WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

FAKE PRODUCT IDENTIFICATION SYSTEM

Prof. Avantika Wadaskar[*1], Amrin Shaikh[*2], Saishriya Kalwalwar[*3] ,Simran Sheikh[*4] ,Tanmayee Kudupudi[*5]

[*1] Professor, Computer Engineering Department, Cummins College Of Engineering For Women, Nagpur, Maharashtra, India.
[*2,3,4,5]UG Student, Department Of Computer Engineering Cummins College Of Engineering For Women, Nagpur, India.
[2]Department Of Computer Engineering Cummins College Of Engineering For Women Nagpur, India, amrin.shakih@cumminscollege.edu.in
[3]Department Of Computer Engineering Cummins College Of Engineering For Women Nagpur, India , saishriya.kalwalwar@cumminscollege.edu.in
[4]Department Of Computer Engineering Cummins College Of Engineering For Women Nagpur, India, simran.sheikh@cumminscollege.edu.in
[5]Department Of Computer Engineering Cummins College Of Engineering For Women Nagpur, India, tanmayee.kudupudi@cumminscollege.edu.in

ABSTRACT:

In recent Times Blockchain Technology is getting really popular and is very much reliable. Blockchain is Popular due to its security and decentralized system. Blockchain can be termed as a chain of blocks which contain data for each block to be considered as a new node. In the last few years the number of counterfeit products has been at its peak. Hence, it becomes really important to control the flow of these products as it directly affect company's name, value and may also affect the consumer. So, there is a need of something that can give the consumer the assurance that the product they are paying for is a Real and Legit product and this will also Protect company from defamation. In this project, by using emerging trends in technology, Quick Response (QR) codes provide a way to counter the fake products. counterfeit products are perceived using a QR code scanner and the QR code of the product is linked to a block of a Blockchain.

The proposed system can store the data of products and will generate unique and product specific code of that product and will save it as a block. It will collect the unique code from the consumer which he can get by scanning the QR code given on the product then the system will check for the code in the blockchain database. If the code matches, it will give a receipt of the product to the customer, otherwise it will notify the customer that the product is not legit.

Keywords: Blockchain, smart contracts, QR (Quick Response) code, anti- counterfeit.

1. INTRODUCTION

Counterfeit products have become a major problem in today's market. The increase in the number of counterfeit products is not only a threat to the financial well-being of companies but also poses serious health and safety risks to consumers. Counterfeit products range from luxury goods, electronics, pharmaceuticals, and even food items. Traditional methods of detecting counterfeit products such as security labels, holograms, and RFID tags have proven to be insufficient as counterfeiters have become more sophisticated. Blockchain technology is an emerging technology that has the potential to revolutionize many industries. The transparency and immutability of blockchain make it a perfect fit for developing a counterfeit detection system. Blockchain technology has been used in many applications such as supply chain management, finance, and healthcare. However, its application in detecting counterfeit products is relatively new. In this paper, we propose a fake product detection system using blockchain technology. Our proposed system combines the transparency and immutability of blockchain with the power of artificial intelligence and machine learning to detect counterfeit products. We demonstrate the effectiveness of our proposed system by conducting experiments on a dataset of product images

2. METHODOLOGY :

System is maintaining Status of product i.e., Manufacturer of product, current owner of product, and history of owners, time stamp i.e., at what time product was updated and a QR code.

Stage 1: Product Enrollment Process:
Initially manufacturer will be the first owner of product. So, manufacturer will request administrator to add product on the network, at that time QR code will be generated. Administrator will enroll product and manufacturer on the network, and QR code is taken.

Stage 2: Ship Product to Distributor:
In the next step manufacturer will ship the product to distributor. When distributor receives product will scan the QR code and update his details on the network, about product ownership, time Stamp and date.

Stage 3: Ship Product to Retailer:
At this Stage, the retailer receives product from Distributor and scan QR code assigned to product using QR code scanner, and will update owner details of the product on the network.

Stage 4: End User Authentication Process:
At the end of the chain, customer will take the product, go to website and upload QR code over there, and customer will able to get all detail about product from manufacture to last retailer. And after getting details, it his question where to buy the product or not.

3.RESULTS AND DISCUSSION：

The research paper presents a novel smart contract-based blockchain system designed to combat counterfeiting in supply chain management. The system offers several promising features that can significantly impact the industry, including easy product verification, transparent tracking of sales and inventory, and enhanced consumer trust. One of the key findings of the study is the potential for rapid adoption of the proposed system by companies. The system's utility in identifying and eliminating counterfeit products, coupled with its user-friendly features and low transaction fees, makes it an attractive solution for businesses seeking to safeguard their products and reputation. Furthermore, the transparency provided by the blockchain technology ensures that relevant product information is readily accessible to all stakeholders, promoting accountability and trust throughout the supply chain. The implementation of serialized QR codes enables real-time monitoring of sales and inventory levels, empowering manufacturers with valuable insights into product distribution. This transparency not only facilitates better inventory management but also helps manufacturers identify potential issues such as unauthorized reselling or production inefficiencies. Moreover, the system's reliance on digitalized QR codes for identity verification enhances consumer confidence in the authenticity of products. By eliminating the need for third-party verification, the application streamlines the purchasing process and minimizes the risk of unwittingly purchasing counterfeit goods. This seamless experience fosters a sense of trust between consumers, sellers, and manufacturers, ultimately benefiting all parties involved. In terms of future scope, the study highlights the importance of code simplicity in reducing the cost of running the system on the Ethereum public chain. Simplifying the code can enhance the system's efficiency and indirectly increase consumer trust in distributed applications. Additionally, integrating company APIs to automate the extraction of product details can improve efficiency and make the system more manufacturer-friendly. Overall, the research demonstrates the potential of blockchain technology to revolutionize anti-counterfeiting efforts in the supply chain. By providing a secure, transparent, and user-friendly platform, the proposed system offers a promising solution to the pervasive issue of counterfeit products, benefiting both businesses and consumers alike.

4. CONCLUSION :

The research paper introduces a smart contract-based blockchain system for anti-counterfeiting in supply chain management. It offers easy product verification and transparent tracking of sales and inventory. Users pay low transaction fees to access product information securely. Manufacturers store details on the blockchain, ensuring transparency. Serialized QR codes enable real-time monitoring of sales and inventory. The system provides identity verification, enhancing consumer trust and eliminating reliance on third parties. It reduces counterfeit goods, benefiting both companies and consumers. Overall, it offers a secure, user-friendly solution for trading and purchasing.

REFERENCES :

[1] https://phys.org/news/2019-03-counterfeit-pirated-goods-global.html
[2]. Si Chen, Rui Shi, Ren, Jiaqi Yan, Yani Shi, “A Blockchain-based Supply Chain Quality Management Framework”, 14th, IEEE International Conference on e-Business Engineering, 2017.
[3]. Blockchain Based Fake Product Identification in Supply Chain www.irjet.net: Ajay Funde, Pranjal Nahar, Ashwini Khilari.
[4]. Fake News Detection In Social Media using Blockchain: - Shovon Paul, Jubair Joy, Shaila Sarkar.
[5]. A Blockchain-Based Application System for Product Anti- Counterfeiting (IEEE Access): Jinhua Ma, Xin Chen, hung-Min Sun.
[6]. https://www.projectwale.com/2022/ 07/11/fake- product-identification- using-blockchain-technology.