

Utilizing blockchain & smart contract to simplify and secure daily life

By

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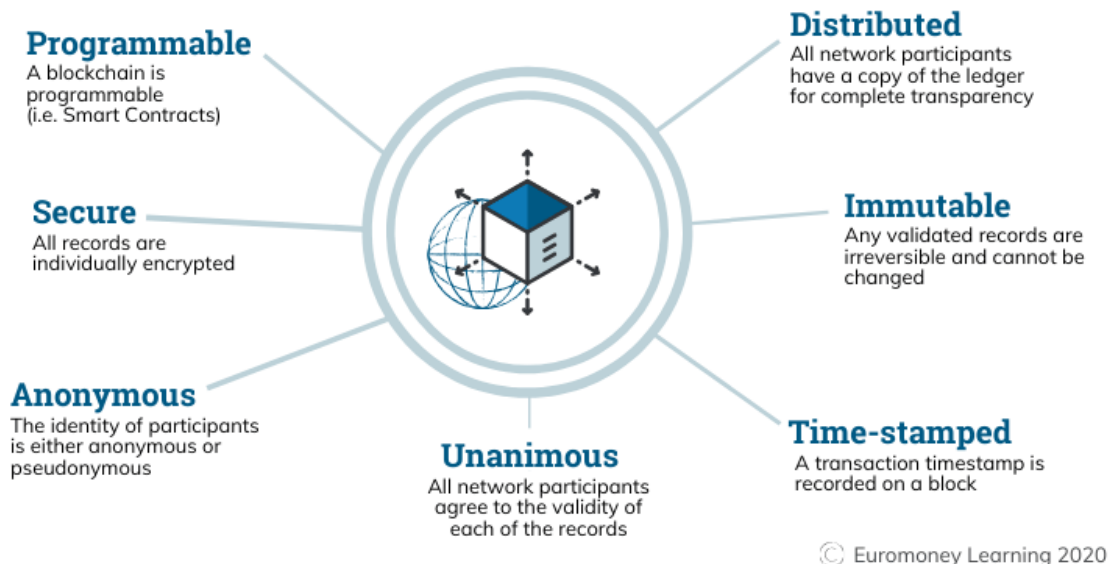
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1. Introduction

The Properties of Distributed Ledger Technology (DLT)



Blockchain technology has the potential to revolutionize how we conduct our daily lives, offering enhanced security and simplicity across various aspects. As a decentralized and immutable digital ledger, blockchain ensures the integrity of data and transactions, making it an ideal solution for addressing some of the challenges faced in modern living.

In finance, blockchain-based cryptocurrencies and digital wallets provide secure and efficient means of making transactions, eliminating the need for intermediaries and reducing transaction costs. Additionally, blockchain facilitates faster international money transfers and enhances financial inclusion for those without access to traditional banking services. In supply chain management, blockchain allows for real-time tracking of products from origin to destination, ensuring transparency and authenticity. Consumers can verify the origin and quality of goods, fostering trust in the products they purchase.

Blockchain also simplifies identity management, offering a secure and decentralized way to store personal information. Users can have control over their data and selectively share it with trusted parties, reducing the risk of data breaches and identity theft. Moreover, blockchain's application in voting systems ensures transparency and eliminates the risk of tampering or fraud, potentially revolutionizing democratic processes. In healthcare, blockchain technology secures sensitive patient data, allowing for secure sharing of medical records among healthcare providers while maintaining patient privacy.

By utilizing blockchain technology, daily life becomes more secure, transparent, and convenient, simplifying various processes and fostering trust in the digital age. As the technology continues to evolve, its potential to enhance daily life seems boundless, opening new possibilities for a safer and more efficient future.

2. Hypothesis

- ❖ Blockchain & smart contract help people's lives to help the functioning of various services in the modern world, sanctity and more secure.

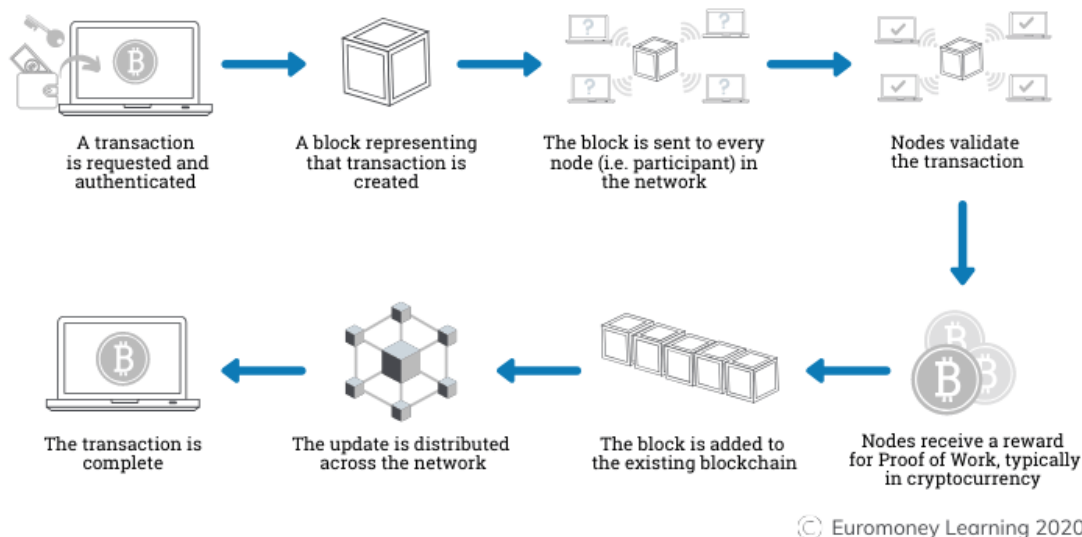
3. Objectives

- ❖ Giving individuals the expertise to use blockchain technology in Sri Lanka is important given that it is not widely used there compared to other nations.
- ❖ Utilizing this technology for online activities including online banking, online payment, and online shopping. Use this technology for real estate and healthcare transactions.
- ❖ In the modern world, even young children launch new initiatives, ventures, and enterprises, go into business for themselves, and grow up to be successful businessmen in the society. These objectives can be accomplished with this technology.

For example, the monthly income of a blockchain developer in America is around 3000\$. In addition, people between the ages of 18-35 who have been employed in that service. Attempting to teach these values to Sri Lankan youth society.

4. Problem

How does a transaction get into the blockchain?



Human beings have a natural tendency to resist change, particularly when it comes to adopting new technologies or innovative concepts. One such revolutionary technological advancement that has faced resistance is blockchain technology and its application through smart contracts. Blockchain, at its core, is a decentralized and immutable digital ledger that records transactions and data in a secure and transparent manner. Smart contracts, on the other hand, are self-executing contracts with the terms of the agreement directly written into code, enabling automated execution without the need for intermediaries.

Problem of Resistance to Change: The resistance to embracing blockchain technology and smart contracts often stems from several factors:

- Lack of Understanding:** Many individuals and organizations are hesitant to adopt new technologies they do not fully comprehend. Blockchain and smart contracts, being complex concepts, can be intimidating for those unfamiliar with the underlying principles.

- ii. **Fear of Disruption:** Existing industries and institutions may perceive blockchain as a threat to their established systems. They fear that adopting this technology might disrupt their traditional business models, leading to a loss of control and revenue.
- iii. **Regulatory Concerns:** The legal and regulatory landscape surrounding blockchain and smart contracts can be ambiguous and challenging to navigate. This uncertainty can deter organizations from implementing these technologies.
- iv. **Technological Barriers:** Blockchain technology requires significant technical expertise, and not all businesses possess the necessary skills or resources to integrate it into their operations.

While blockchain technology and smart contracts hold immense promise to revolutionize various industries, their adoption has not been without challenges. The resistance to change, fueled by fear, uncertainty, and technical barriers, has slowed down the widespread acceptance of these transformative technologies. However, as more successful use cases emerge, and education and awareness increase, the resistance may gradually diminish, leading to a more widespread integration of blockchain and smart contracts into various facets of our lives.

It costs a lot of money to use and create this technology, you can create a blockchain for your own work and business. Since its knowledge is spread over a wide area, one can gain a lot of knowledge about this technology by doing self-study. Then that financial problem also stops. These are some steps of create own blockchain;

- I. Identify a Problem to Solve
- II. Draft Your Business Requirements
- III. Identify a Consensus Mechanism such as PoW , PoS

- IV. Choose the Best Blockchain Platform
- V. Design Your Blockchain Nodes
- VI. Plan Your Blockchain Configuration
- VII. Build Your APIs
- VIII. Design the User Interface
- IX. Choose an Accelerator to Optimize Your Blockchain Application

```
1  import hashlib
2  import json
3  from time import time
4
5  class Blockchain(object):
6      def __init__(self):
7          self.chain = []
8          self.pending_transactions = []
9
10     self.new_block(previous_hash="The Times 03/Jan/2009 Chancellor on
        brink of second bailout for banks.", proof=100)
```

```
57  blockchain = Blockchain()
58  t1 = blockchain.new_transaction("Satoshi", "Mike", '5 BTC')
59  t2 = blockchain.new_transaction("Mike", "Satoshi", '1 BTC')
60  t3 = blockchain.new_transaction("Satoshi", "Hal Finney", '5 BTC')
61  blockchain.new_block(12345)
62
63  t4 = blockchain.new_transaction("Mike", "Alice", '1 BTC')
64  t5 = blockchain.new_transaction("Alice", "Bob", '0.5 BTC')
65  t6 = blockchain.new_transaction("Bob", "Mike", '0.5 BTC')
66  blockchain.new_block(6789)
67
68  print("Blockchain: ", blockchain.chain)
```

The example for creating own blockchain using python.

The top screenshot displays the 'NameStorage.sol' contract in a web IDE. The left sidebar shows the 'DEPLOY & RUN TRANSACTIONS' panel with the contract 'NameStorage - contracts/NameStorage' selected. The 'Deploy' button is highlighted. The main editor shows the Solidity code for 'NameStorage', which includes a constructor and two public functions: 'store' and 'retrieve'. Below the code, the transaction details are shown, including the transaction hash, from address, to address, gas, and transaction cost.

The bottom screenshot displays the 'HelloWorld.sol' contract in the same web IDE. The left sidebar shows the 'DEPLOY & RUN TRANSACTIONS' panel with the contract 'HelloWorld' selected. The 'Deploy' button is highlighted. The main editor shows the Solidity code for 'HelloWorld', which includes a constructor and two public functions: 'getMessage' and 'setMessage'. Below the code, the transaction details are shown, including the transaction hash, from address, to address, gas, and transaction cost. A MetaMask connection overlay is visible on the right side of the screen.

The example for creating smart contract using solidity for deploy and run transaction.

5. Methodology

Method 01

This research was done using articles, blogs, interview surveys, open-ended questions. Our questionnaire from is listed below.

1. Age
2. Gender
3. Hometown / Country
4. Do you know anything about blockchain & smart contract?
5. Are you a crypto holder or trader?
6. Do you know about ethereum blockchain?
7. Do you know about solidity programming language?
8. Do you know about Proof of Work (PoW) & Proof of State (PoS)
9. Are you heard about gas fees, nodes, dApp, hash, ledger, DAO?
10. Do you like to be a blockchain developer?
11. Are you agreed with Utilizing blockchain & smart contract can helps physical works?

Ex: Online transaction security

Healthcare security

Personal & real state security

Also, two forms were created to get the data of people in Sri Lanka and people in other countries to know whether blockchain, smart contract technology is helpful and secure in daily life or not. Compare

the responses and check if this technology is used in other countries than in Sri Lanka.

This google form is placed in groups and channels created in connection with social media such as Facebook, Discord, Reddit, and Telegram and collects the data of people in Sri Lanka as well as in other countries.

Method 02

Check how much blockchain technology has been developed in society by joining the channel that informs people about crypto and blockchain on Instagram. Checked the tests and reports from the following channels.

- I. Cryptocoupe
- II. Crypto exchanges
- III. Crypto explorer
- IV. crypto maniacs
- V. Cryptonary

Method 03

Collecting data from Oxford University and crypto trading platform research.

Method 04

Creating a new blockchain to online banking and business transactions for better security and asking entrepreneurs and prominent figures in Sri Lanka whether blockchain technology is helpful in everyday life or not and analysis data to reach a final conclusion.

6. Time Frame

Activity	Time																														
	Week 01							Week 02							Week 03							Week 04							Other		
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3
Problem Identification																															
Literature review																															
Proposal writing																															
Collecting data																															
Create new blockchain																															
Data analysis																															
Report writing																															

7. References

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