unwholesome Processed Foods (Miscellaneous Provisions) Act (CAP C34, 2004);
3. The Customs and Excise Management Act (CAP 45, 2004);
4. The Cybercrime (Prohibit, Prevention, Etc) Act, 2015;
5. The Merchandise Marks Act (CAP M10, 2004);
6. The National Information Technology Development Agency Act 2007;
7. The Nigerian Police Act (CAP P19, 2020);
8. The Patent and Industrial Designs Act (CAP P2, 2004); and
9. The Trademarks Act (CAP T13, 2004).
10. The Federal Competition and Consumer Protection Act 2015

In order to be on top of the fight against counterfeiting, there is a need for more research into innovative measures not known to counterfeiters; the literature on the ways to combat counterfeiting needs to be updated regularly. Some of the modern technologies that can help combat counterfeiting are as follows:

Shared Ledger Technology (Blockchain).

Blockchain is relatively new, it became mainstream a few years ago. When the concept of Blockchain is mentioned, one may immediately think of financial transactions involving several cryptocurrencies as some cryptocurrencies have their own Blockchain which ensure safe and secure transactions in those currencies. The Blockchain is a decentralized ledger that records transactions such as exchanges in cryptocurrencies. It is open to members of the public such that the history of transactions recorded on the Blockchain can be tracked and traced. The Blockchain is so safe and secure that it cannot be tampered with, at least it has not suffered security breaches since it came into being. Transactions recorded on the Blockchain are verifiable by the participants (nodes) to that Blockchain. When verified, they are stored in a block and once stored, cannot be changed. It does not only record financial transactions, rather it can also be used for a wide range of transactions such as payment processing, digital IDs, contract and



dispute settlement, insurance, record keeping, as well as securing supply chains against disruptions and illicit trade. The security and safety resulting from the incorruptibility of the Blockchain creates an element of trust much needed in commercial transactions.

How then can the Blockchain be used in solving counterfeiting? One may ask. An apt example is where a manufacturer produces a drug and the drug is assigned a digital ID. The manufacturer then sells to a wholesaler who in turn sells to a distributor. A medical doctor purchases the drug and administers the same to his patient. All transactions from the manufacturing to the last sale are recorded on the Blockchain, the manufacturer, the wholesaler, the distributor and the final purchaser being participants in the blockchain. Each of the participants can have access to the transaction history and could easily check to see if there has been counterfeiting anywhere along the supply chain. The Blockchain makes it easy to find out whether it is the same good containing the digital ID assigned to it shortly after it was made that the final consumer purchased. It thereby guarantees the authenticity of the good purchased. The same strategy (Shared Ledger Technology) can be used to guard against counterfeiting in other goods such as shoes and bags. A Nigerian start-up, Chekkit uses blockchain to verify the authenticity of products. This it does by tracking products from the manufacturing process to the final consumer. For helping in the process, consumers get rewarded with points which can be converted into airtime. The products contain PINs which can be authenticated using the SMS option, and QR codes which can be scanned for the purposes of authentication. The customers, by so doing, will be able to see the product information, the audit trail and the expiration date. Chekkit gives manufacturers the confidence and assurance to produce their goods and market them while assuring consumers of authenticity of

4. EUIPO (2021). The European Observatory on Infringements of Intellectual Property Rights, EUIPO, Anti-Counterfeiting Technology Guide. doi: 10.2814/665780

5. EUIPO (2021). The European Observatory on Infringements of Intellectual Property Rights, EUIPO, Anti-Counterfeiting Technology Guide. doi: 10.2814/665780

6. Bernard Klein (2023) How to Utilize Ai to Combat Counterfeiting. Global Trade <https://www.globaltrademag.com/how-to-utilize-ai-to-combat-counterfeiting/>

the products.

Artificial Intelligence A.i

Ai could prove very useful in the fight against counterfeiting. It has been noted somewhere else in this work that counterfeit goods in some cases are so identical to the original that not only consumers are deceived but also experts. This is where Ai comes in. It can help consumers and experts to identify counterfeit goods by accurately analyzing patterns to distinguish the authentic product from the fake one. Ai's image recognition feature can sift counterfeits from original goods when trained with the images of the original. It can distinguish the images corresponding to the original of the goods from the ones so closely resembling it as to deceive consumers and even experts. By the use of Ai, consumers will avoid the risks associated with purchasing counterfeit products and manufacturers, on the other hand, will not suffer injuries to reputation and economic losses. Ai chatbots can also be used to determine whether a product is original or fake. The chatbots use Natural Language Processing (NLP) to understand consumer's queries and give answers to them. provide a variety of information that users may require concerning a product. Such information may include the product's history, authenticity etc. The chatbots have access to databases which may include blockchain records of the particular product, which enables it to give accurate information concerning the product in real time.

Augmented Reality

According to Xmreality, Augmented Reality is a "technology that lets you see the real-life environment with a digital augmentation overlay of images, sounds, or text, that reinforces your reality." Augmented reality can assist in the war against counterfeiting by providing the much-needed education and creating awareness about a particular product and how it works. Potential customers who are well sensitized with respect to the product they want to purchase would be able to distinguish it from counterfeits.

Other technologies

In addition to the abovementioned innovative means of tackling the menace of counterfeiting, are some other

technological methods that have already been in use such as RFID tags, holograms, QR codes etc. These technological methods can be used alongside the innovative methods to improve efficiency and effectiveness. RFID uses radio frequency technologies to recognize objects and things. It consists of electronic tags which assign a unique identity to anything to which they are attached. The unique ID together with the information on it can be picked up by readers. Holograms are used to authenticate products; products not bearing the original holograms would easily be identified as counterfeits as cannot be reproduced using colour printers and scanners. An example of hologram is the Mastercard hologram which is usually placed on ATM cards produced by the company. The holograms help distinguish other cards from Mastercard. QR codes can be used to authenticate products by placing them on the product packaging. A buyer seeking to verify the authenticity of the product would scan the QR code using an application on a mobile device, the information on the QR code will reveal whether the product is genuine or not. Anti-malaria drugs in Nigeria are usually authenticated using Mobile Authentication Service which was deployed by NAFDAC in 2010. Scratch codes are usually attached to the packs of the drugs which when scratched reveals a one-time PIN. The PIN is sent to a short code toll-free and the customer receives feedback as to whether the drug is genuine or not.

Conclusion

Counterfeiting presents a huge problem for the Nigerian economy. It stifles the drive for innovation and invention by denying manufacturers and producers the reward for their hard work. Counterfeit drugs and edibles lead to health challenges and even death of victims. Since the criminals involved in counterfeiting are usually at large and invisible to the relevant authorities such as the Federal Inland Revenue Service, the government stands to lose potential revenue. There is a need for more innovative ways to combat counterfeiting. All the stakeholders should join hands together in the fight against counterfeiting. The wholesalers and other persons at the supply chain have a much bigger task at hand in rooting out fake products and ensuring they distribute only the originals. Law enforcement agencies should carry out their functions diligently, without fear or favour, in fishing out counterfeiters and bringing them to book.

8. ibid

9. Xmreality (2021) Augmented Reality <https://www.xmreality.com/blog/augmented-reality>