

A STUDY ON BLOCK CHAIN TECHNOLOGY IN FARMERS PORTAL

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ABSTRACT

Block chain is a method in which a confirmation of a transaction is kept by means of a cryptocurrency. The record is maintained transversely, linking several computers in a peer to peer network. Contracts, transactions, and the records of them define the economic system of a country. They set boundaries and provide security to the assets. Considering the features of block chain such as immutability and maintaining the footage of transaction details, this paper highlights the usage of block chain technology with farmer's portal that keep the footage of selling and buying information of crops. The proposed solution uses the python as a programming language in integration with the block chain system that will benefit the farmers or vendors and individuals by preserving the contract of trade. An interface for the farmers is designed using a python programming language in addition with block chain technology, which is used to store the information related to seller, buyer, selling and buying an item and total value transacted.

I. INTRODUCTION

Block chain an open, disseminated and decentralized ledger that evidences transactions involving two parties capably in a confirmable and stable way (Iansiti, Lakhani 2017). In the above given definition, open means the block chain is accessible to one and all, disseminated means that there is no single party control and decentralized means there is no central third party available, capable means it is fast and more scalable than the conventional technologies, confirmable means that everyone can check the

validity of the information and stable means that the data is nearly immutable that is it is nearly impossible to change or tamper the data or information. They verify and validate the identities and chronological events. They guide every action, transactions that have taken place among individuals, communities, organizations and nations as well. In this era of digitization, the way maintained and regulated these type of data must be changed, it must be highly secure and the block chain is the solution to this.

In the era of information and communication technology, a farmer's portal has always been helpful for farmers in many ways, providing ease of use and convenience of information to the farmers [1]. The Government of India has also taken many initiatives for the same. Few examples of such portals are Krishijagran.com, farmer.gov.in, agricoop.nic.in and agriwatch.com etc. Apart from these some E-commerce websites are also available; fert.nic.in and enam.gov.in etc. The sectors currently using block chain are shown in Fig.1. Using block chain technology in the field can make available decentralized computation and information sharing platform that enables multiple authoritative domains, which do not trust each other, to cooperate, coordinate and collaborate in a rational decision making process, a reliable information recording system can be made that can contribute for the development in the agriculture sector. Since block chain works like a public ledger, so it can be utilized to ensure many different aspects such as [3]

II .LITERATURE SURVEY

1) Krishi-Bharat i: an interface for Indian farmer

AUTHORS: Ghosh, Soumalya, A. B. Garg, Sayan Sarcar, PSV S. Sridhar, Ojasvi Maleyvar, and Raveesh Kapoor

Rapid growth in the field of ICT helps in basic aspects of mankind like- agriculture, education, healthcare etc. However, the moderate technical growth of ICT applications is confined to the community of a limited number of people, who live in digital pockets. The illiterate people like – farmer, shopkeeper etc. are unable to take the advantages of the ICT revolution. According to the UNESCO report, population of such people in the globe is 64% who are unable to use the technology either language or technical barrier. Moreover the percentage (76%) must be increased in the context of developing countries. The essential agriculture information is very useful to a farmer for taking effective decision thus we proposed to develop an iconic interface which is integrated with speech based interaction in Indian languages. The proposed interface is critically evaluated with the farmer from different

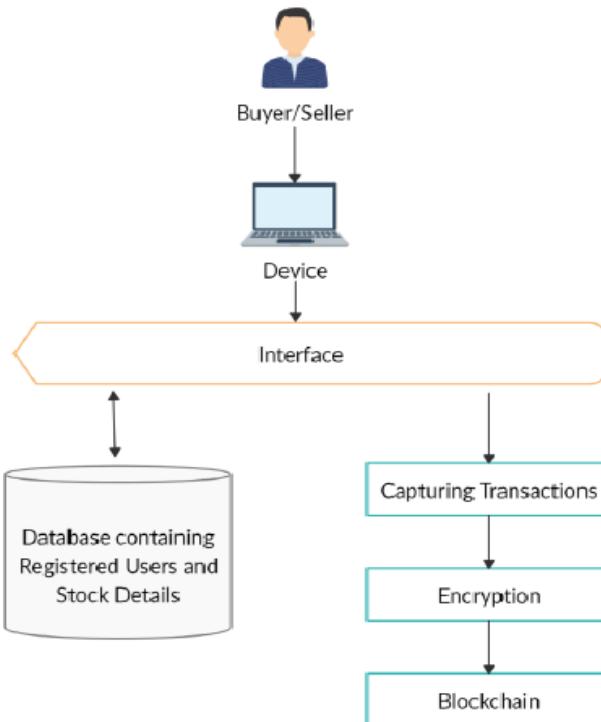
states of India. The evaluation results proved the effectiveness of the proposed interface.

2) Krishi Ville—Android based solution for Indian agriculture

AUTHORS: Singhal, Manav, Kshitij Verma, and Anupam Shukla

Information and Communication Technology (ICT) in agriculture is an emerging field focusing on the enhancement of agricultural and rural development in India. It involves innovative applications using ICT in the rural domain. The advancement of ICT can be utilized for providing accurate and timely relevant information and services to the farmers, thereby facilitating an environment for remunerative agriculture. This paper describes a mobile based application for farmers which would help them in their farming activities. We propose an android based mobile application - Krishi Ville which would take care of the updates of the different agricultural commodities, weather forecast updates, agricultural news updates. The application has been designed taking indian farming in consideration.

III. SYSTEM ANALYSIS



EXISTING SYSTEM:

In the existing system Farmers, as well as agriculture, are the foundation of life. Numerous work has been done towards the enhancement of agriculture by developing technologies that support directly and indirectly to agriculture. A range of research shows that with the various enhancements in the field of ICT (Information and Communication Technologies), the farmers are unable to take its advantage and fail to get the proper sale value for their crops. An interface that benefited the farmers by providing the information related to the advancement of agriculture techniques. Various technical approaches made in agriculture, mostly in the field of food and supply chain management. The incorporation of block chain technology in agriculture has improved the efficiency of the agriculture supply chain by reducing the need for verification of data. However, the technology

proposed benefited only the producers in terms of maintaining the accuracy of data for supply.

PROPOSED SYSTEM:

The Proposed Farmer's portal is a single gateway through which the e-commerce activity of crops can be performed. The users' experience of the portal can be tailored according to the individual need. It is a single access point i.e., everything is in a single place, the only thing needed is single login to approved users.

User: A user can be a buyer or a seller. The seller may be a farmer or a representative of him.
 Device: The user can interact through the portal using a computer or a laptop. Interface: To access the portal, the user needs to register using a sign-up. The registered user logs in using the correct credentials. Once the user signs in successfully. The user will have access to the portal/ interface.

A user can view available items that are crops and seeds with their price.

IV. IMPLEMENTATION

Sellers:

The Seller User can register the first. While registering he required a valid user email and mobile for further communications. Once the user register then admin can activate the Sellers. Once admin activated the Seller then he/She can login into our system. The seller can add a new item, update the existing items, allot and update the price of the item. It will increase the market reach and will also eliminate the middleman.

Buyers:

The Seller User can register the first. While registering he required a valid user email and mobile for further communications. Once the user register then admin can activate the Sellers. Once admin activated the Seller then he/She can login into our system. The buyer can buy a product and can search for any product according to the requirement. They can add the product in cart and delete crop from the cart. After finalizing the product to buy and verifying the cart user can check out.

Admin:

Admin can login with his credentials. Once he login he can activate the sellers and buyers. The activated user only login in our applications. The admin user can view the all transaction which is done by buyer user. In the admin frame can view all block chain transaction with its previous block details and hash values.

Block chain:

Every activity related to introducing a new item and purchasing an item is considered as a transaction and is added to the block chain accordingly with the correct unique digital signature and timestamp so that any user cannot deny the activity done by them. All these transactions are visible to everyone in the

network. The block chain is a peer to peer transaction based on distributed node systems by means of data encryption, time stamping and consensus. It makes the portal more secure at the data as it is immutable, transparent and accessible to all.

V. CONCLUSION

Block chain Technology in the field of agriculture can bring a revolutionary enhancement in the area of maintaining farmers data securely, ensuring the quality of seed, monitoring of moisture content in the soil, data of crop yield and lastly demand and sale price of crops. In this work, a block chain-based portal is proposed to deal with the issue of demand and sale price of crops which in result ensure crop security to farmers as well as to get fair price of the crop. For this, a portal is proposed on which a farmer can register and sell his crops, recording a transaction on a block chain at a point when buyers commit to buy a farmer's crop. This transaction is capable of recording crop details, the price at which it is committed to buying and quantity of crop purchased. This immutable nature of block chain technology will fortify farmers to get a legitimate price of crop and reduce the cost of operation for selling and buying crops when compared to traditional methods.

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