

# Fake Product Identification System using Blockchain Technology

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**Abstract:** *The global development of a technology or product always has a risk component in the rapidly evolving world of technology, such as copying and counterfeiting, which can harm the reputation of the company, its revenue, and the health of its customers. The main goal of the project is to confirm that the customer's purchased item is as described in the fake or genuine We have the conventional supply chain in comparison to blockchain. Typical supply chains offer centralised network where the firm providing the service or the products holds the data they control the market and the data, making them vulnerable because they can manipulate it anyway they like. To profit from the better value of the imitation products, counterfeit goods are created. As was already established, centralised networks are provided by traditional supply chains, but decentralised databases are provided by blockchain, and each transaction involves the data value for the commodity. This is accomplished by establishing a record whose veracity can be checked by everyone in the network as blockchain operates on a peer-to-peer basis. So that the buyer receives genuine products, the manufacturer might use this approach. This will contribute to preserving client confidence and raising the market worth of the product's brand. Each block in a blockchain is made up of data, a hash, and the previous block's hash. Both the data and the hash contain the necessary information.*

**Keywords:** Blockchain technology

## I. INTRODUCTION

The global development of a technology or product always has a risk component in the rapidly evolving world of technology, such as copying and counterfeiting, which can harm the reputation of the company, its revenue, and the health of its customers. The main goal of the project is to confirm that the customer's purchased item is as described in the fake or genuine We have the conventional supply chain in comparison to blockchain. Typical supply chains offer centralised network where the firm providing the service or the products holds the data they control the market and the data, making them vulnerable because they can manipulate it anyway they like. To profit from the better value of the imitation products, counterfeit goods are created. As was already established, centralised networks are provided by traditional supply chains, but decentralised databases are provided by blockchain, and each transaction involves the data value for the commodity. This is accomplished by establishing a record whose veracity can be checked by everyone in the network as blockchain operates on a peer-to-peer basis. So that the buyer receives genuine products, the manufacturer might use this approach. This will contribute to preserving client confidence and raising the market worth of the product's brand. Each block in a blockchain is made up of data, a hash, and the previous block's hash. Both the data and the hash contain the necessary information.

## II. LITERATURE SURVEY

JINHUA MA , SHIH-YA LIN , XIN CHEN , HUNG-MIN SUN , YEHCHENG CHEN , (Graduate Student Member, IEEE) AND HUAXIONG WANG , In recent years, blockchain has received increasing attention and numerous applications have emerged from this technology. A renowned Blockchain application is the cryptocurrency Bitcoin, that has not only been effectively solving the double-spending problem but also it can confirm the legitimacy of transactional records without relying on a centralized system to do so. Therefore, any application using Blockchain technology as the base architecture ensures that the contents of its data are tamper-proof. This paper uses the decentralized Blockchain



technology approach to ensure that consumers do not fully rely on the merchants to determine if products are genuine. We describe a decentralized Blockchain system with products anti-counterfeiting, in that way manufacturers can use this system to provide genuine products without having to manage direct-operated stores, which can significantly reduce the cost of product quality assurance.

Mrs. M. C. Jayaprasanna, Ms. V. A. Soundharya, Ms. M. Suhana, Dr. S. Sujatha, In recent years, Counterfeit goods play a vital role in product manufacturing industries. This Phenomenon affects the sales and profit of the companies. To ensure the identification of real products throughout the supply chain, a functional block chain technology used for preventing product counterfeiting. By using a block chain technology, consumers do not need to rely on the trusted third parties to know the source of the purchased product safely. Any application that uses block chain technology as a basic framework ensures that the data content is 'tamper resistant'. In view of the fact that a block chain is the decentralized, distributed and digital ledger that stores transactional records known as blocks of the public in several databases known as chain across many networks. Therefore, any involved block cannot be changed in advance, without changing all subsequent block. In this paper, counterfeit products are detected using barcode reader, where a barcode of the product linked to a Block Chain Based Management (BCBM) system. So the proposed system may be used to store product details and unique code of that product as blocks in database. It collects the unique code from the customer and compares the code against entries in block chain database. If the code matches, it will give notification to the customer, otherwise it gets information from the customer about where they bought the product to detect counterfeit product manufacturer.

Nafisa Anjum, PrमितDutta , In this paper, With the advent of globalization and the evergrowing rate of technology, the volume of production as well as ease of procuring counterfeit goods has become unprecedented. Be it food, drug or luxury items, all kinds of industrial manufacturers and distributors are now seeking greater transparency in supply chain operations with a view to deter counterfeiting. This paper introduces a decentralized Blockchain based application system (DApp) with a view to identifying counterfeit products in the supply chain system. With the rapid rise of Blockchain technology, it has become known that data recorded within Blockchain is immutable and secure. Hence, the proposed project here uses this concept to handle the transfer of ownership of products. A consumer can verify the product distribution and ownership information scanning a Quick Response (QR) code generated by the DApp for each product linked to the Blockchain. Swaroop Jambhulkar, Harsh Bhojar, Shantanu Dhore, Arpita Bidkar, Prema Desai, In this paper, There are many fake products in the existing supply chain. It is necessary to have a system for end user to check all details about product that they are buying so that the customer can check if the product is genuine or not. In recent years, Counterfeit products play an important role in product manufacturing industries. This affects the company name, sales, and profit of the companies. Block technology is used to identification of real products and detects fake products. Blockchain technology is the distributed, decentralized and digital ledger that stores transactional information in the form of blocks in many database/node-computers which is connected with the chains. Blockchain technology is secure as the data stored once in the chain is immutable therefore any block cannot be changed or hacked. By using Blockchain technology, customers or users do not need to rely on thirdparty users for confirmation of product.

### **III. PROPOSED WORK**

The system is functioning. A QR code and information on the product's status, including its manufacturer, present owner, and previous owners, as well as a time stamp indicating when it was updated. The maker will be the product's initial owner. Then, a QR code will be issued after the manufacturer asks the 5 Department of Information Technology, SIT, Lonavala administrator to add the product to the network. The administrator will add the manufacturer and product to the network and scan the QR code. The producer will send the product to the distributor in the following phase. When a distributor receives a product, he will scan the QR code to update his information on the network, including the date, time, and owner of the product. At this stage, the retailer receives the product from the distributor, scans the QR code that was issued to it with a QR code reader, and updates the product's owner information on the network.

### **IV. METHODOLOGY**

The system is functioning. A QR code and information on the product's status, including its manufacturer, present owner, and previous owners, as well as a time stamp indicating when it was updated. Stage 1: Product Enrollment

Process: The maker will initially be the product's first owner. Then, a QR code will be issued after the manufacturer asks the administrator to add the product to the network. The administrator will add the manufacturer and product to the network and scan the QR code. Stage 2: Distributor Shipment: The manufacturer will send the product to the distributor in the next phase. When a distributor receives a product, he will scan the QR code to update his information on the network, including the date, time, and owner of the product. Stage 3: Ship Goods to Retailer: At this stage, the retailer receives the product from the distributor, scans the QR code that was issued to it with a QR code reader, and updates the network with information about the product's owner. Stage 2: End User Authentication Process: The customer will take the product at the end of the chain, go to the website, and upload the QR code there. The client will then be able to access all the information about the goods, from the manufacturer to the last store. After learning more, the next question is whether or not to purchase the product

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