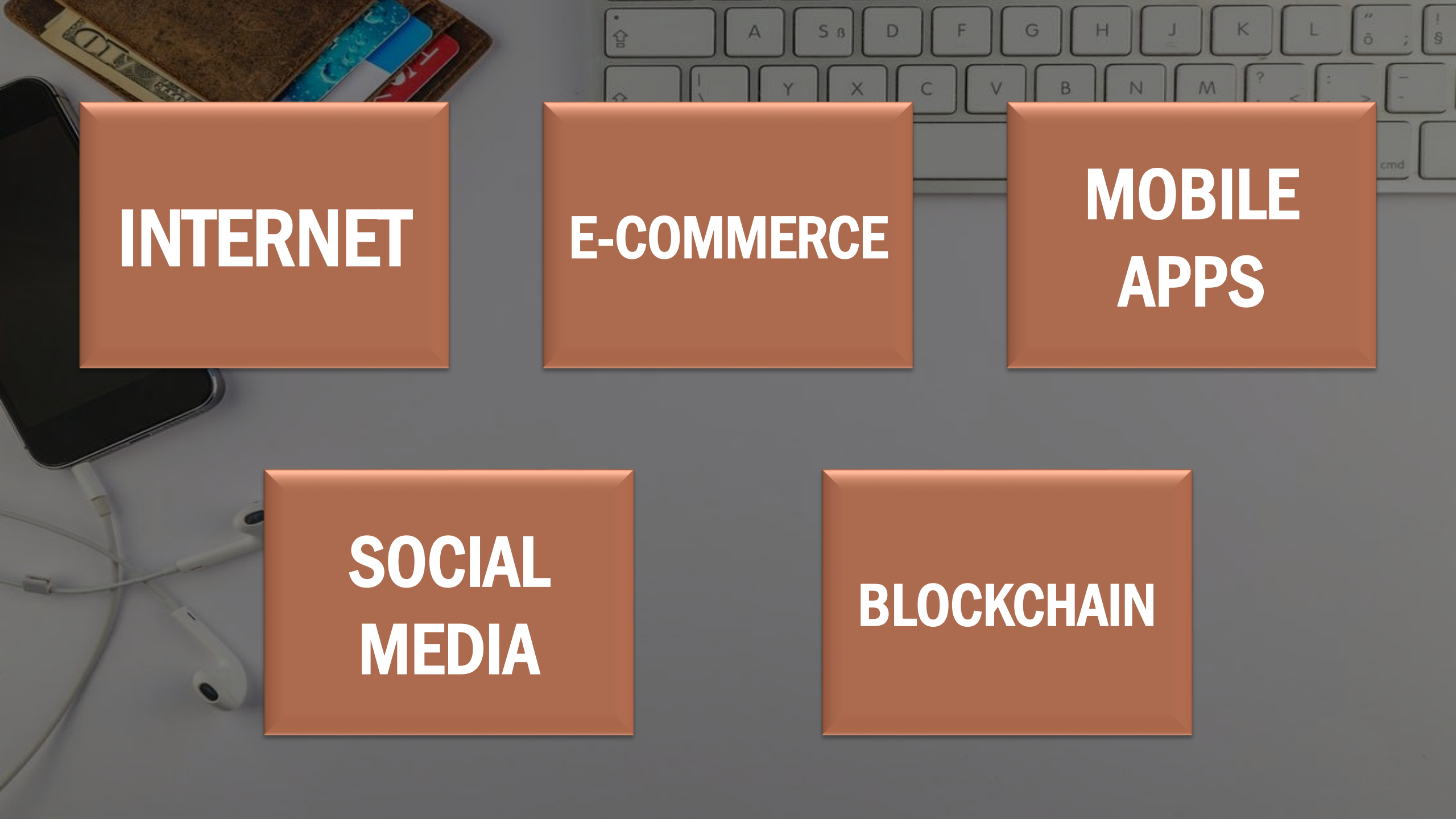

أشيقر
DIGIMENTORS
WELCOME
DAY 98/100
DIGITAL MASTERY CHALLENGE
DATE: OCTOBER 28, 2020, WEDNESDAY
TIME: 06:00 PM (AST)
LIVE FROM DOHA, QATAR


INTERNET
E-COMMERCE
MOBILE APPS
SOCIAL MEDIA
BLOCKCHAIN


BLOCK CHAIN
TECHNOLOGY

HOW WILL I BENEFIT ON THIS WEBINAR?

WEB MINING


HOW TO USE
YOUR PC FOR
WEB MINING

HOW TO MONETIZE YOUR AFFILIATE WEBSITE WITH WEB MINING

AIRDROPS

OTHER OPPORTUNITIES:

ENTRENEURSHIP

INVESTMENT

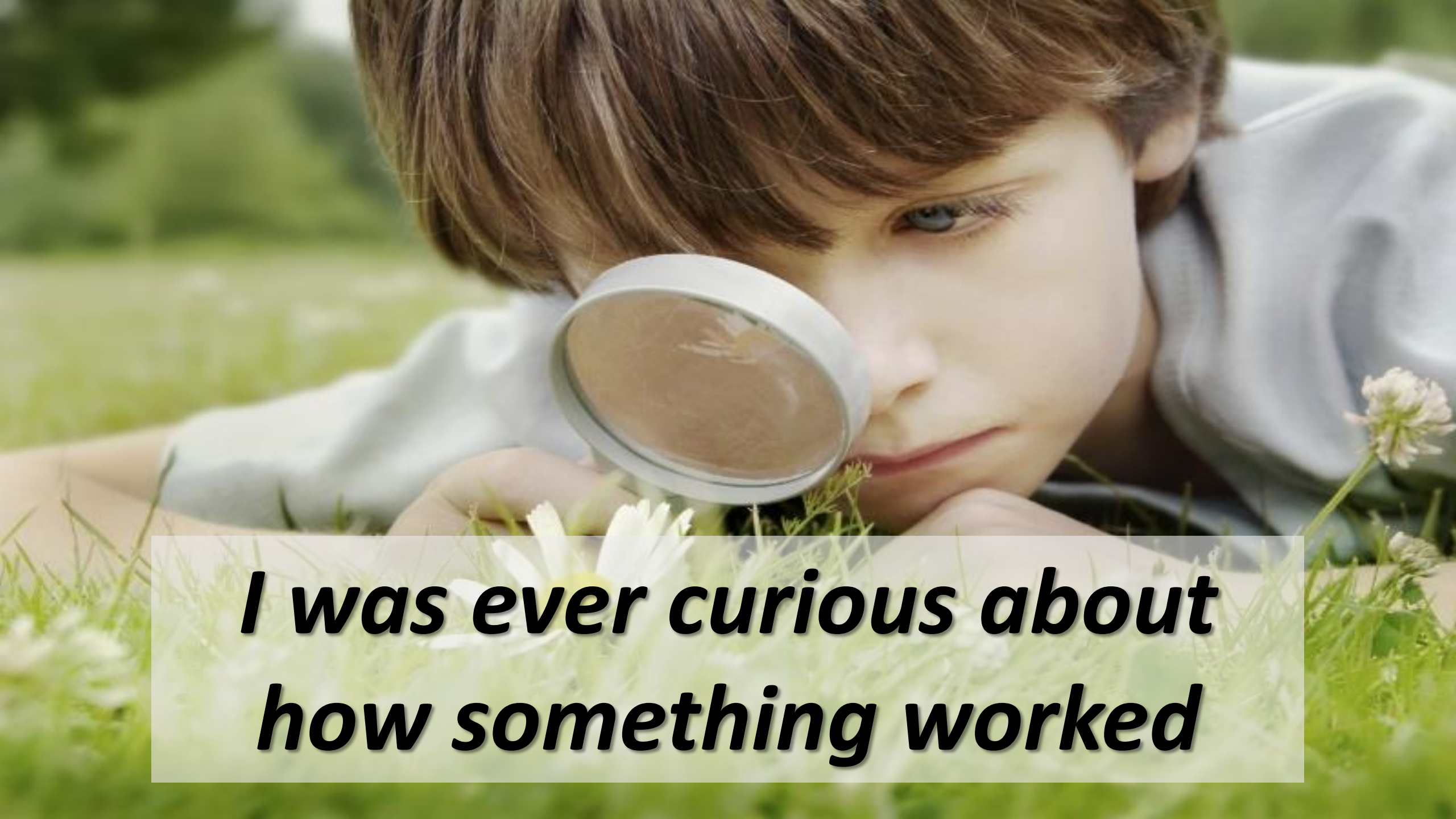
FREELANCE

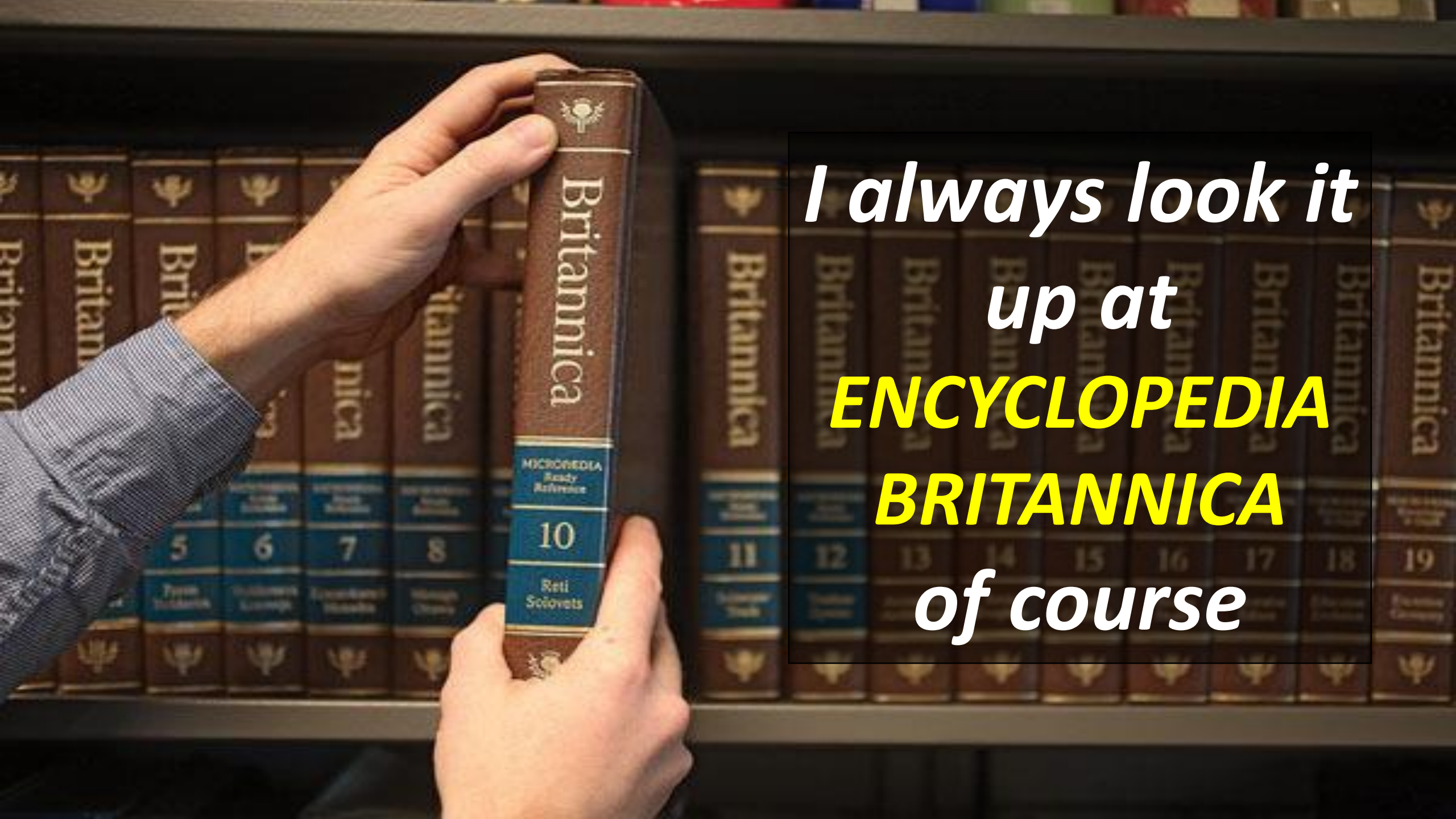
JOBS


BLOCKCHAIN
TECHNOLOGY


THE OTHER DAY WHEN I WAS HANGING OUT WITH MY NEPHEW

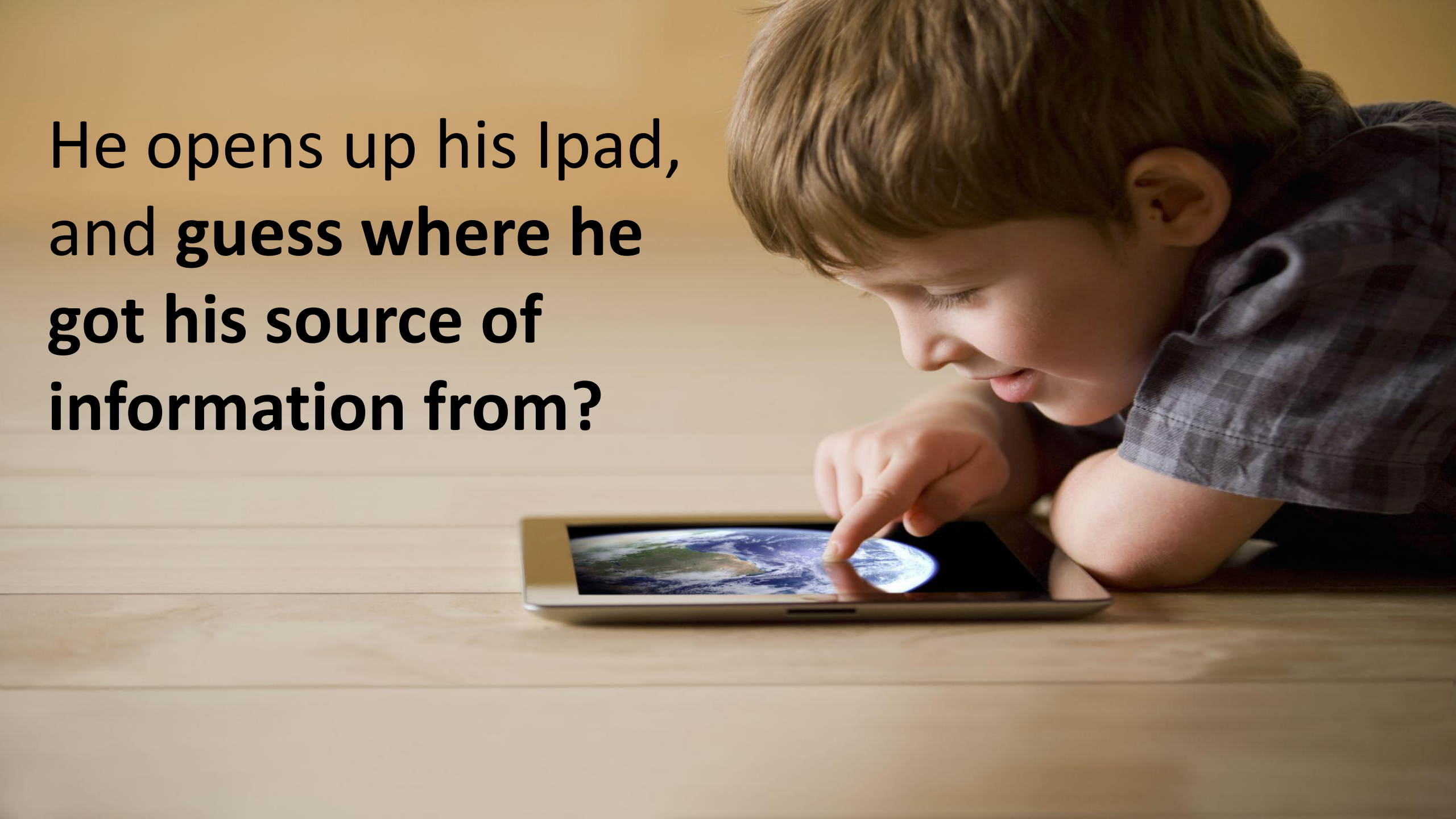
I was telling him what life was when I was in my age!

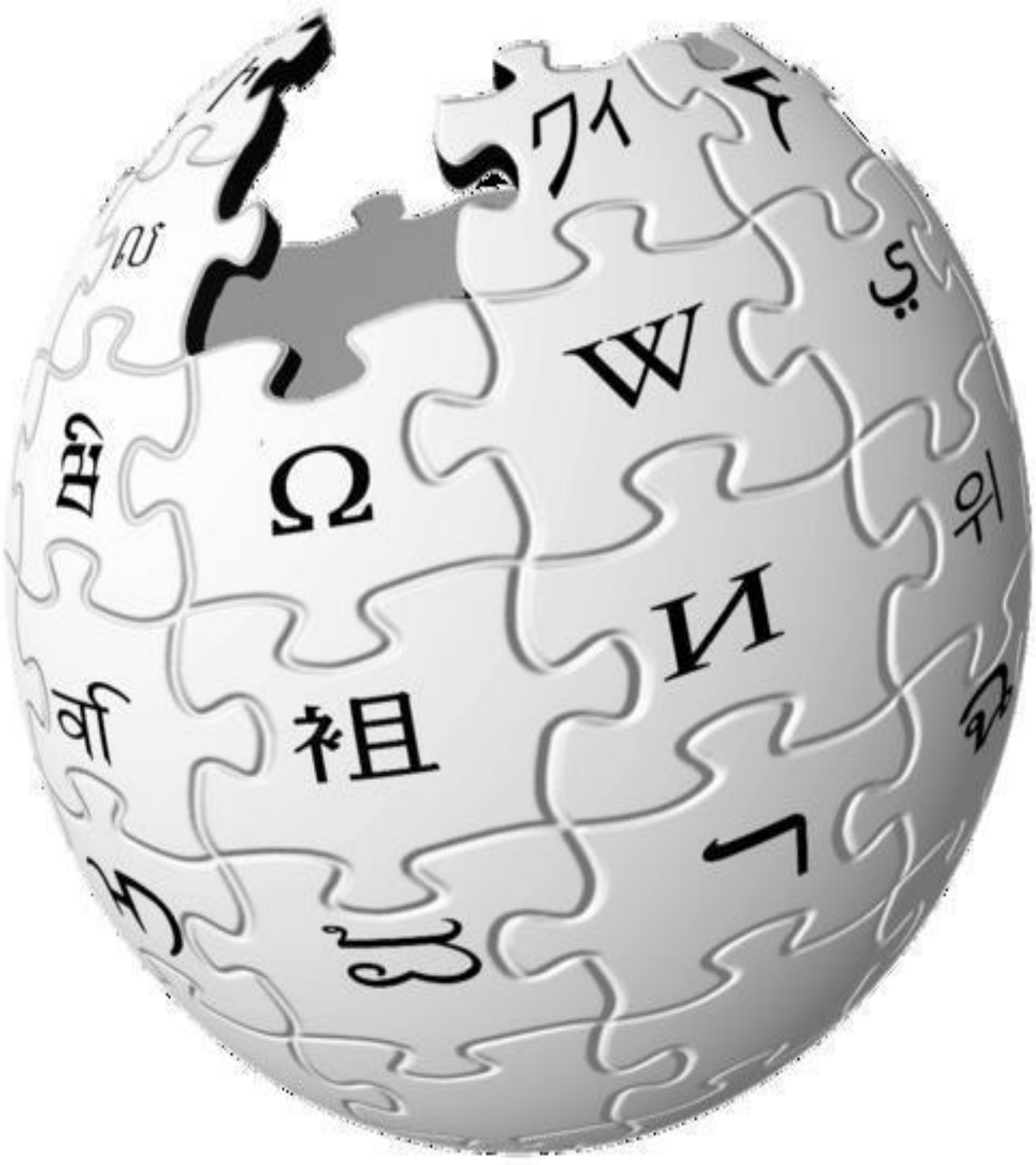

I was ever curious about
how something worked


Britannica
MICROMEDIA
Ready Reference
10
Reti
Solovets
I always look it up at ENCYCLOPEDIA BRITANNICA of course


He had no idea
about what
that was

He opens up his Ipad, and **guess where he got his source of information from?**



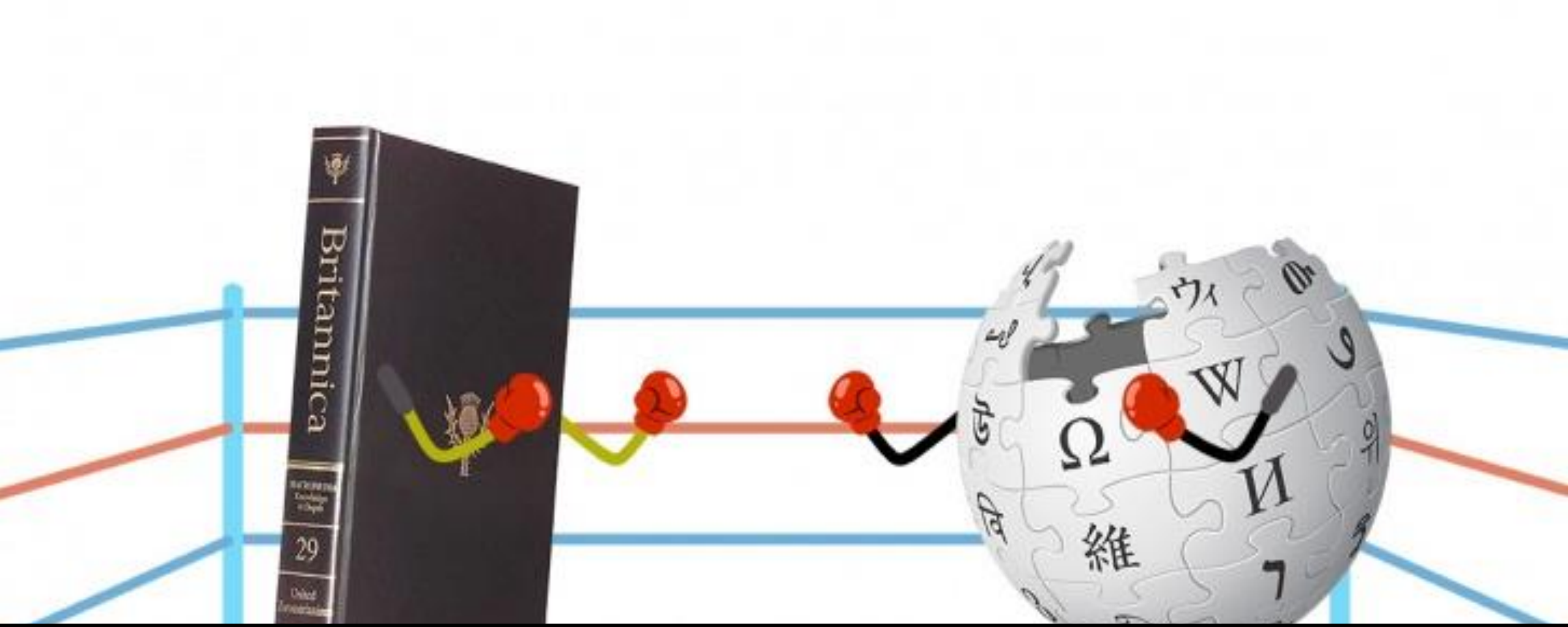


Wikipedia

The Free Encyclopedia

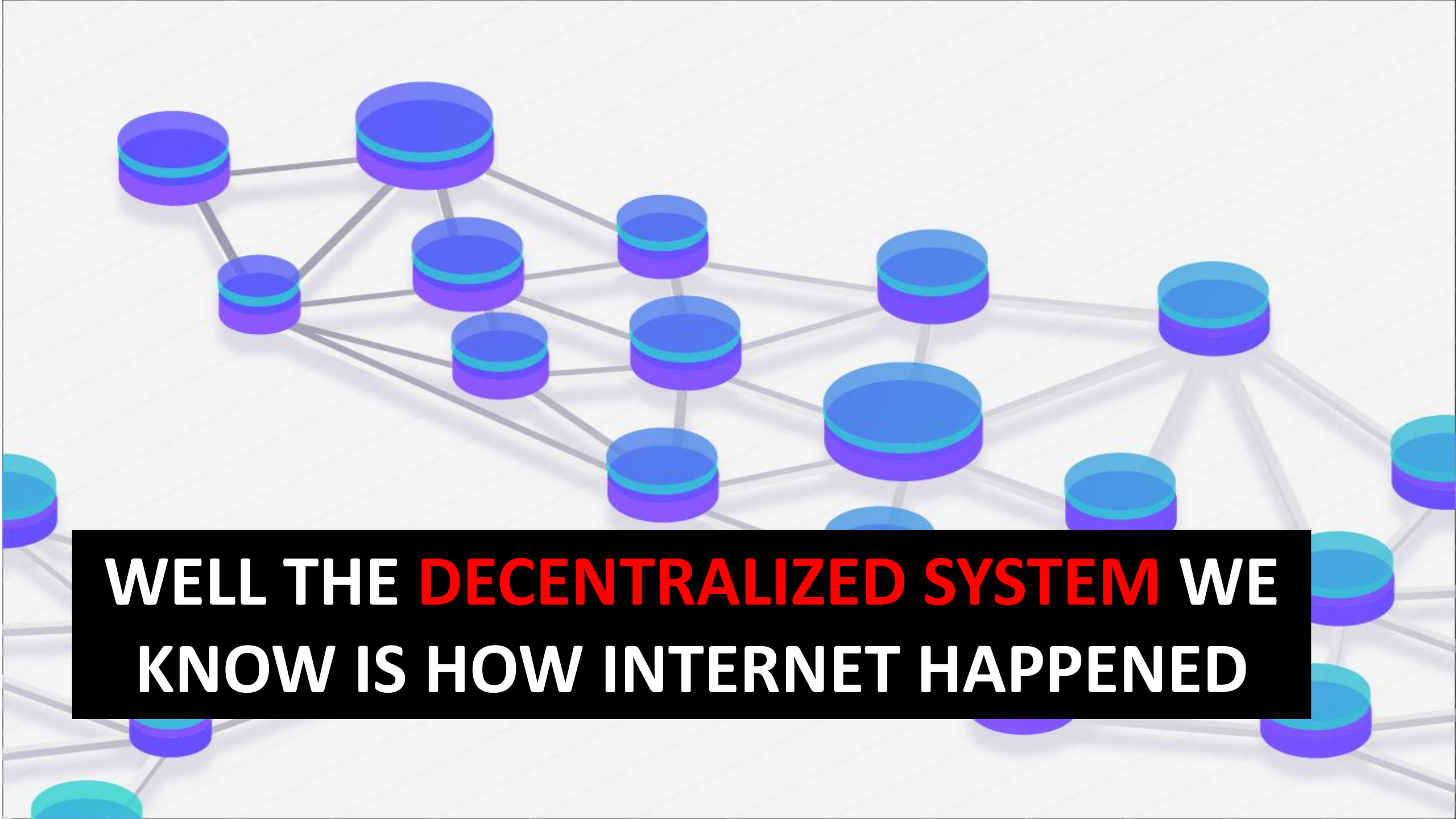
Amazing

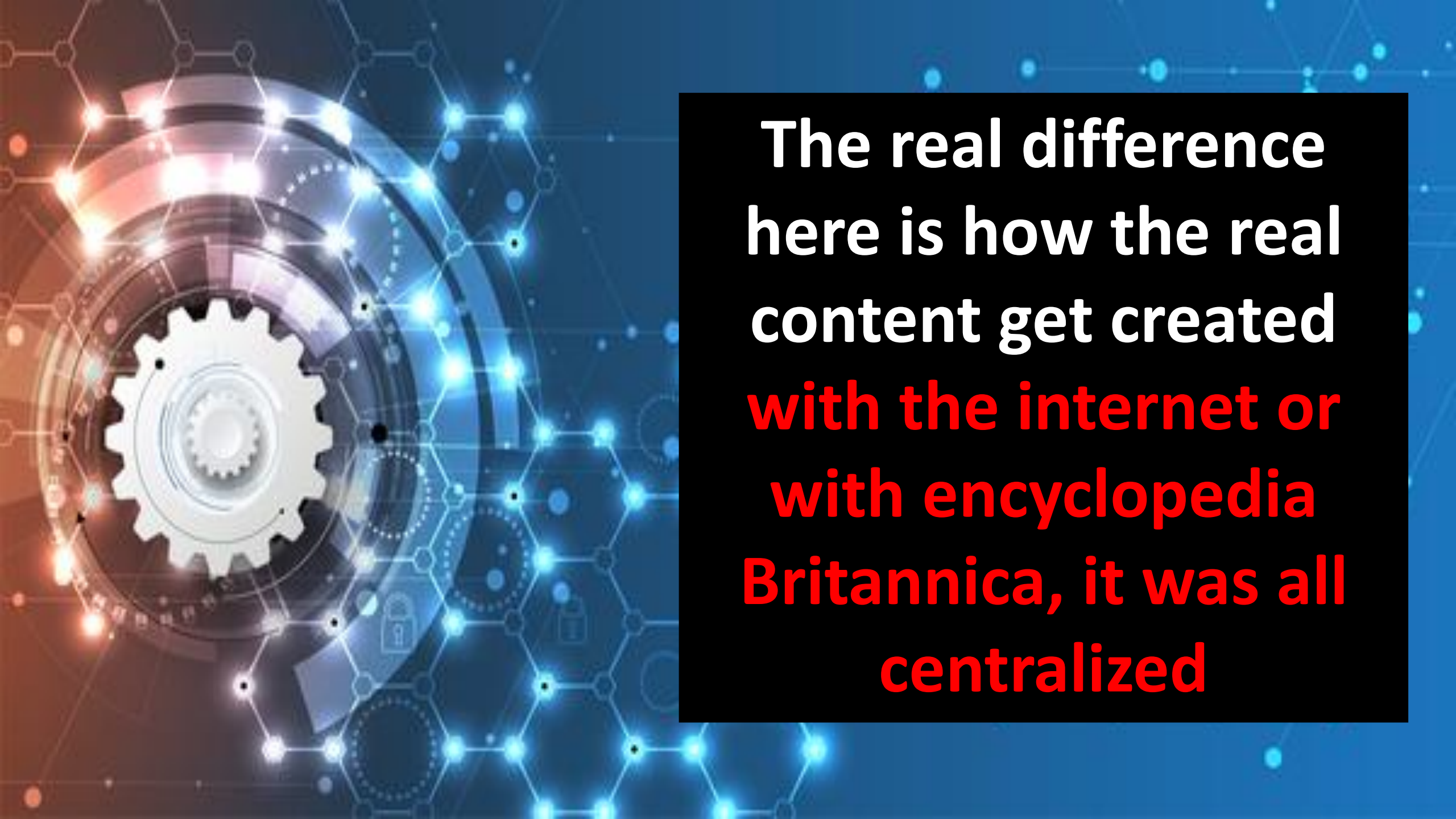
Right?

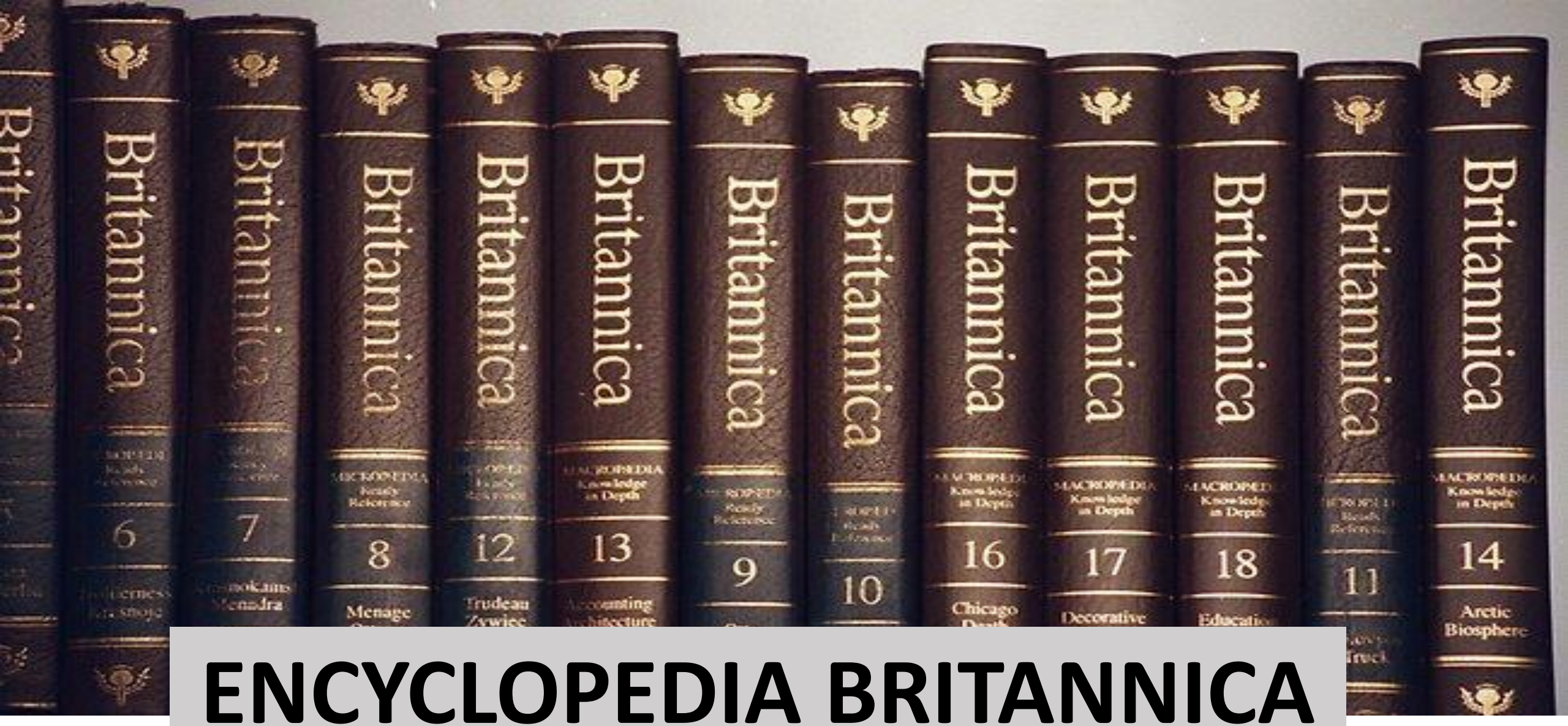


You can fit the entire Encyclopedia Britannica onto one page of Wikipedia.


What really happened here is in one generation
240 year old institution become irrelevant

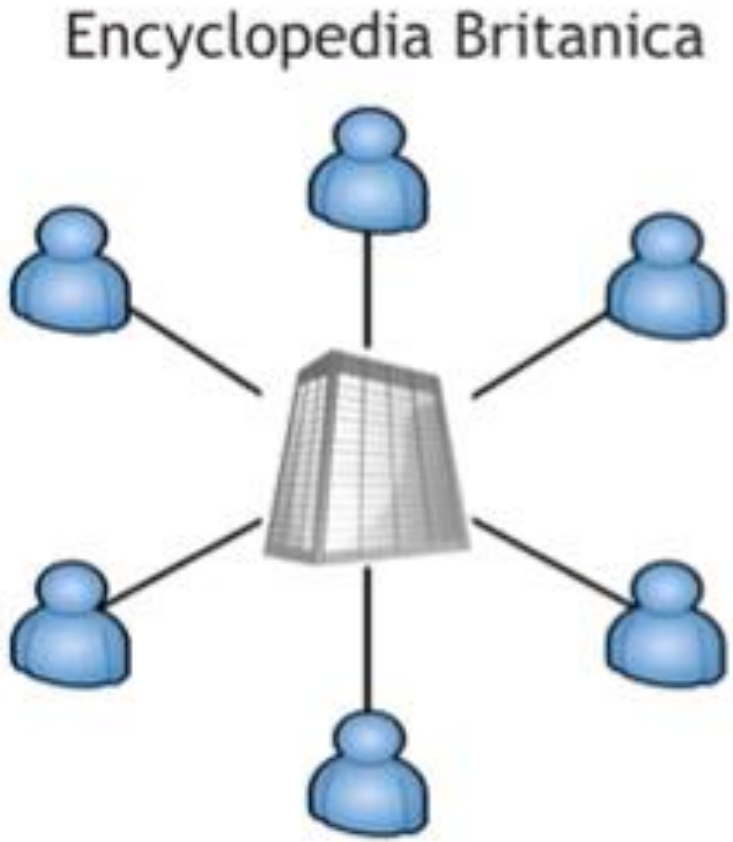

WELL THE DECENTRALIZED SYSTEM WE
KNOW IS HOW INTERNET HAPPENED


The real difference here is how the real content get created with the internet or with encyclopedia Britannica, it was all centralized



ENCYCLOPEDIA BRITANNICA WAS HIGHLY CENTRALIZED

Decentralization of Information

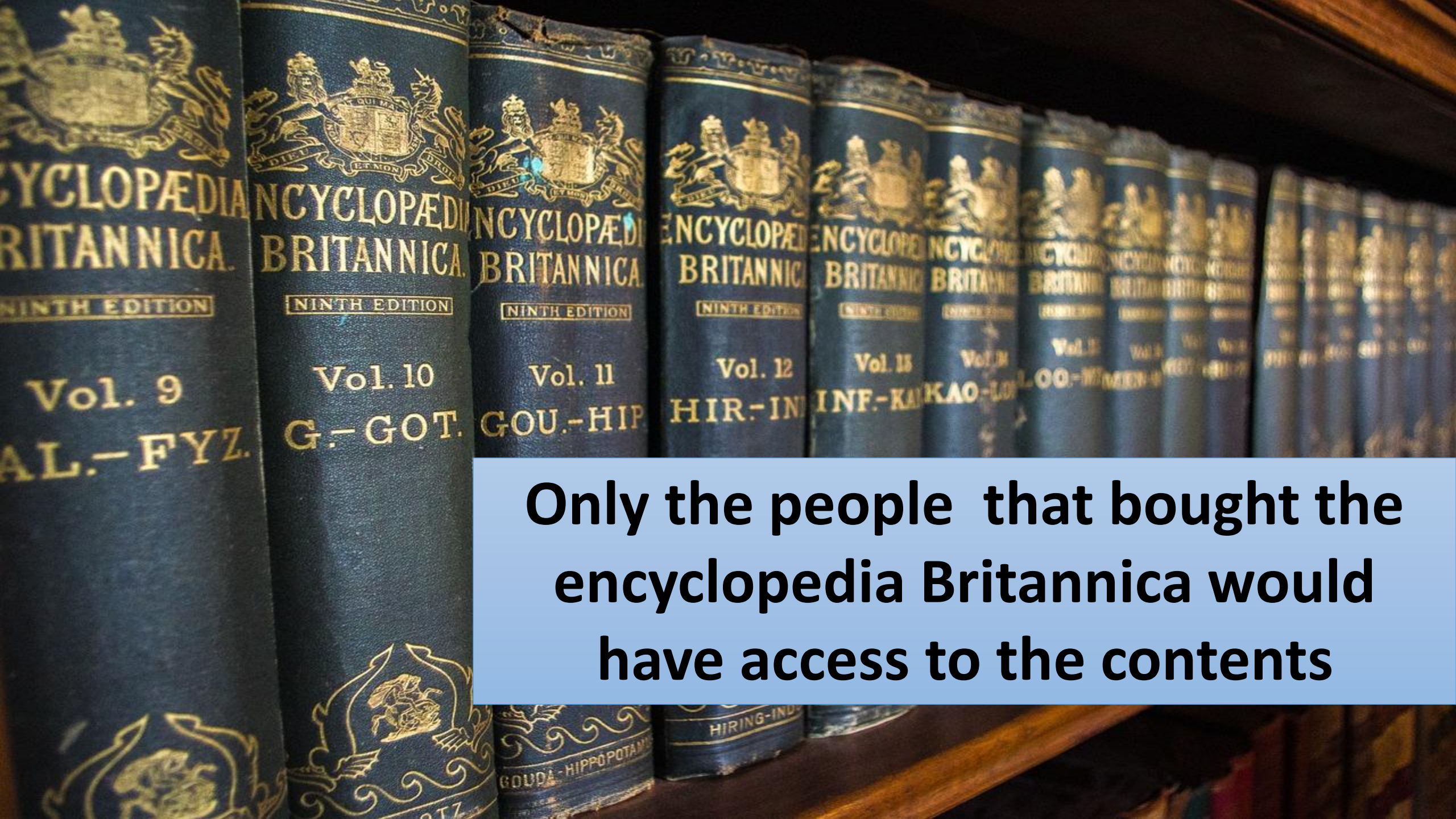


Centralized Content


Encyclopedia Britannica would
go out hire 4000 contributors

THEY CREATE THE CONTENT

THEY GO OUT AND SELL IT



Only the people that bought the encyclopedia Britannica would have access to the contents

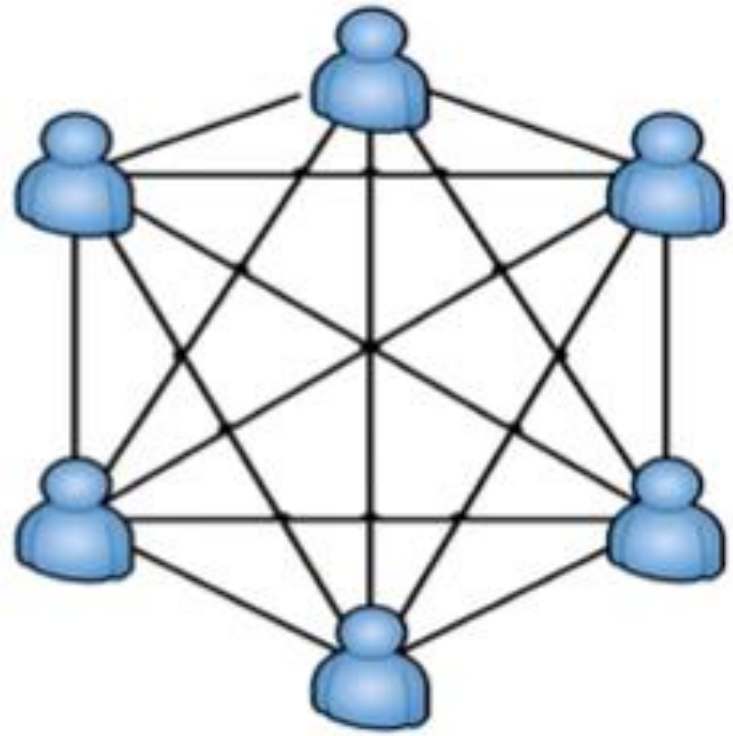
ENCYCLOPEDIA BRITANNICA HAS CENTRALIZED CONTENT

Decentralization of Information

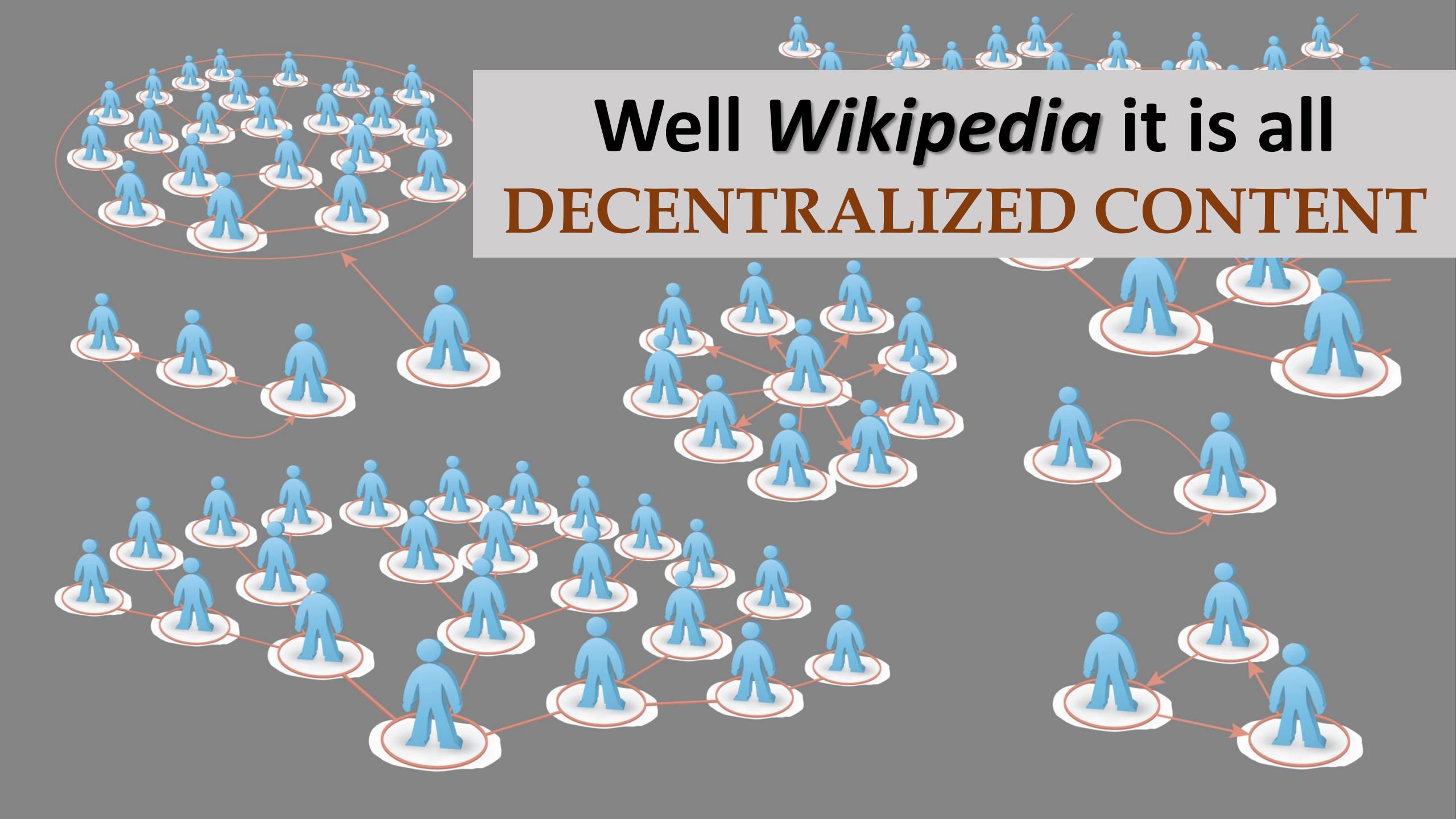
Encyclopedia Britanica

Centralized Content

Wikipedia

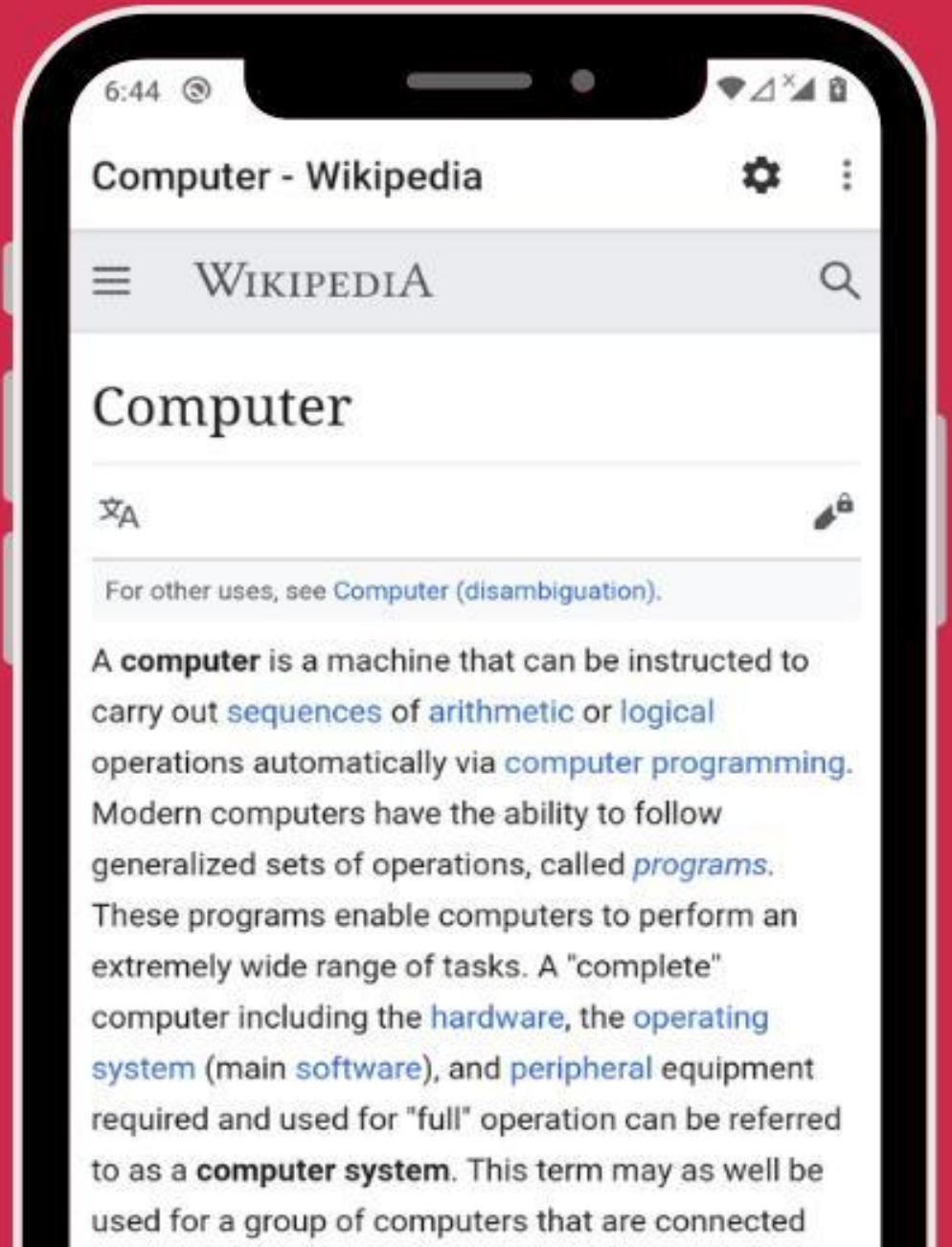


Decentralized Content


Well *Wikipedia* it is all
DECENTRALIZED CONTENT


That means anybody can
contribute content on WIKIPEDIA

AND ANYBODY CAN READ WIKIPEDIA

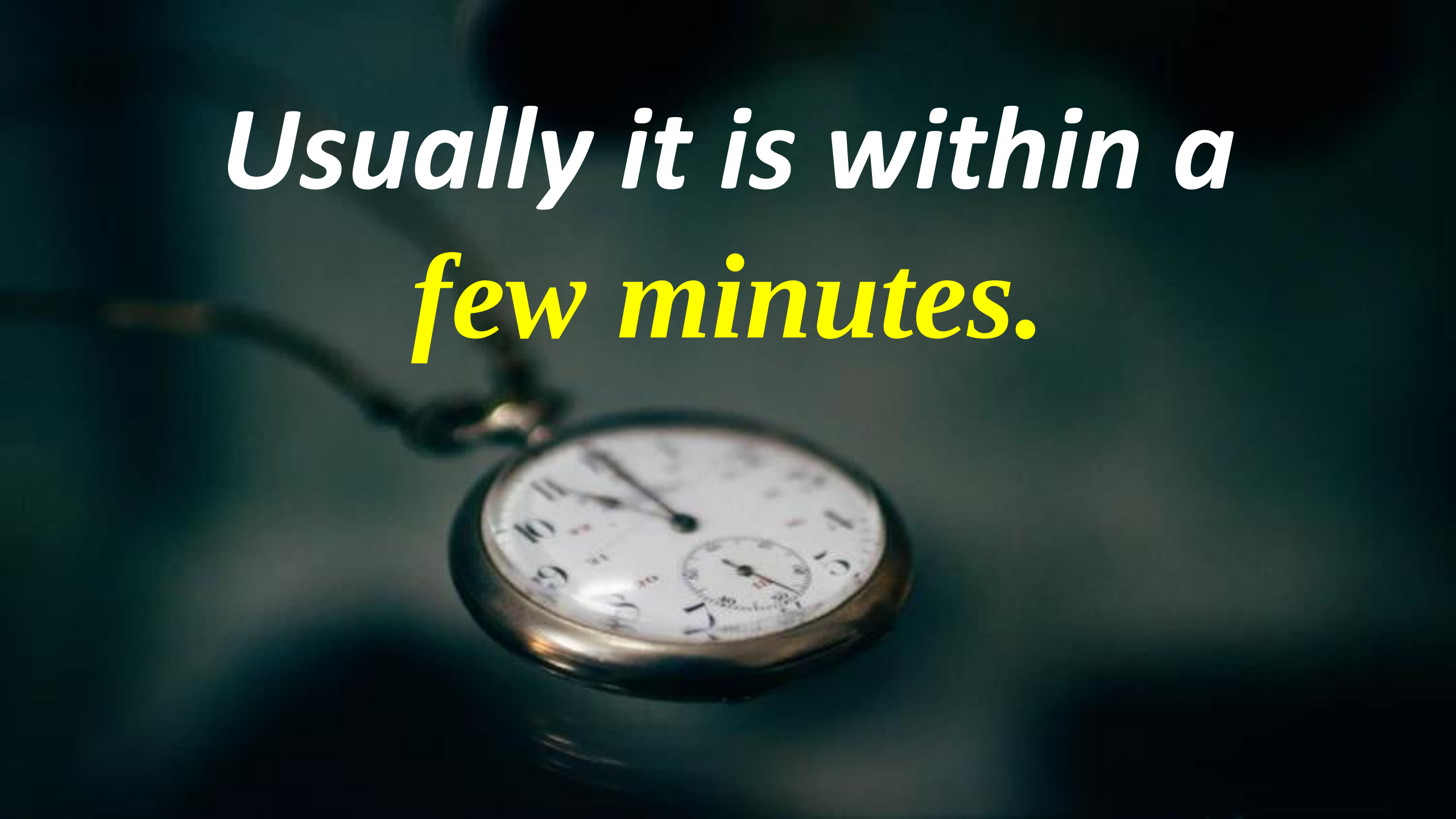


In the end Wikipedia has monthly 270,000 active editors


The other big
difference is SPEED

UPDATE

Next time you're watching a big sporting event see **how fast the score get updated on the Wikipedia page** as the game ends


Usually it is within a
few minutes.

So Wikipedia is one example how the *internet changed our world* by DECENTRALIZING INFORMATION


WELL THE BLOCKCHAIN IS GOING TO
DECENTRALIZE EVERYTHING ELSE


It is going to affect you.

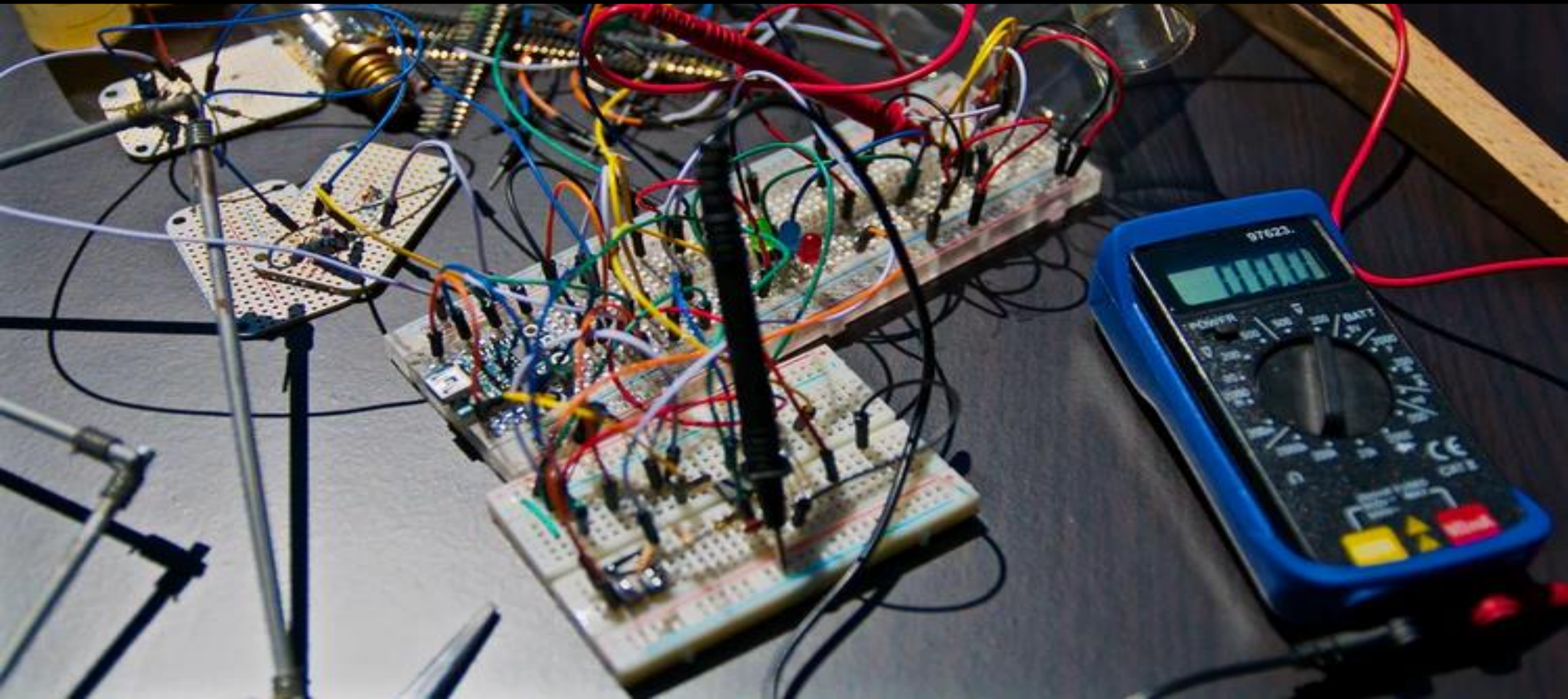
By the end of this session, it will all affect stuff from shoes you're wearing to money in your pocket to the music you consume


2009

We had the financial crisis.


Lot of people lost trust in the banks

So an experiment was launched to see if we could run a DECENTRALIZED PAYMENTS network




Now we could
run a
DECENTRALIZED
PAYMENT
network


THAT'S
BITCOIN


BITCOIN PRICE OVER THE YEARS:
1BTC TO USD

MAR 2010:
$0.003

2011:
$2

2012:
$13

2013:
$600-$1000

2014:
$440-$630

2015:
$395-$504

2016:
$600-$780

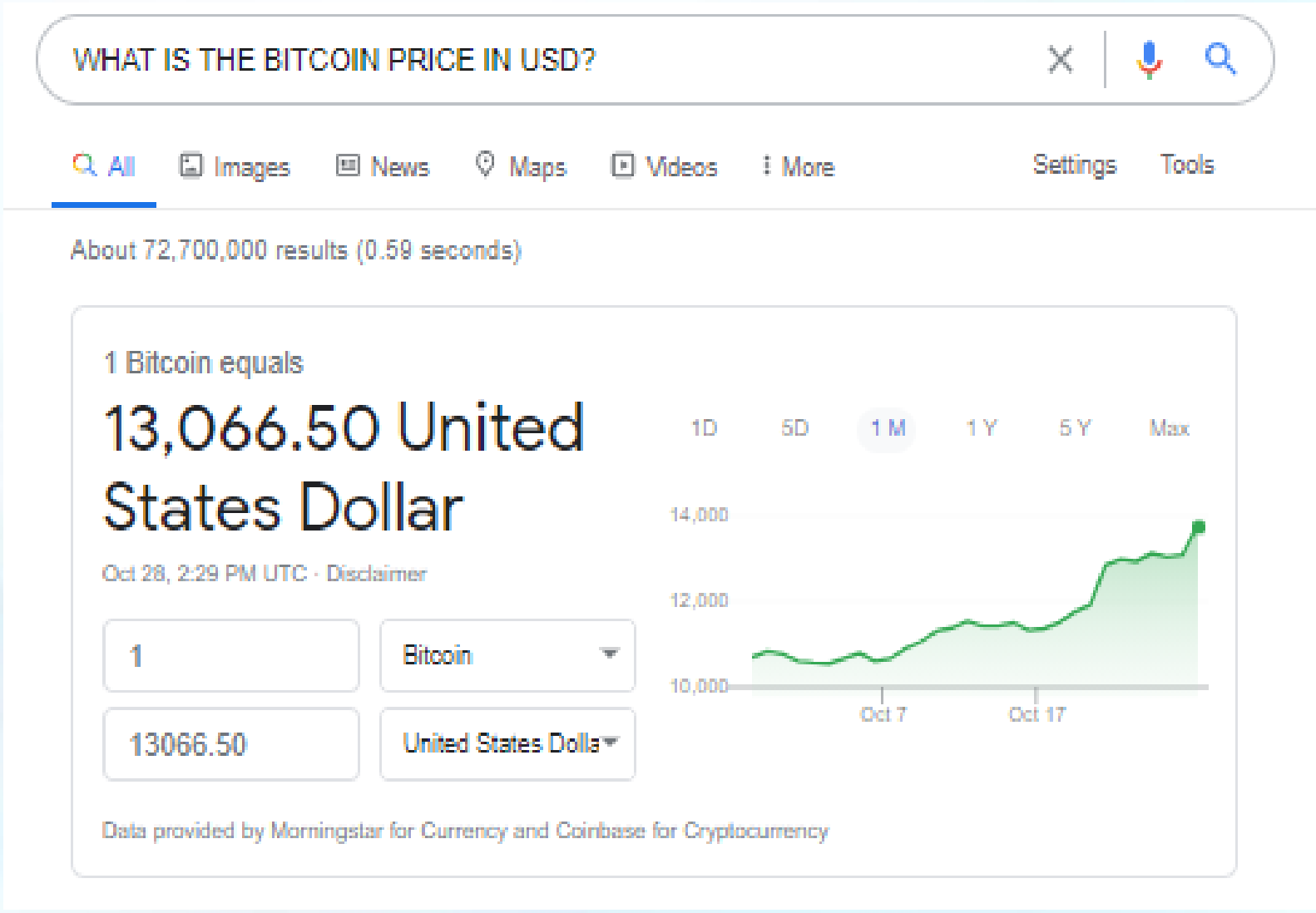
2017:
$13,800

2018:
$6,200

2019:
$3,300

JULY 2020:
$10,944

WHAT IS THE BITCOIN PRICE IN USD?




BITCOIN PRICE
STARTED FROM
$0.003 IN 2010 AND IS
NOW $10,944 IN 2020.

THE BITCOIN

- The first realization of the Blockchain Technology
- 2008
  - **August 18** Domain name "bitcoin.org" registered
  - **October 31** Bitcoin design paper published
  - **November 09** Bitcoin project registered at SourceForge.net
- 2009
  - **January 3** Genesis block established at 18:15:05 GMT
  - **January 9** Bitcoin v0.1 released and announced on the cryptography mailing list
  - **January 12** First Bitcoin transaction, in block 170 from Satoshi to Hal Finney

How It is Started?

- White paper published November 2008 by **Satoshi Nakamoto**
- Bitcoin: A Peer-to-Peer Electronic Cash System»
- Working implementation published 3 months later as an open source project.

BITCOIN WHITEPAPER

9 PAGES

CAN REFER IN THE NOTES

Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

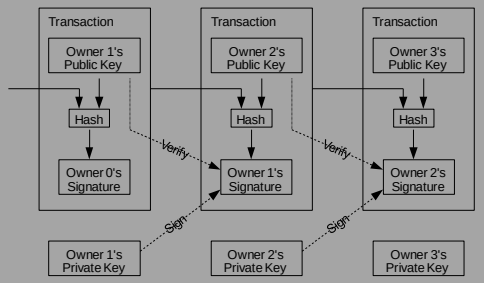
1. Introduction

Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While the system works well enough for most transactions, it still suffers from the inherent weaknesses of the trust based model. Completely non-reversible transactions are not really possible, since financial institutions cannot avoid mediating disputes. The cost of mediation increases transaction costs, limiting the minimum practical transaction size and cutting off the possibility for small casual transactions, and there is a broader cost in the loss of ability to make non-reversible payments for non- reversible services. With the possibility of reversal, the need for trust spreads. Merchants must be wary of their customers, hassling them for more information than they would otherwise need. A certain percentage of fraud is accepted as unavoidable. These costs and payment uncertainties can be avoided in person by using physical currency, but no mechanism exists to make payments over a communications channel without a trusted party.

What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party. Transactions that are computationally impractical to reverse would protect sellers from fraud, and routine escrow mechanisms could easily be implemented to protect buyers. In this paper, we propose a solution to the double-spending problem using a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions. The system is secure as long as honest nodes collectively control more CPU power than any cooperating group of attacker nodes.

2. Transactions

We define an electronic coin as a chain of digital signatures. Each owner transfers the coin to the next by digitally signing a hash of the previous transaction and the public key of the next owner and adding these to the end of the coin. A payee can verify the signatures to verify the chain of ownership.

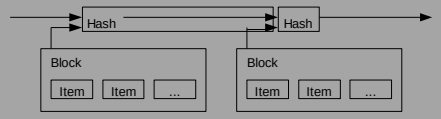


The problem of course is the payee can't verify that one of the owners did not double-spend the coin. A common solution is to introduce a trusted central authority, or mint, that checks every transaction for double spending. After each transaction, the coin must be returned to the mint to issue a new coin, and only coins issued directly from the mint are trusted not to be double-spent. The problem with this solution is that the fate of the entire money system depends on the company running the mint, with every transaction having to go through them, just like a bank.

We need a way for the payee to know that the previous owners did not sign any earlier transactions. For our purposes, the earliest transaction is the one that counts, so we don't care about later attempts to double-spend. The only way to confirm the absence of a transaction is to be aware of all transactions. In the mint based model, the mint was aware of all transactions and decided which arrived first. To accomplish this without a trusted party, transactions must be publicly announced [1], and we need a system for participants to agree on a single history of the order in which they were received. The payee needs proof that at the time of each transaction, the majority of nodes agreed it was the first received.

3. Timestamp Server

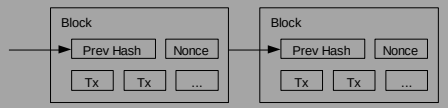
The solution we propose begins with a timestamp server. A timestamp server works by taking a hash of a block of items to be timestamped and widely publishing the hash, such as in a newspaper or Usenet post [2-5]. The timestamp proves that the data must have existed at the time, obviously, in order to get into the hash. Each timestamp includes the previous timestamp in its hash, forming a chain, with each additional timestamp reinforcing the ones before it.



4. Proof-of-Work

To implement a distributed timestamp server on a peer-to-peer basis, we will need to use a proof-of-work system similar to Adam Back's Hashcash [6], rather than newspaper or Usenet posts. The proof-of-work involves scanning for a value that when hashed, such as with SHA-256, the hash begins with a number of zero bits. The average work required is exponential in the number of zero bits required and can be verified by executing a single hash.

For our timestamp network, we implement the proof-of-work by incrementing a nonce in the block until a value is found that gives the block's hash the required zero bits. Once the CPU effort has been expended to make it satisfy the proof-of-work, the block cannot be changed without redoing the work. As later blocks are chained after it, the work to change the block would include redoing all the blocks after it.



The proof-of-work also solves the problem of determining representation in majority decision making. If the majority were based on one-IP-address-one-vote, it could be subverted by anyone able to allocate many IPs. Proof-of-work is essentially one-CPU-one-vote. The majority decision is represented by the longest chain, which has the greatest proof-of-work effort invested in it. If a majority of CPU power is controlled by honest nodes, the honest chain will grow the fastest and outpace any competing chains. To modify a past block, an attacker would have to redo the proof-of-work of the block and all blocks after it and then catch up with and surpass the work of the honest nodes. We will show later that the probability of a slower attacker catching up diminishes exponentially as subsequent blocks are added.

To compensate for increasing hardware speed and varying interest in running nodes over time, the proof-of-work difficulty is determined by a moving average targeting an average number of blocks per hour. If they're generated too fast, the difficulty increases.

5. Network

The steps to run the network are as follows:

1) New transactions are broadcast to all nodes.
2) Each node collects new transactions into a block.
3) Each node works on finding a difficult proof-of-work for its block.
4) When a node finds a proof-of-work, it broadcasts the block to all nodes.
5) Nodes accept the block only if all transactions in it are valid and not already spent.
6) Nodes express their acceptance of the block by working on creating the next block in the chain, using the hash of the accepted block as the previous hash.

Nodes always consider the longest chain to be the correct one and will keep working on extending it. If two nodes broadcast different versions of the next block simultaneously, some nodes may receive one or the other first. In that case, they work on the first one they received, but save the other branch in case it becomes longer. The tie will be broken when the next proof-of-work is found and one branch becomes longer; the nodes that were working on the other branch will then switch to the longer one.

New transaction broadcasts do not necessarily need to reach all nodes. As long as they reach many nodes, they will get into a block before long. Block broadcasts are also tolerant of dropped messages. If a node does not receive a block, it will request it when it receives the next block and realizes it missed one.

6. Incentive

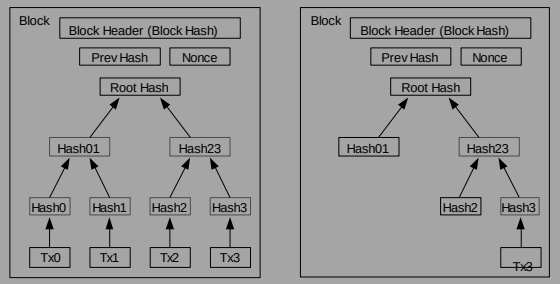
By convention, the first transaction in a block is a special transaction that starts a new coin owned by the creator of the block. This adds an incentive for nodes to support the network, and provides a way to initially distribute coins into circulation, since there is no central authority to issue them. The steady addition of a constant of amount of new coins is analogous to gold miners expending resources to add gold to circulation. In our case, it is CPU time and electricity that is expended.

The incentive can also be funded with transaction fees. If the output value of a transaction is less than its input value, the difference is a transaction fee that is added to the incentive value of the block containing the transaction. Once a predetermined number of coins have entered circulation, the incentive can transition entirely to transaction fees and be completely inflation free.

The incentive may help encourage nodes to stay honest. If a greedy attacker is able to assemble more CPU power than all the honest nodes, he would have to choose between using it to defraud people by stealing back his payments, or using it to generate new coins. He ought to find it more profitable to play by the rules, such rules that favour him with more new coins than everyone else combined, than to undermine the system and the validity of his own wealth.

7. Reclaiming Disk Space

Once the latest transaction in a coin is buried under enough blocks, the spent transactions before it can be discarded to save disk space. To facilitate this without breaking the block's hash, transactions are hashed in a Merkle Tree [7][2][5], with only the root included in the block's hash. Old blocks can then be compacted by stubbing off branches of the tree. The interior hashes do not need to be stored.



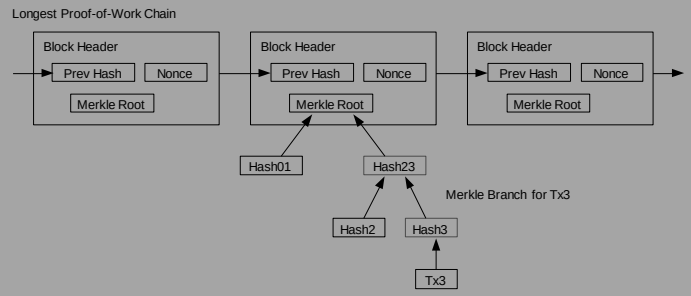
Transactions Hashed in a Merkle Tree

After Pruning Tx0-2 from the Block

A block header with no transactions would be about 80 bytes. If we suppose blocks are generated every 10 minutes, 80 bytes * 6 * 24 * 365 = 4.2MB per year. With computer systems typically selling with 2GB of RAM as of 2008, and Moore's Law predicting current growth of 1.2GB per year, storage should not be a problem even if the block headers must be kept in memory.

8. Simplified Payment Verification

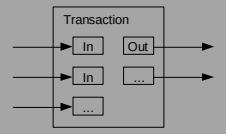
It is possible to verify payments without running a full network node. A user only needs to keep a copy of the block headers of the longest proof-of-work chain, which he can get by querying network nodes until he's convinced he has the longest chain, and obtain the Merkle branch linking the transaction to the block it's timestamped in. He can't check the transaction for himself, but by linking it to a place in the chain, he can see that a network node has accepted it, and blocks added after it further confirm the network has accepted it.



As such, the verification is reliable as long as honest nodes control the network, but is more vulnerable if the network is overpowered by an attacker. While network nodes can verify transactions for themselves, the simplified method can be fooled by an attacker's fabricated transactions for as long as the attacker can continue to overpower the network. One strategy to protect against this would be to accept alerts from network nodes when they detect an invalid block, prompting the user's software to download the full block and alerted transactions to confirm the inconsistency. Businesses that receive frequent payments will probably still want to run their own nodes for more independent security and quicker verification.

9. Combining and Splitting Value

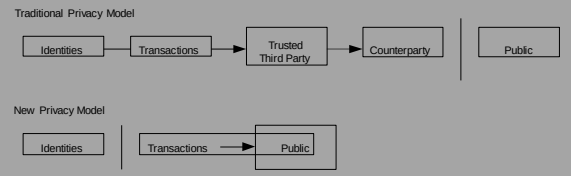
Although it would be possible to handle coins individually, it would be unwieldy to make a separate transaction for every cent in a transfer. To allow value to be split and combined, transactions contain multiple inputs and outputs. Normally there will be either a single input from a larger previous transaction or multiple inputs combining smaller amounts, and at most two outputs: one for the payment, and one returning the change, if any, back to the sender.



It should be noted that fan-out, where a transaction depends on several transactions, and those transactions depend on many more, is not a problem here. There is never the need to extract a complete standalone copy of a transaction's history.

10. Privacy

The traditional banking model achieves a level of privacy by limiting access to information to the parties involved and the trusted third party. The necessity to announce all transactions publicly precludes this method, but privacy can still be maintained by breaking the flow of information in another place: by keeping public keys anonymous. The public can see that someone is sending an amount to someone else, but without information linking the transaction to anyone. This is similar to the level of information released by stock exchanges, where the time and size of individual trades, the "tape", is made public, but without telling who the parties were.



As an additional firewall, a new key pair should be used for each transaction to keep them from being linked to a common owner. Some linking is still unavoidable with multi-input transactions, which necessarily reveal that their inputs were owned by the same owner. The risk is that if the owner of a key is revealed, linking could reveal other transactions that belonged to the same owner.

11. Calculations

We consider the scenario of an attacker trying to generate an alternate chain faster than the honest chain. Even if this is accomplished, it does not throw the system open to arbitrary changes, such as creating value out of thin air or taking money that never belonged to the attacker. Nodes are not going to accept an invalid transaction as payment, and honest nodes will never accept a block containing them. An attacker can only try to change one of his own transactions to take back money he recently spent.

The race between the honest chain and an attacker chain can be characterized as a Binomial Random Walk. The success event is the honest chain being extended by one block, increasing its lead by +1, and the failure event is the attacker's chain being extended by one block, reducing the gap by -1.

The probability of an attacker catching up from a given deficit is analogous to a Gambler's Ruin problem. Suppose a gambler with unlimited credit starts at a deficit and plays potentially an infinite number of trials to try to reach breakeven. We can calculate the probability he ever reaches breakeven, or that an attacker ever catches up with the honest chain, as follows [8]:

p = probability an honest node finds the next block
q = probability the attacker finds the next block
q_z = probability the attacker will ever catch up from z blocks behind

$$q_z = \begin{cases} 1 & \text{if } p \leq q \\ (q/p)^z & \text{if } p < q \end{cases}$$

Given our assumption that $p > q$, the probability drops exponentially as the number of blocks the attacker has to catch up with increases. With the odds against him, if he doesn't make a lucky lunge forward early on, his chances become vanishingly small as he falls further behind.

We now consider how long the recipient of a new transaction needs to wait before being sufficiently certain the sender can't change the transaction. We assume the sender is an attacker who wants to make the recipient believe he paid him for a while, then switch it to pay back to himself after some time has passed. The receiver will be alerted when that happens, but the sender hopes it will be too late.

The receiver generates a new key pair and gives the public key to the sender shortly before signing. This prevents the sender from preparing a chain of blocks ahead of time by working on it continuously until he is lucky enough to get far enough ahead, then executing the transaction at that moment. Once the transaction is sent, the dishonest sender starts working in secret on a parallel chain containing an alternate version of his transaction.

The recipient waits until the transaction has been added to a block and z blocks have been linked after it. He doesn't know the exact amount of progress the attacker has made, but assuming the honest blocks took the average expected time per block, the attacker's potential progress will be a Poisson distribution with expected value:

$$\lambda = z \frac{q}{p}$$

To get the probability the attacker could still catch up now, we multiply the Poisson density for each amount of progress he could have made by the probability he could catch up from that point:

$$\sum_{k=0}^{\infty} \frac{\lambda^k e^{-\lambda}}{k!} \cdot \begin{cases} (q/p)^{z-k} & \text{if } k \le z \\ 1 & \text{if } k > z \end{cases}$$

Rearranging to avoid summing the infinite tail of the distribution...

$$1 - \sum_{k=0}^{z} \frac{\lambda^k e^{-\lambda}}{k!} \left(1 - (q/p)^{z-k}\right)$$

Converting to C code...

```
#include <math.h>
double AttackerSuccessProbability(double q, int z)
{
    double p = 1.0 - q;
    double lambda = z * (q / p);
    double sum = 1.0;
    int i, k;
    for (k = 0; k <= z; k++)
    {
        double poisson = exp(-lambda);
        for (i = 1; i <= k; i++)
            poisson *= lambda / i;
        sum -= poisson * (1 - pow(q / p, z - k));
    }
    return sum;
}
```

Running some results, we can see the probability drop off exponentially with z.

```
q=0.1
z=0     P=1.0000000
z=1     P=0.2045873
z=2     P=0.0509779
z=3     P=0.0131722
z=4     P=0.0034552
z=5     P=0.0009137
z=6     P=0.0002428
z=7     P=0.0000647
z=8     P=0.0000173
z=9     P=0.0000046
z=10    P=0.0000012

q=0.3
z=0     P=1.0000000
z=5     P=0.1773523
z=10    P=0.0416605
z=15    P=0.0101008
z=20    P=0.0024804
z=25    P=0.0006132
z=30    P=0.0001522
z=35    P=0.0000379
z=40    P=0.0000095
z=45    P=0.0000024
z=50    P=0.0000006
```

Solving for P less than 0.1%...

```
P < 0.001
q=0.10   z=5
q=0.15   z=8
q=0.20   z=11
q=0.25   z=15
q=0.30   z=24
q=0.35   z=41
q=0.40   z=89
q=0.45   z=340
```

12. Conclusion

We have proposed a system for electronic transactions without relying on trust. We started with the usual framework of coins made from digital signatures, which provides strong control of ownership, but is incomplete without a way to prevent double-spending. To solve this, we proposed a peer-to-peer network using proof-of-work to record a public history of transactions that quickly becomes computationally impractical for an attacker to change if honest nodes control a majority of CPU power. The network is robust in its unstructured simplicity. Nodes work all at once with little coordination. They do not need to be identified, since messages are not routed to any particular place and only need to be delivered on a best effort basis. Nodes can leave and rejoin the network at will, accepting the proof-of-work chain as proof of what happened while they were gone. They vote with their CPU power, expressing their acceptance of valid blocks by working on extending them and rejecting invalid blocks by refusing to work on them. Any needed rules and incentives can be enforced with this consensus mechanism.

References

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3 S. Haber, W.S. Stornetta, "How to time-stamp a digital document," In *Journal of Cryptology*, vol 3, no 2, pages 99-111, 1991.

4 D. Bayer, S. Haber, W.S. Stornetta, "Improving the efficiency and reliability of digital time-stamping," In *Sequences II: Methods in Communication, Security and Computer Science*, pages 329-334, 1993.

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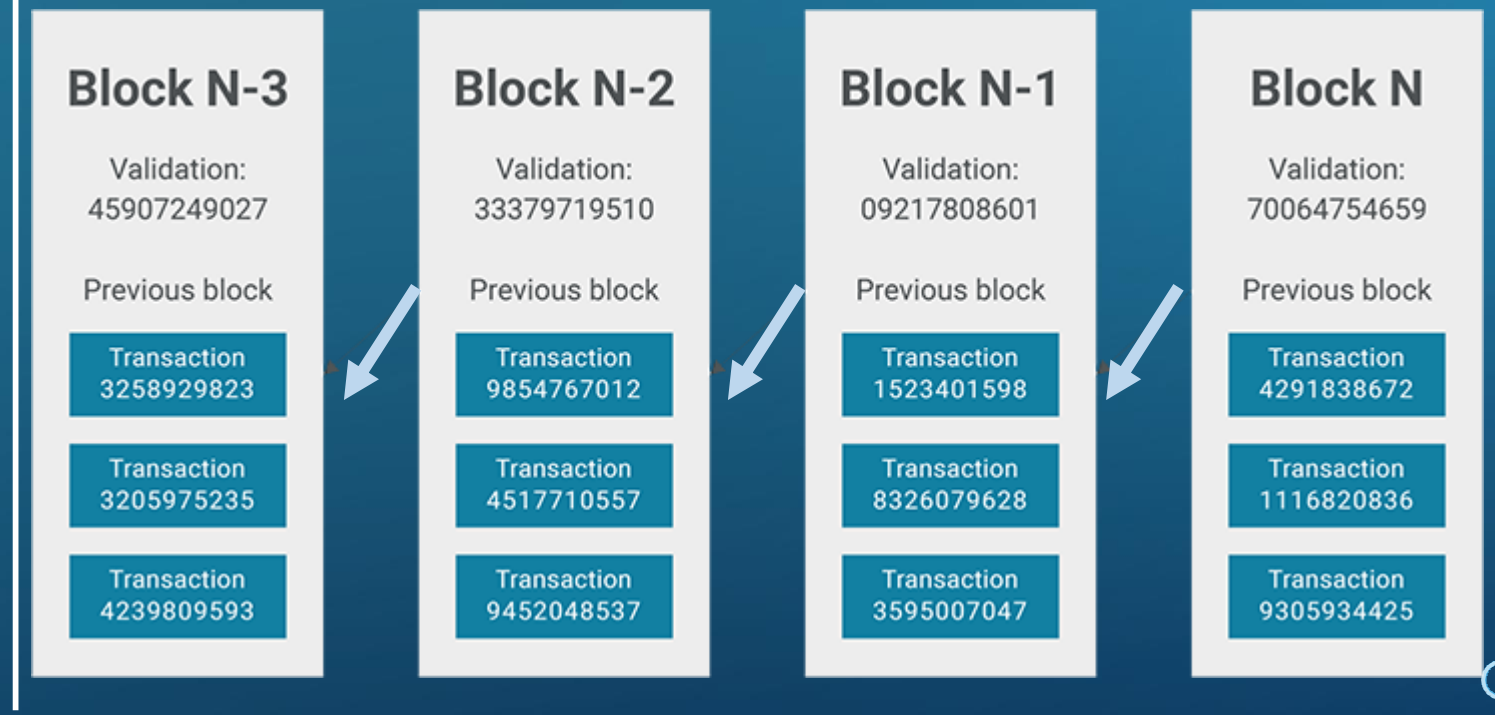
8 W. Feller, "An introduction to probability theory and its applications," 1957.

BLOCKS


Block N-3
Validation:
45907249027
Previous block
Transaction
3258929823
Transaction
3205975235
Transaction
4239809593
Block N-2
Validation:
33379719510
Previous block
Transaction
9854767012
Transaction
4517710557
Transaction
9452048537
Block N-1
Validation:
09217808601
Previous block
Transaction
1523401598
Transaction
8326079628
Transaction
3595007047
Block N
Validation:
70064754659
Previous block
Transaction
4291838672
Transaction
1116820836
Transaction
9305934425

THE ETHEREUM BLOCKCHAIN

Ethereum Co-Founder Awarded Forbes' '30 Under 30'

Jack Filiba
November 17, 2017

Feature from **Markets** →

Vladimir Putin and Vitalik Buterin Discuss Ethereum 'Opportunities'

Jun 5, 2017 at 17:31 UTC • Updated Jun 5, 2017 at 17:32 UTC

The president of Russia briefly met with ethereum inventor Vitalik Buterin during an event last week.

Michael del Castillo

SMART CONTRACT

- Transactions in bitcoin are limited
  - Transfer ‘X’ bitcoins from ‘Y’ to ‘Z’
- More powerful transactions
  - Exchange
  - Auction
  - Games
  - Bets
  - Legal agreements
- Solution
  - Store smart contracts on the blockchain
  - Computer programs implement transactions
  - Immutability guarantees persistence

THE ETHEREUM

- A decentralized platform that runs **smart contracts**
- Proposed in late 2013 by Vitalik Buterin
- Released 2015
- Supports turning complete smart contracts (Solidity)
- A virtual machine for cryptocurrency (Ethereum Virtual Machine)
  - Creating new currencies
  - Guaranteeing certain currency consistency
- But has all bad features of computer programs (DAO, Parity, …)


It is seen as new hope!

BLOCKCHAIN IS A TERM THAT HAS COME TO MEAN MANY THINGS TO MANY PEOPLE

For developers, it is set of protocols and encryption technologies for securely storing data on a distributed network

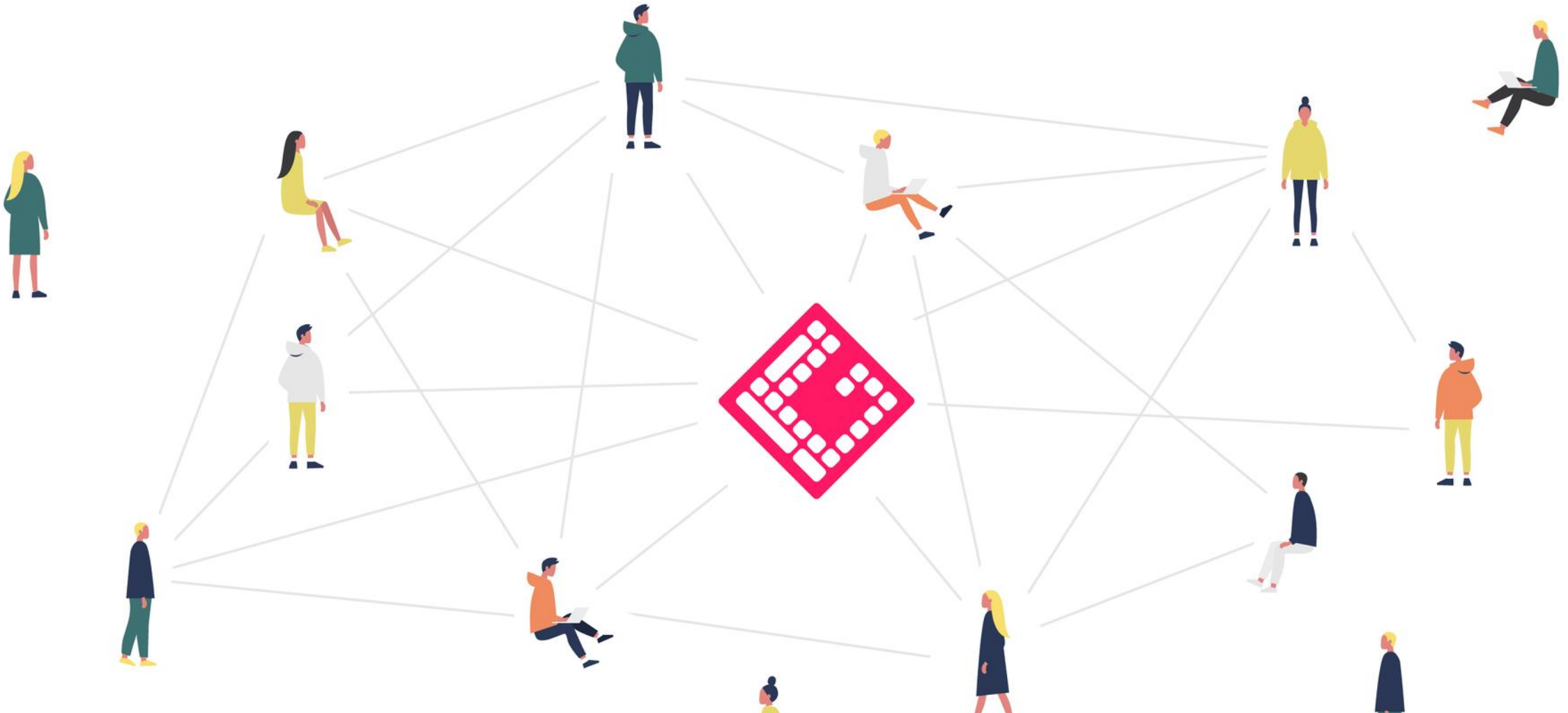
For business and finance, it is distributer ledger and the technology underlying the explosion of new digital currencies

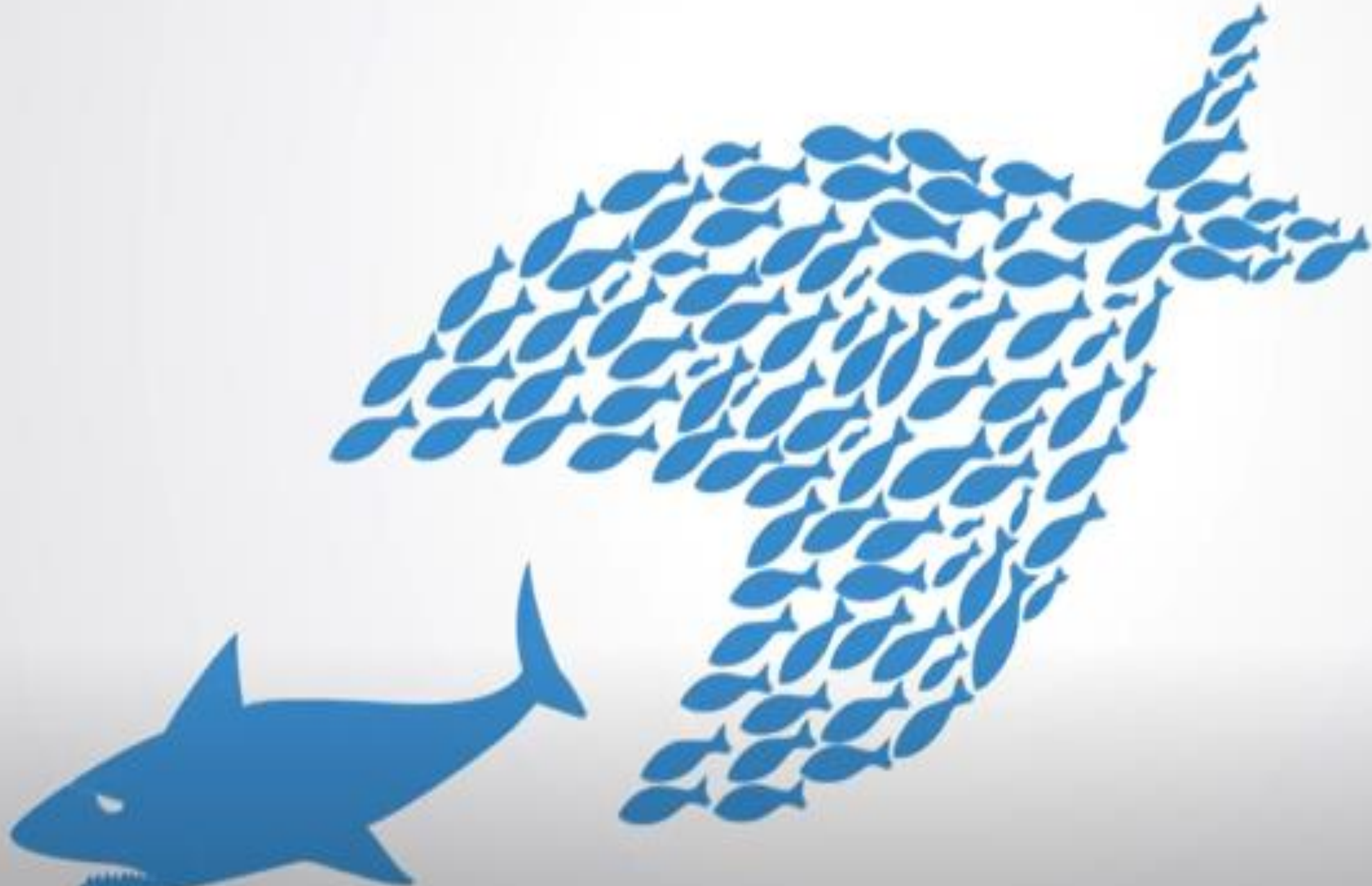
For technologists, it is the driving force behind the next generation of the internet

For others, it is a tool for radically reshaping society and the economy taking us to a more decentralized world

BLOCK CHAIN IS MUCH MORE THAN A TECHNOLOGY

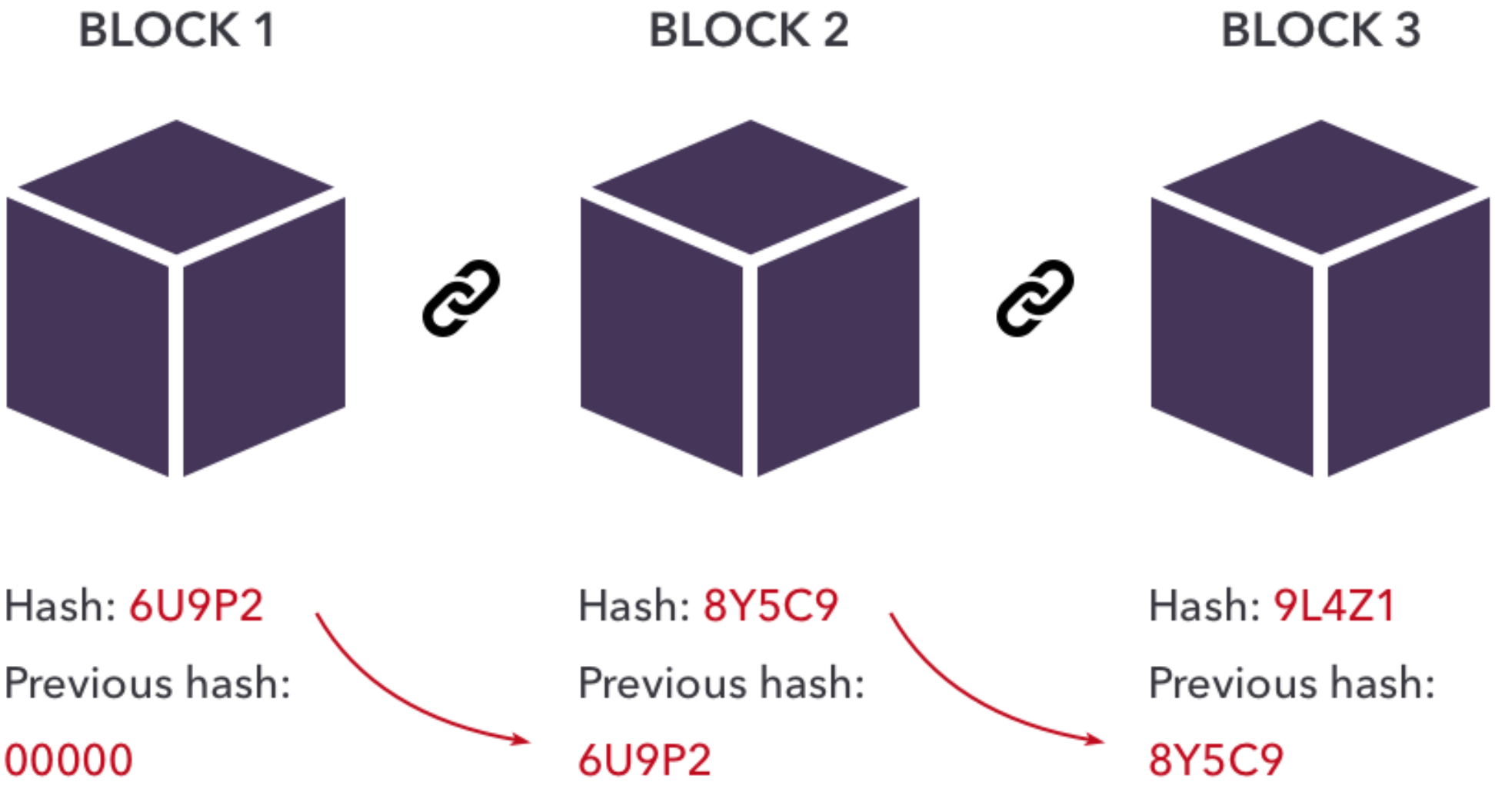
It is also a culture and community that is passionate about creating a more equitable world through decentralization.

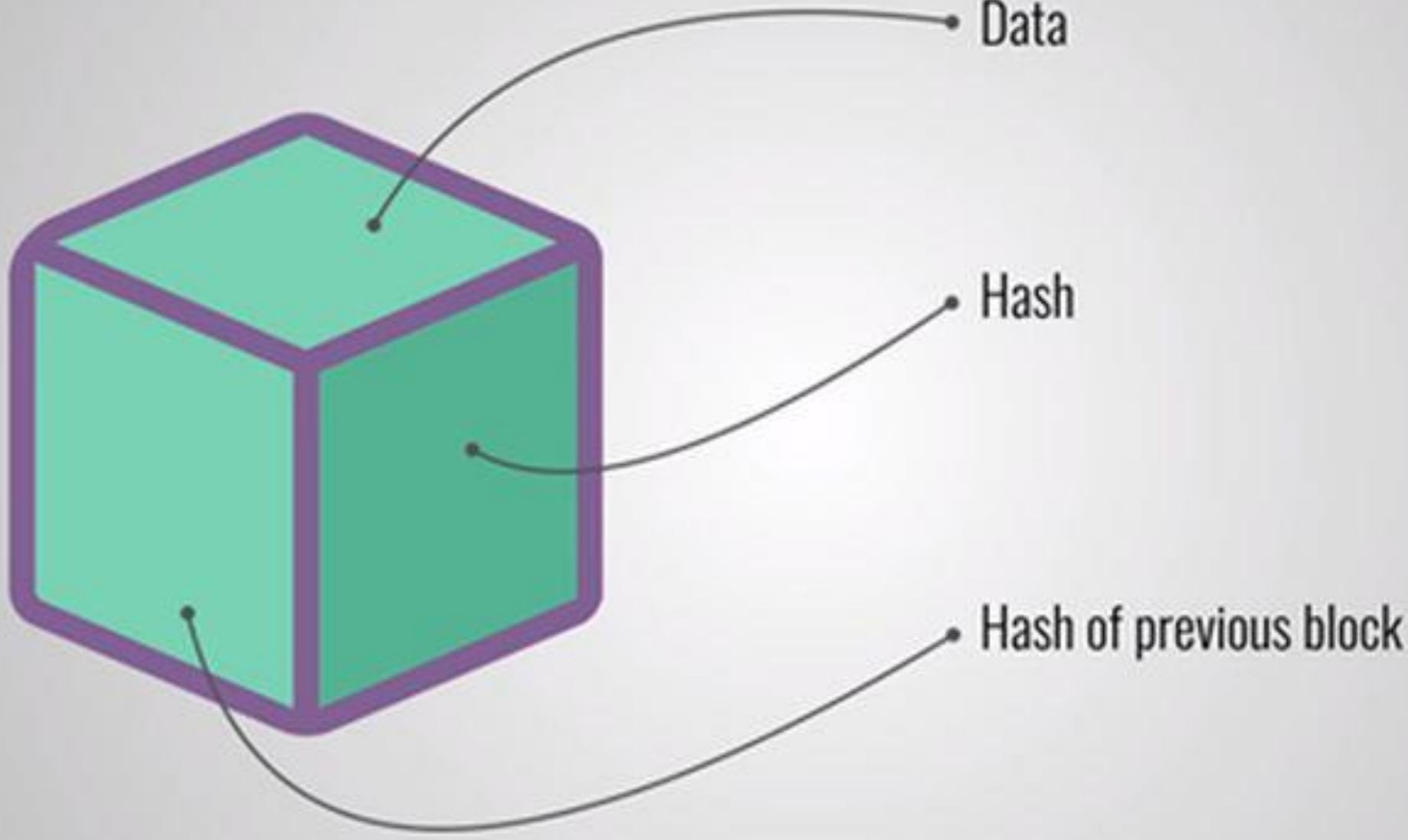




- **Blockchain is a technology simply a distributed secure database, this database consists of string of blocks**

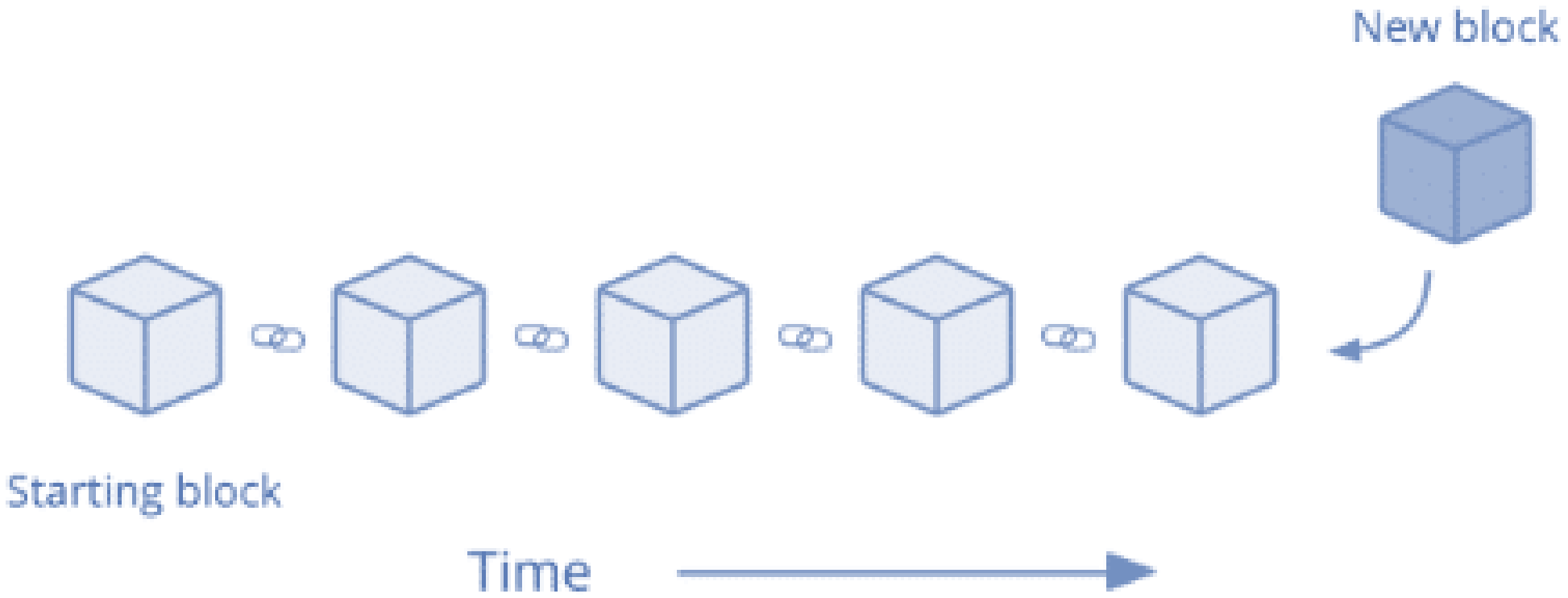
- **Each one recorded of data that's been encrypted and given a unique identifier called the hash**



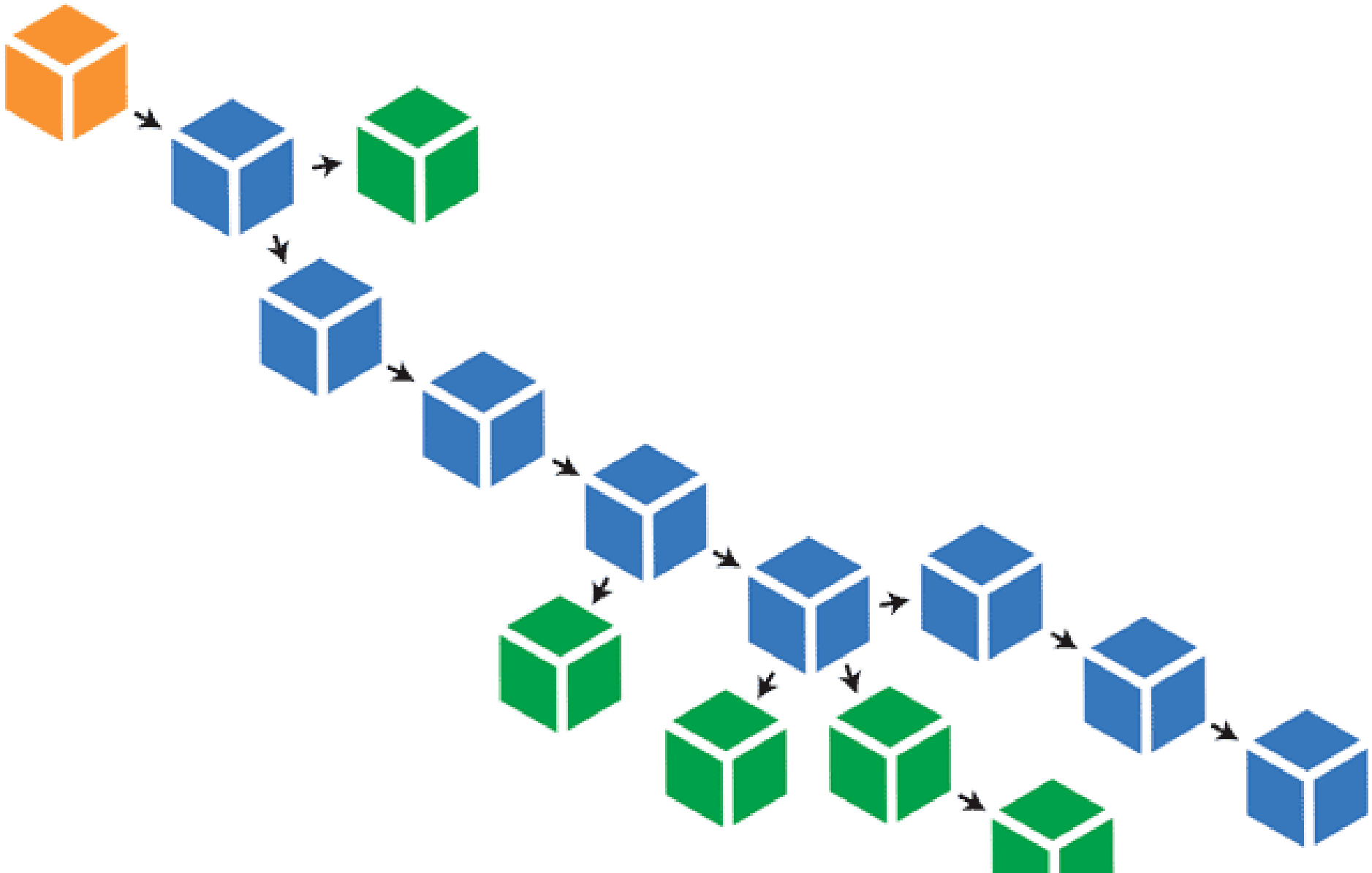

Data
Hash
Hash of previous block

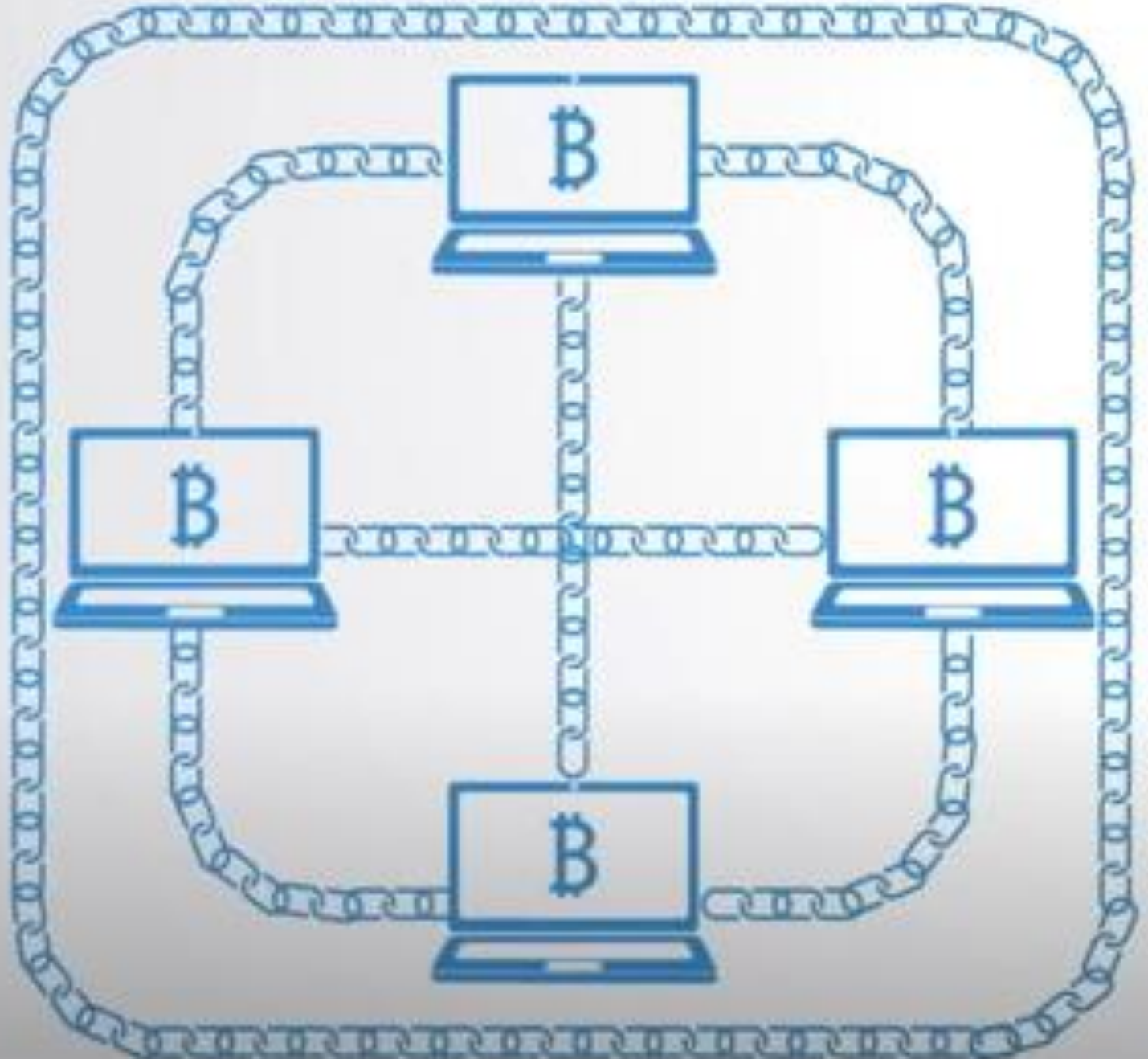
Mining computers on the network validate transactions & add them to block.

- They are building and then broadcast the completed block to other nodes

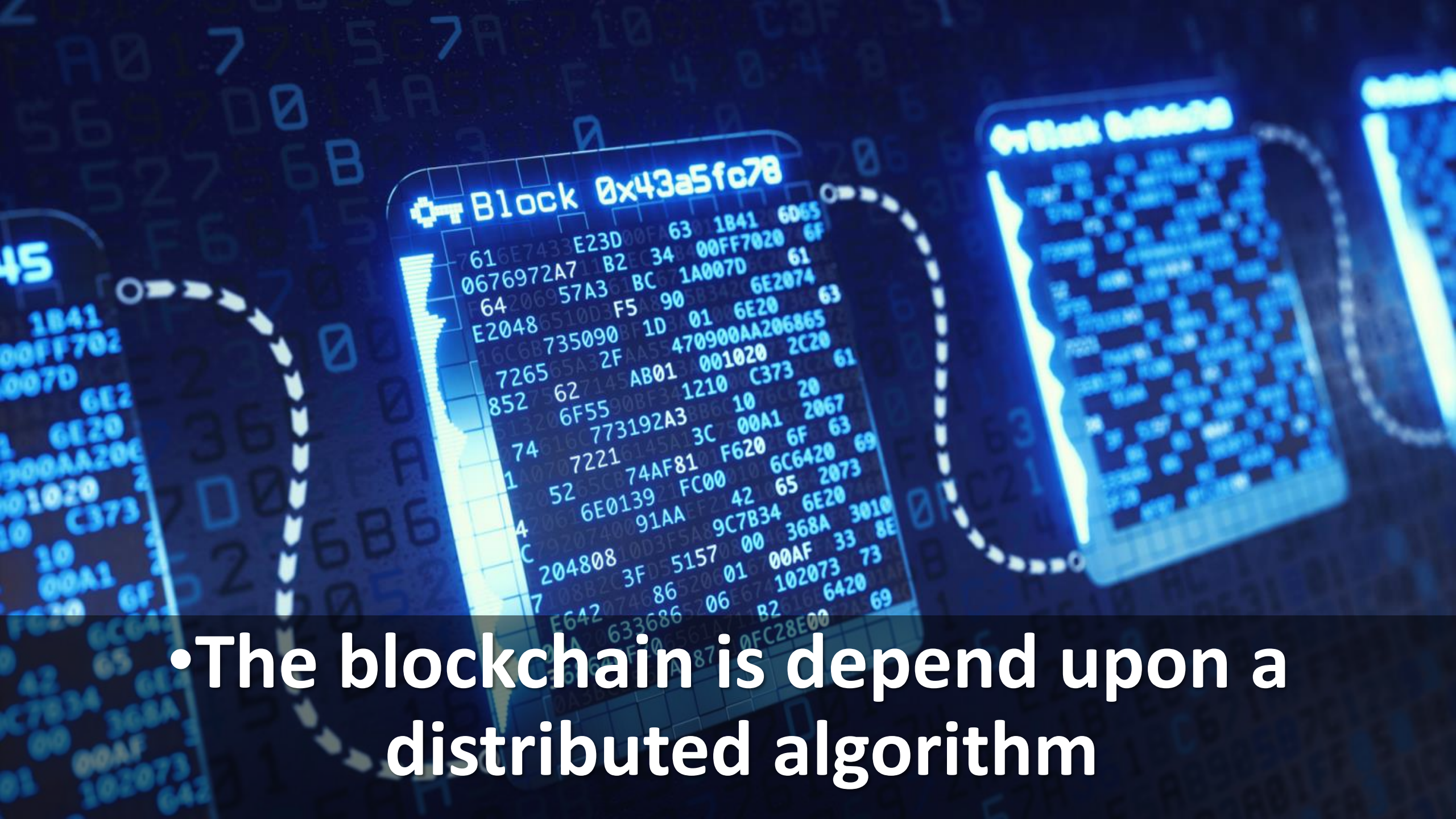


- So that all have a copy of the database



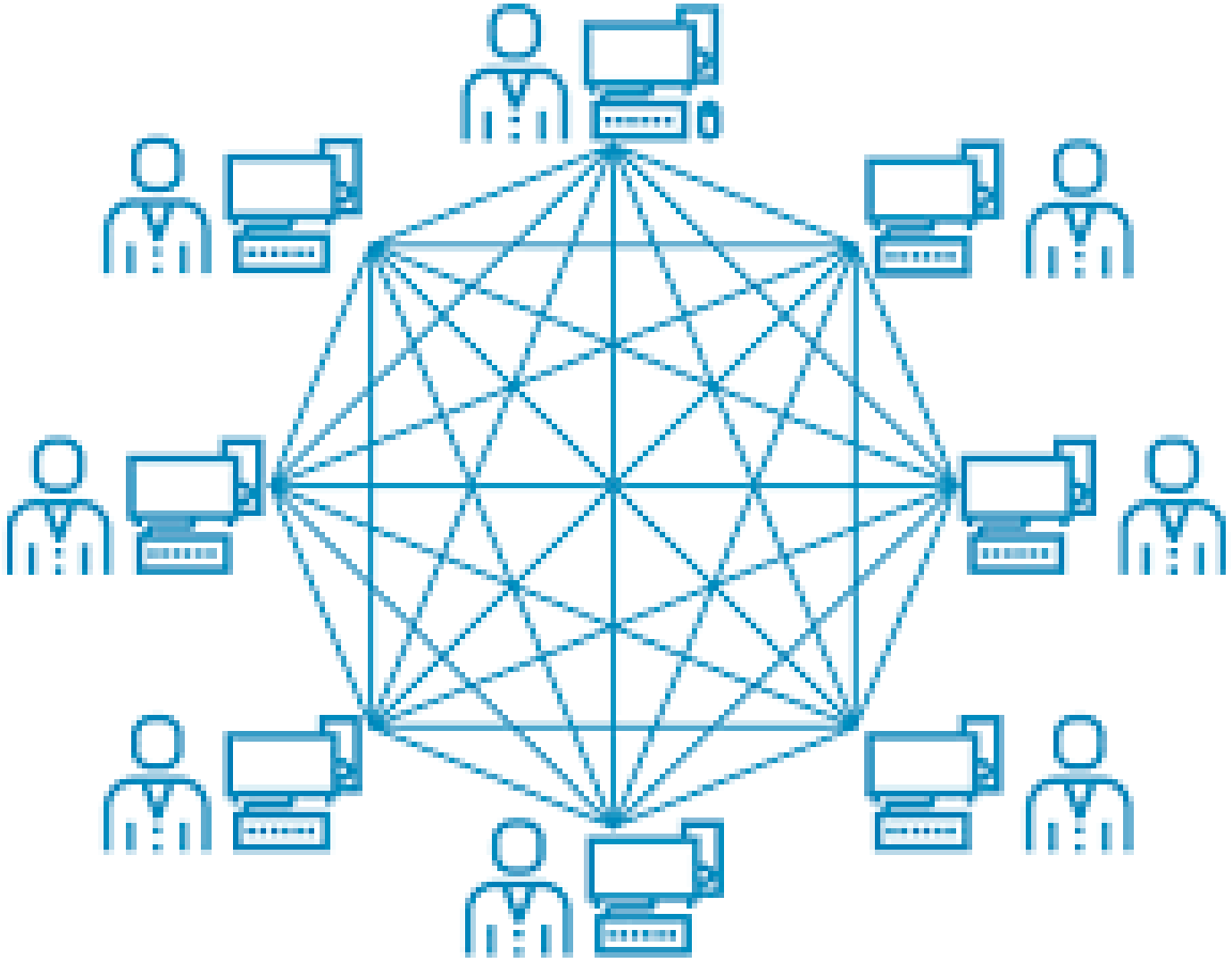


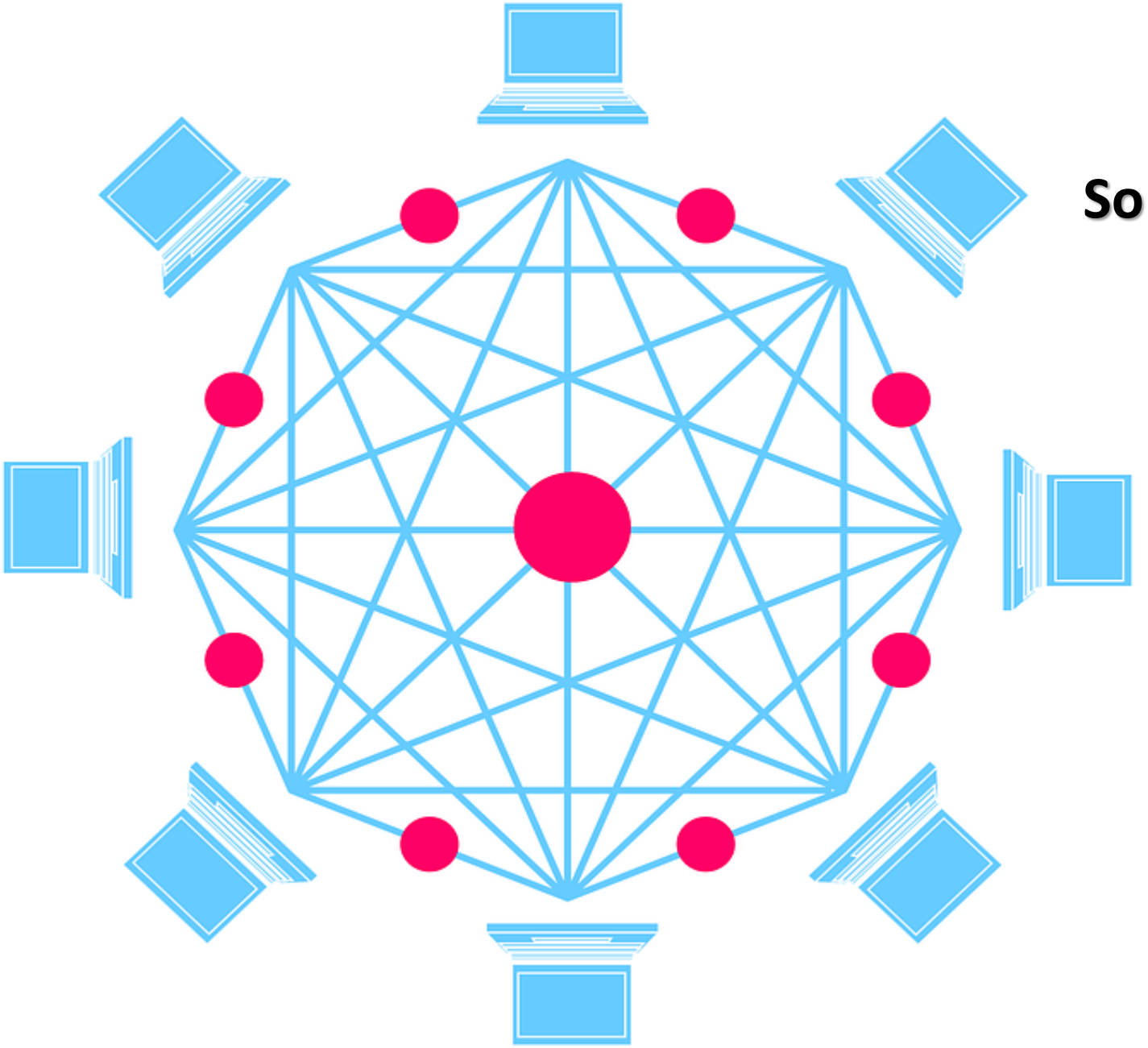
Since There is no centralized component to verify the alterations to the database



- The blockchain is depend upon a distributed algorithm

In order to make an entry onto the blockchain database, all the computers have to agree about his statement





So that no one computer can make an alteration without the permission of others

Once completed block is added to the blockchain as a permanent


To understand this you got to understand how a ledger works

Ledger contains money going in and money going out, like debits and credits

How Bitcoin works?

ACCOUNT: Cash				
Date	Description	Increase	Decrease	Balance
Jan. 1, 20X3	Balance forward			$ 50,000
Jan. 2, 20X3	Collected receivable	$ 10,000		60,000
Jan. 3, 20X3	Cash sale	5,000		65,000

Ledger

It changes, everyday.

How Bitcoin works?

ACCOUNT: Cash

Date	Description	Increase	Decrease	Balance
Jan. 1, 20X3	Balance forward			$ 50,000
Jan. 2, 20X3	Collected receivable	$ 10,000		60,000
Jan. 3, 20X3	Cash sale	5,000		65,000
Jan. 5, 20X3	Paid rent		$ 7,000	58,000
Jan. 7, 20X3	Paid salary		3,000	55,000
Jan. 8, 20X3	Cash sale	4,000		59,000

Ledger

And your balance.

So in centralized service like PAYPAL

WHOSE LEDGER DO WE TRUST


PayPal
WELL PAYPAL IS A TRUSTED AUTHORITY

THEY ARE THE ONE WHO KEEPS TRACK OF YOUR MONEY

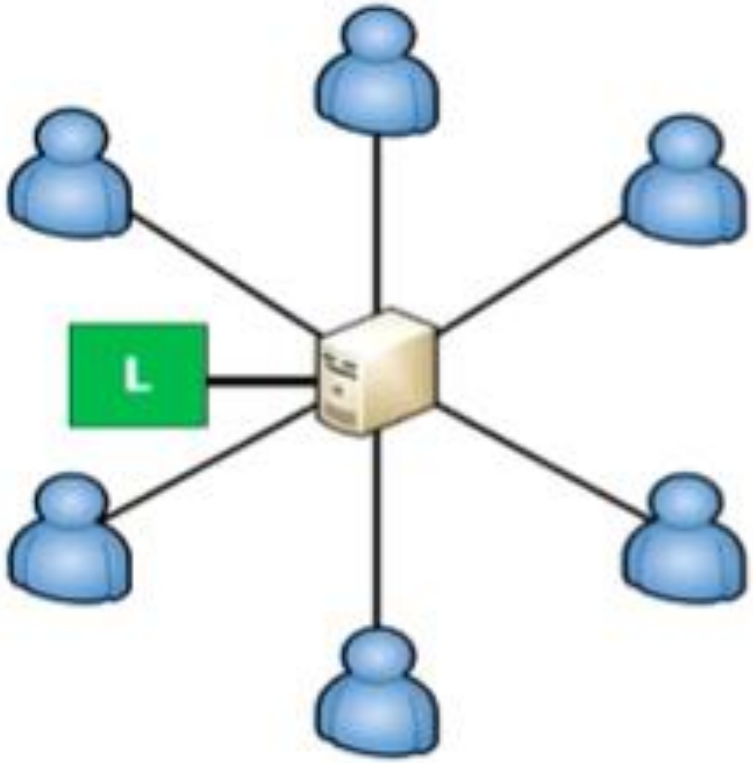
They are the one who tell you how much balance you have


But in DECENTRALIZED
PAYMENT networks there is

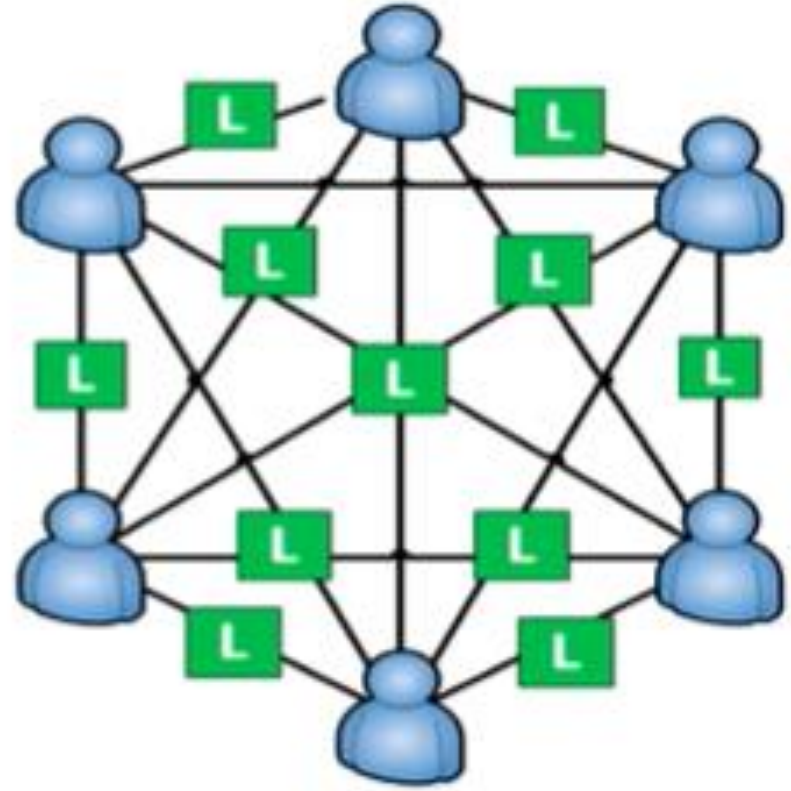

6000 COMPUTERS
AROUND THE WORLD

All trying to update the ledger.

How to update ledger?



Central Ledger



Decentralized Ledger

THAT'S THE INNOVATION HERE

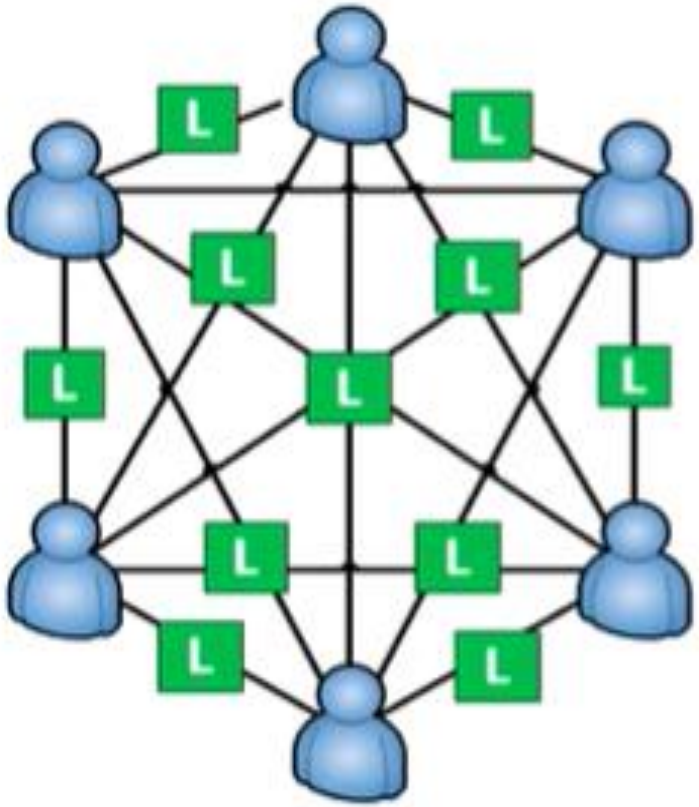

That is where the
BLOCKCHAIN comes in


Here is how it works


Every 10 MINUTES the
BLOCKCHAIN gets updated

Get updated with new block of transactions

Blockchain



- 10 minutes new update
- Miners compete for right to update
- More processing power, more chance to win

Process to decide who updates ledger

To figure out which computer updates the BLOCKCHAIN there are all other computers

CALLED MINERS


HOW DO I GET
MINING CONTRACTS?

Google

mining contract

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About 204,000,000 results (0.49 seconds)

Mining contracts

A **mining contract** is an agreement where a customer pays for the output of **mining** power from hardware placed in remote data centers. ... It's like investing in **mining**.
Jan 16, 2019

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How Do Mining Contracts Work? | The Beginner's Guide ...

Feedback

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How do Bitcoin mining contracts work?

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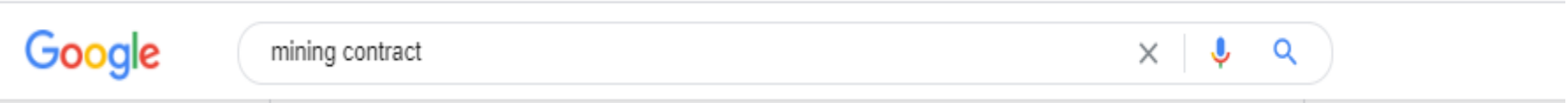

How long does it take to mine 1 Bitcoin?

Is mining cheap legit?

Feedback

eiti.org › sites › default › files › documents › mining-c... PDF

How to Read Mining Contracts

MINING CONTRACTS. How to read and understand them ? ... The following example is from Li beria's Mines and Minerals Law 2000. Later laws have.

eiti.org › document › mining-contract-how-to-read-und...

Mining Contract: how to read and understand them | Extractive ...

Drawing from several of the **contracts** on ResourceContracts.org, "**Mining** ... to highlight strong **contract** clauses and explore how others could be improved.

www.genesis-mining.com › pricing

Bitcoin & Cryptocurrency Mining Contracts | Genesis Mining

Mine the cryptocurrencies Bitcoin, Dash, Litecoin, Zcash, Ethereum, & more based on the sha256, x11 & scypt ...

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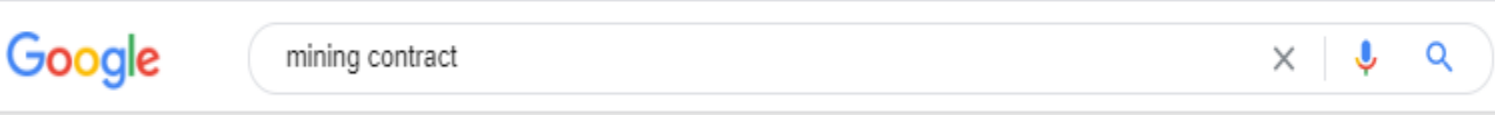
www.cdc.gov › niosh › mining › researchprogram › co...

Mining Contracts - NIOSH - CDC

Left click the tabs to view current or completed **contracts**. Current **contracts** only. Title, Short Description, **Contractor**, **Contract**/IAG #, Topic Area(s), Completed ...

GOOGLE FIRST PAGE RESULTS



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9 Profitable BitCoin Cloud Mining Contracts And Services

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Contract Mining - Partners in Performance

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www.buybitcoinworldwide.com › mining › cloud-mining

3 Best Bitcoin Cloud Mining Contract Reviews (2020 Updated)

Jun 26, 2020 - Like the heading says, most cloud **mining contracts** are scams. Why? Because it's easy for companies to take peoples' money, and then not pay ...

mining.bitcoin.com

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Start mining immediately with our cloud **mining contracts**! 100% guaranteed uptime. Hardware Mining. Start mining with your own ASIC hardware and benefit from ...

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Contract Mining versus Owner Mining – The Way Forward ...

By contracting out one or more of their **mining** operations, the **mining** companies can concentrate on their core businesses. This paper reviews **contract mining** ...

by RS Suglo - 2010 - Cited by 3 - Related articles

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MINING
CONTRACTS

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- [ ] Peercoin (91)
- [ ] Devcoin (87)
- [ ] Dogecoin (84)
- [ ] Feathercoin (34)
- [ ] Digitalcoin (19)

See all

Speed (GH/s)

- [ ] Less than 1 GH/s (34)
- [ ] More than 500 GH/s (180)
- [ ] Not Specified (501)

See all

Contract Length

Condition

- [ ] Not Specified (817)

See all

Price

- [ ] Under $4.00
- [ ] $4.00 to $12.00
- [ ] Over $12.00

$ [ ] to $ [ ] →

Mining Contract 1 Hour (bitcoin) Processing Speed (TH/s) 0.001 BTC

$14.79
or Best Offer
+$0.01 shipping
2,019 sold

Top Rated Seller
From United States

Mining Contract 1 Hour Get 0.01 ETH in Hour not Days Guaranteed

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or Best Offer
+$0.01 shipping

Top Rated Seller
From United States

MINING CONTRACT

1 Day CLOUD MINING Contract Antminer Rental S9 13.5TH SHA256 BTC Bitcoin Hashing

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Was: ~~$5.00~~ **40% off**
or Best Offer
Free International Shipping
315 sold

Top Rated Seller
From United States

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< Virtual Currency
Mining Contracts
Miners
Everything Else
Specialty Services
Consumer Electronics

Compatible Currency

Speed (GH/s)

Contract Length

Condition

- Not Specified (304)

See all

Price

- Under $10.00
- $10.00 to $25.00
- Over $25.00

$ [ ] to $ [ ] →

Buying Format

- All Listings (304)
- Accepts Offers (161)
- Auction (1)

All Listings | Accepts Offers | Auction | Buy It Now | Condition | Delivery Options | Best Match

304 results for bitcoin mining contr... | Save this search

Price

Under $10.00 | $10.00 to $25.00 | Over $25.00

Mining Contract 1 Hour (bitcoin) Processing Speed (TH/s) 0.001 BTC

$14.79
or Best Offer
+$0.01 shipping
2,019 sold

Top Rated Seller
From United States

1 Day CLOUD MINING Contract Antminer Rental S9 13.5TH SHA256 BTC Bitcoin Hashing

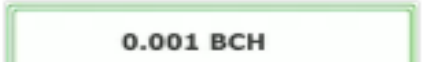
$3.00
Was: ~~$5.00~~ 40% off
or Best Offer
Free International Shipping
315 sold

Top Rated Seller
From United States

Bitcoin mining contract solo - 2 hours - 18 th/s-up to 65000 $gains!

$1.86
Buy It Now
+$0.01 shipping
139 sold

From France



Bitcoin-Cash(0.001 BCH) Mining Contract 1 Hour Get 0.001 BCH Guaranteed

BITCOIN MINING CONTRACT

ebay Shop by category

cloud mining contract

All Categories

Search

Include description

Categories

All

Coins & Paper Money

Virtual Currency Mining Contracts

More

Compatible Currency

Speed (GH/s)

Contract Length

Condition

New (1)

Not Specified (126)

See all

Price

Under $35.00

$35.00 to $75.00

Over $75.00

$ to $

Buying Format

All Listings (127)

Accepts Offers (83)

Auction

Buy It Now (127)

See all

All Listings | Accepts Offers | Auction | Buy It Now | Condition | Delivery Options | Best Match

127 results for cloud mining contract

Save this search

Price

Under $35.00 | $35.00 to $75.00 | Over $75.00

CLOUD MINING Contract x10 S9 Antminer Rental 135 TH BITCOIN Mining 1 Day Hashing

$29.00
Was: $50.00 42% off
or Best Offer
Free International Shipping
64 sold

Top Rated Seller
From United States

CLOUD MINING Contract Antminer Rental Z11 Zcash 24 Hour 135 Kh/ Equihash ZEC

$14.24
Was: $16.00 11% off
or Best Offer
Free International Shipping
228 sold

Top Rated Seller
From United States

4 Hour Cloud Mining Contract Bitmain AntMiner Rental S9 13.5TH SHA-256 BITCOIN

$1.50
Was: $4.00 63% off
or Best Offer
Free International Shipping
84 sold

Top Rated Seller
From United States

1 Week CLOUD MINING CONTRACT Antminer Rental S9 13.5TH SHA-256 BITCOIN Hashing

$21.50
or Best Offer

Top Rated Seller
From United States

CLOUD MINING CONTRACT

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Related: crypto currency mining contract · cryptocurrency mining contract · bitcoin mining contract · crypto mining rig · crypto miner · cryptocurrency

Include description

Categories

All
< Coins & Paper Money
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Mining Contracts
Miners
Everything Else
Collectibles

Compatible Currency

- Bitcoin (20)
- Ethereum (61)
- Litecoin (19)
- Dogecoin (10)
- Freicoin (4)
- Devcoin (3)
- Digitalcoin (3)
- Feathercoin (3)

See all

Speed (GH/s)

Contract Length

Condition

- Not Specified (262)

See all

Price

- Under $3.00
- $3.00 to $5.00
- Over $5.00

All Listings | Accepts Offers | Auction | Buy It Now | Condition | Delivery Options | Best Match

262 results for crypto mining contr… Save this search

Price

Under $3.00 | $3.00 to $5.00 | Over $5.00

CLOUD MINING Contract x3 S9 Antminer Rental Bitcoin HASHING 40.5 Th/s Crypto BTC

$9.00
Was: $15.00 40% off
or Best Offer
Free International Shipping
119 sold

Top Rated Seller
From United States

100 RavenCoin (RVN) CRYPTO MINING-CONTRACT (100 RVN)

$3.89
or Best Offer
+$0.01 shipping

Top Rated Seller
From New Zealand

0.05 Ethereum(ETH) CRYPTO MINING-CONTRACT (0.05 ETH)

$35.99
or Best Offer
+$0.01 shipping
57 sold

Top Rated Seller
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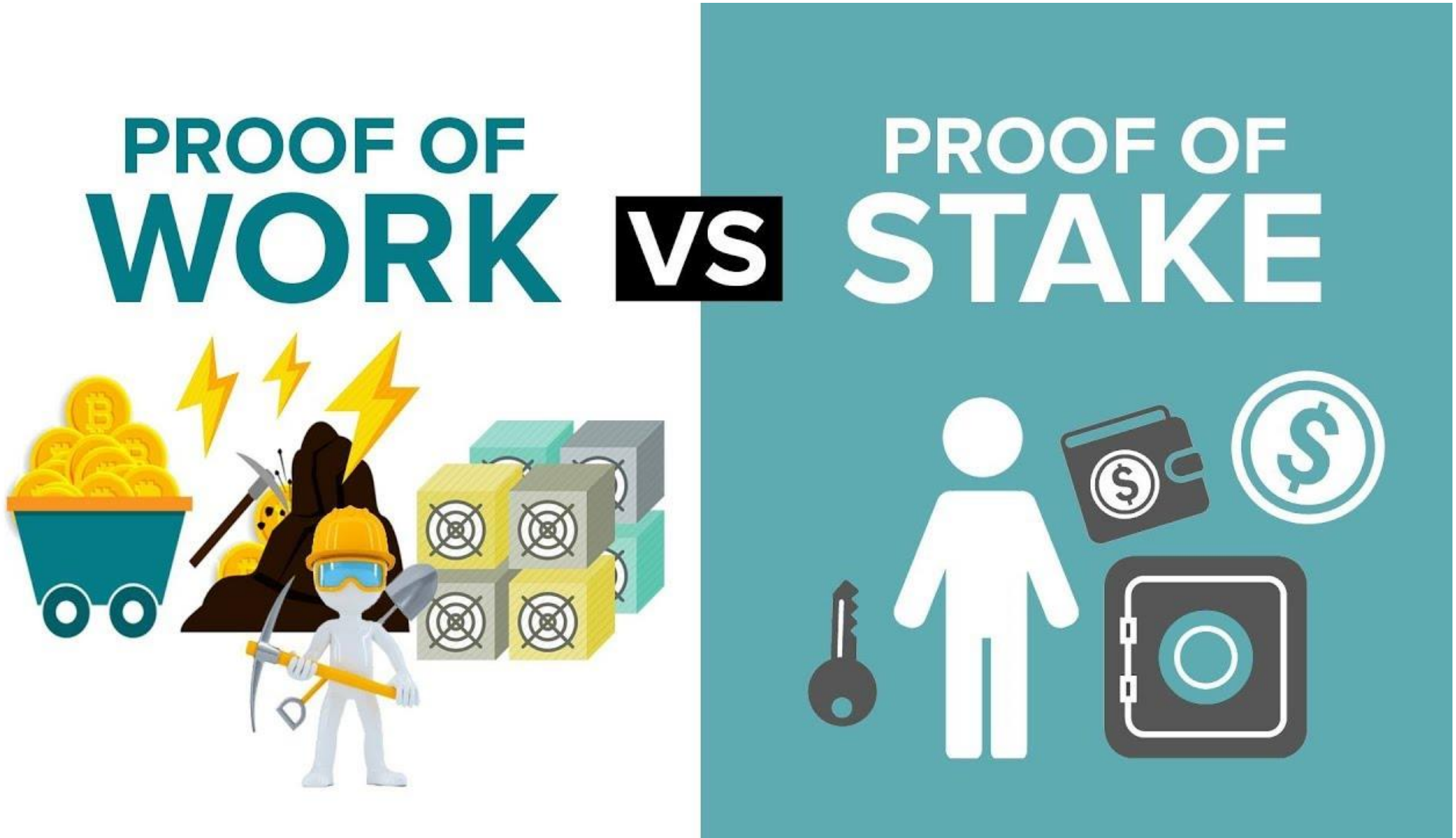
CRYPTO MINING CONTRACT

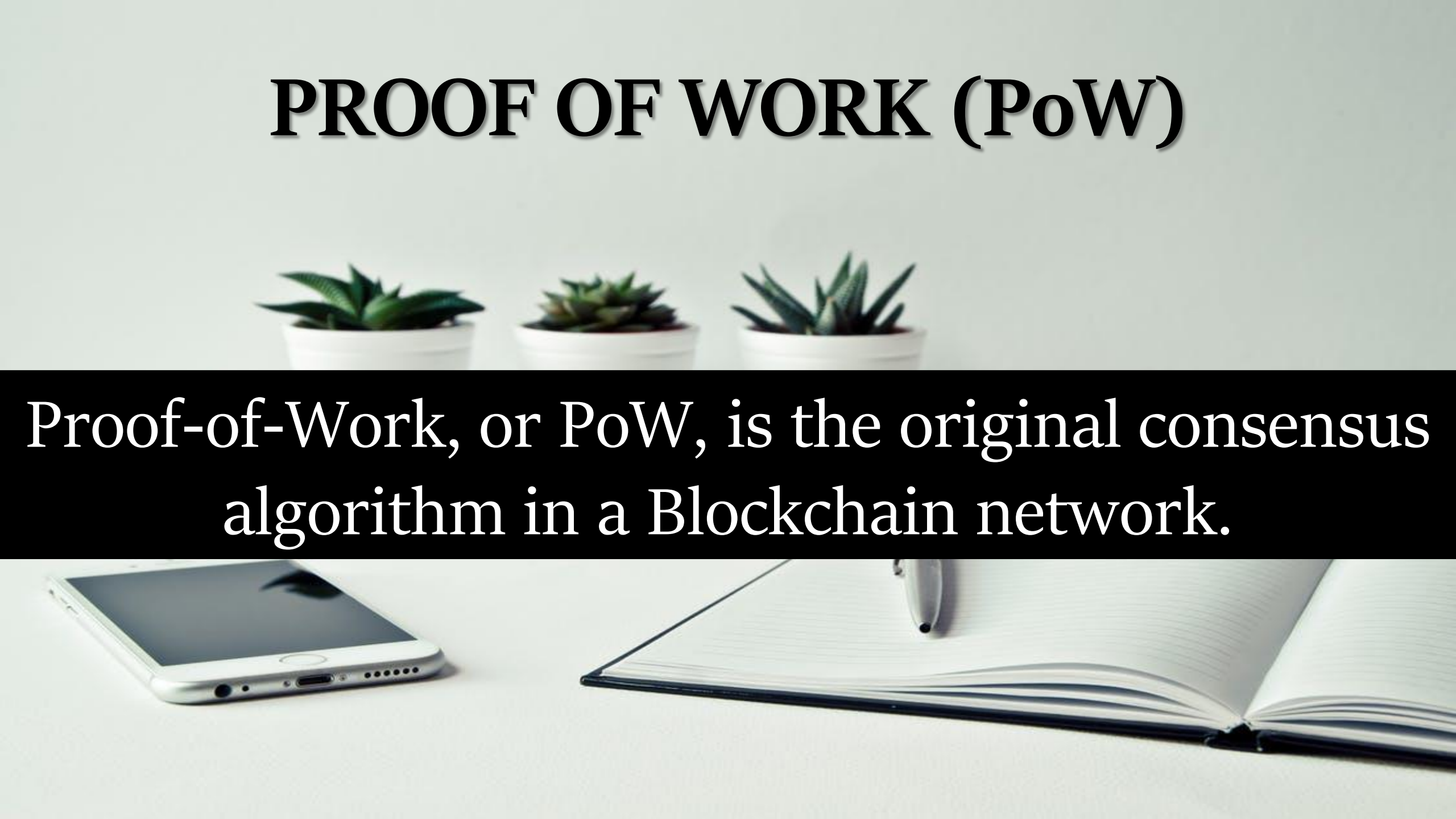
WHAT IS MINING?

Mining is a process in which transactions for various forms of cryptocurrency are verified and added to the blockchain digital ledger.

MINING & POW AND POS



PROOF OF WORK (PoW)

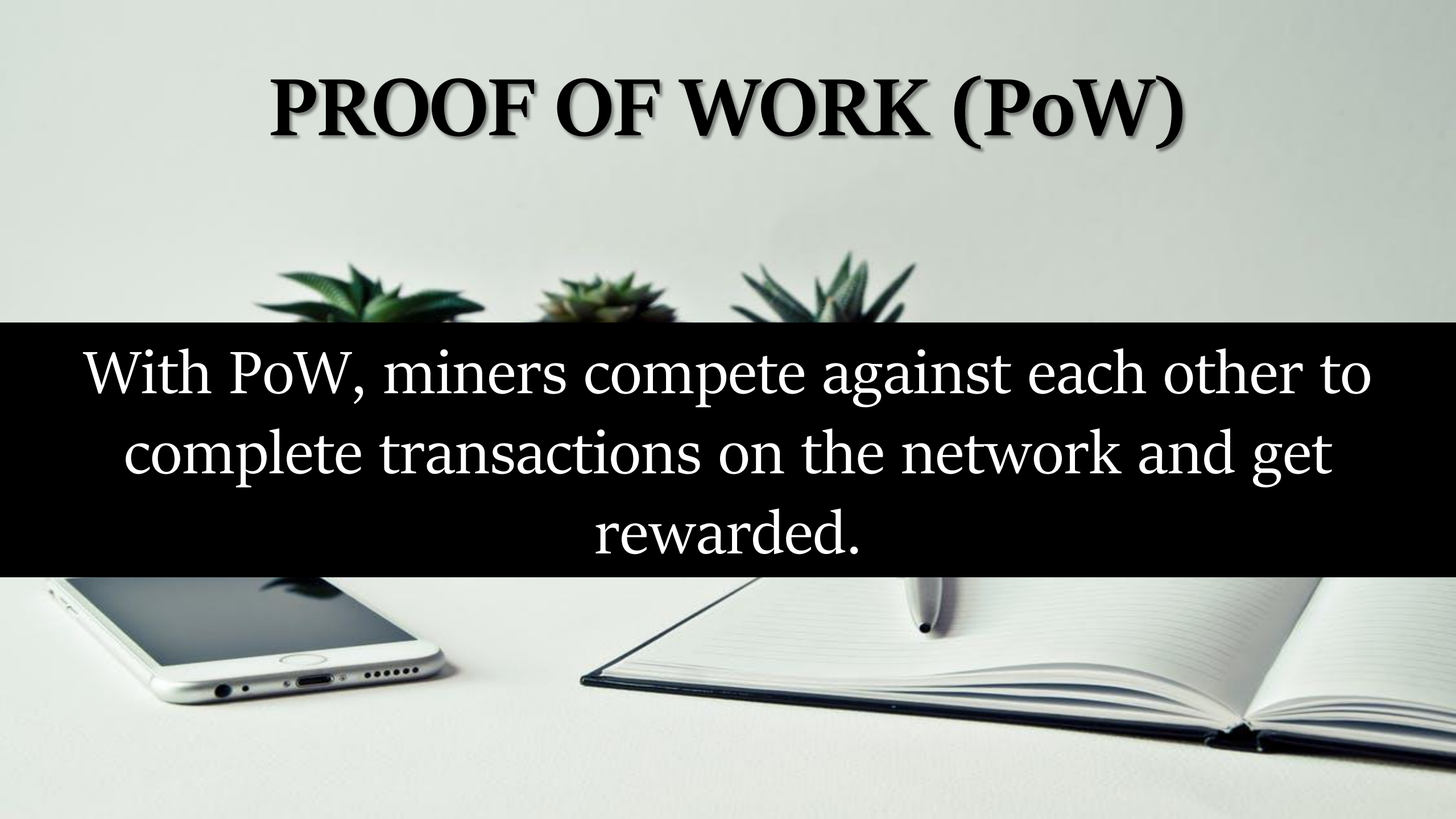


Proof-of-Work, or PoW, is the original consensus algorithm in a Blockchain network.

PROOF OF WORK (PoW)

In Blockchain, this algorithm is used to confirm transactions and produce new blocks to the chain.

PROOF OF WORK (PoW)



With PoW, miners compete against each other to complete transactions on the network and get rewarded.

PROOF OF STAKE (PoS)

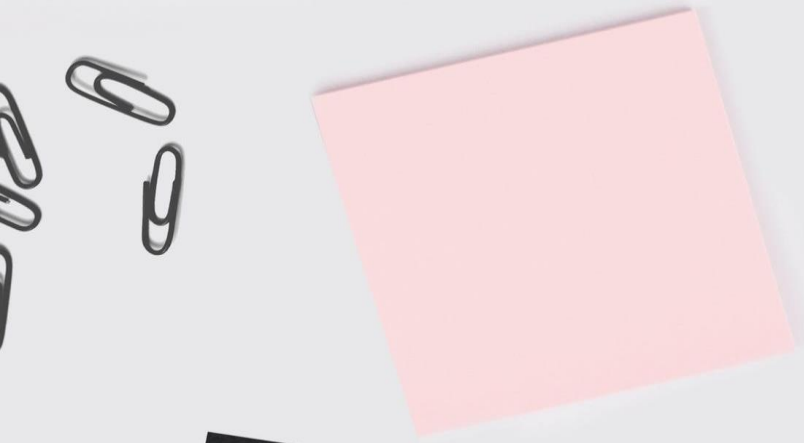
Alternative to PoW

PROOF OF STAKE (PoS)

Proof of Stake (PoS) gives mining power based on the percentage of coins held by a miner.

PROOF OF STAKE (PoS)

PoS is seen as less risky in terms of the potential for miners to attack the network.



WHAT IS WEB MINING?

Users can join the mining process and get rewarded solely with the help of their PC/ Laptop.

MINING COMMUNITY/ POOL

A **Mining pool** is the pooling of resources by **miners**, who share their processing power over a network, to split the reward equally, according to the amount of work they contributed to the probability of finding a block.

DIFFERENT METHODS OF MINING CRYPTOCURRENCIES


STRATEGY 18/100
AFFILIATE
WEB MINING

THINGS REQUIRED

- E-WALLET/ CRYPTO WALLER
- MINING CONTRACT
- MINING COMPATIBLE WEBSITE
- CPUs (CENTRAL PROCESSING UNIT)
- PUBLISHER ACCOUNT WITH AFFILIATE PROGRAM
- AFFILIATE PLATFORM
- PAYPAL/ BANK ACCOUNT
- CONSENT OF THE MINING PC/ LAPTOP
- REGISTRATION FEE
- PC/ LAPTOP/ INTERNET POWER, ETC.


YOUR WEBSITE
TRAFFIC
AFFILIATE PROGRAM
WEB MINING

Your Website Traffic Is Monetizing With Mining As Well.

MONETIZING WEBSITE TRAFFIC FOR MINING CONTRACT

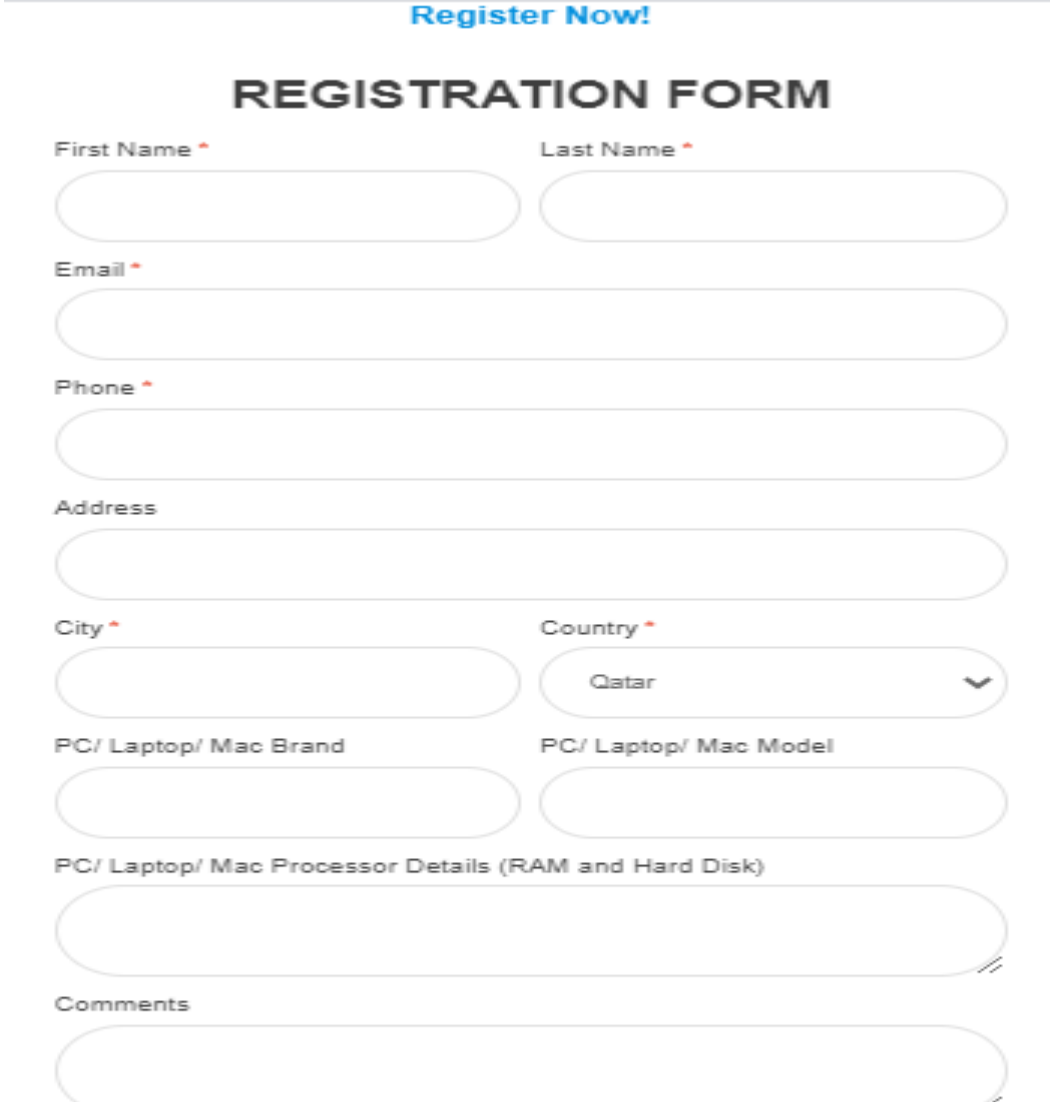
CONVERT YOUR PC/ LAPTOP/ MAC INTO AN EARNING MACHINE!


HOW WILL
VISITIORS
CONNECT TO A
MINING WEBSITE?

STEP 01:

POP-UP MESSAGE ASKING THE VISITOR IF HE/SHE IS INTERESTED TO EARN

STEP 02:



REGISTRATION FORM FOR MINING

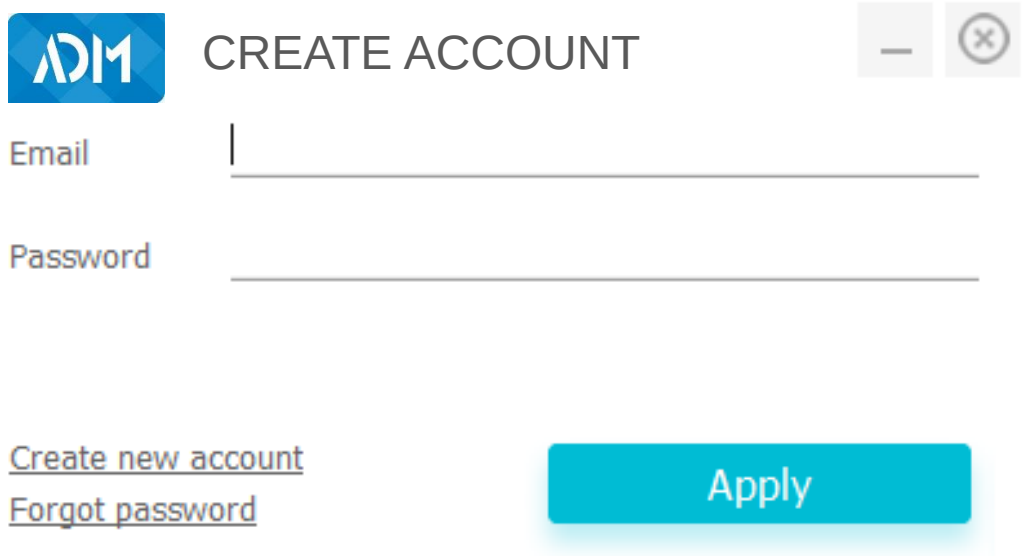
STEP 03:

CONFIRMATION OF THE DEVICE

STEP 04:

DEVICE CONFIGURATION AND SCANNING OF THE PROCESSOR AND NET SPEED

STEP 05:



CREATE E-WALLET ACCOUNT FOR COLLECTING REWARDS. WALLET IDENTIFIER ISSUED AFTER CREATING THE ACCOUNT

The device is now ready for mining.

HOW TO GET THE MINING CONTRACT TO EARN THIS REVENUE?

https://webmining.website/

Convert your PC/ Laptop/ Mac into an Earning machine!

Search for...

AFFILIATE WEB MINING

HOME | WHY MINING | ABOUT THE PROJECT | MINING CONTRACT | FAQ | CONTACT US

WE INVITE YOU TO THE POWER OF FUTURE!

BE A PART OF OUR BLOCKCHAIN PROJECT.

Reserve Your Mining Contract Now!

REGISTER NOW

Get your fully customized web mining contract and become a miner with your PC/ Laptop/ Mac in the era of the digital revolution.

REGISTER NOW

AWMC WEB MINING

AWMC allows mining to be within everyone's reach.

With a mission to run efficient blockchain projects, AWMC combines all its fundamental aspects, starting from building highly

SPECIAL OFFER

GET WEB MINING CONTRACTS AT A SPECIAL PRICE!

ENTRY LEVEL WEB MINING CONTRACT	PREMIUM WEB MINING CONTRACT	PREMIUM PRO WEB MINING CONTRACT
BEFORE: USD 99	BEFORE: USD 399	BEFORE: USD 999
NOW: FREE	NOW: USD 99	NOW: USD 399

VALID UNTIL 31ST OCTOBER, 2020 (SATURDAY)

*Note: cannot be redeemed with any other offers


HURRY UP AND GRAB THE
OPPORTUNITY!

INTERNET BUSINESS IDEA 8/100

CONNECTING YOUR PC/ LAPTOP TO A WEBSITE FOR MINING


Mining Process can take place from PC/ laptop by connecting it to a website that supports it

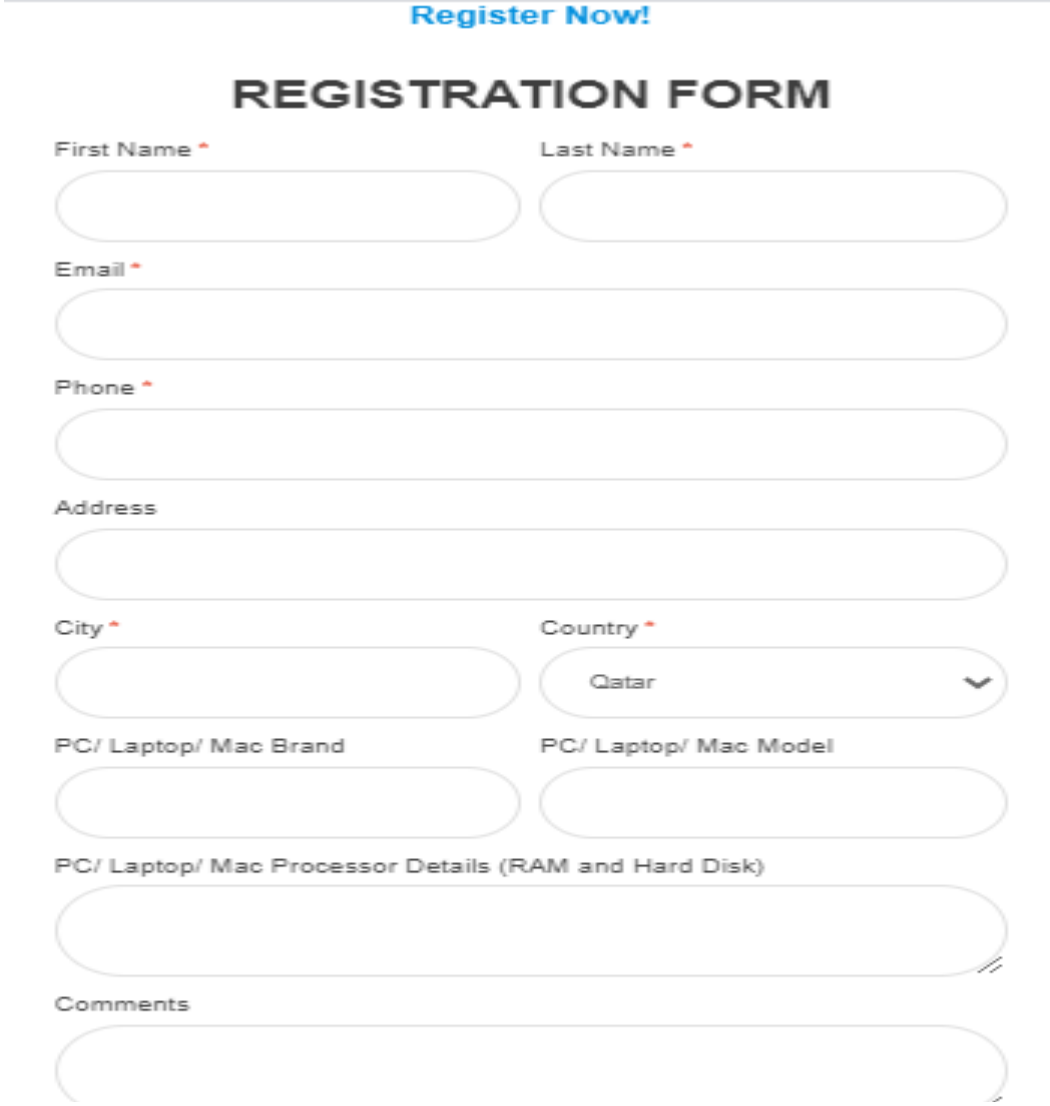
STEPS FOR MINING

WHEN YOU VISIT A WEBSITE THAT IS CONNECTED TO OUR MINING PROJECT

STEP 01:

POP-UP MESSAGE ASKING THE VISITOR IF HE/SHE IS INTERESTED TO EARN

STEP 02:



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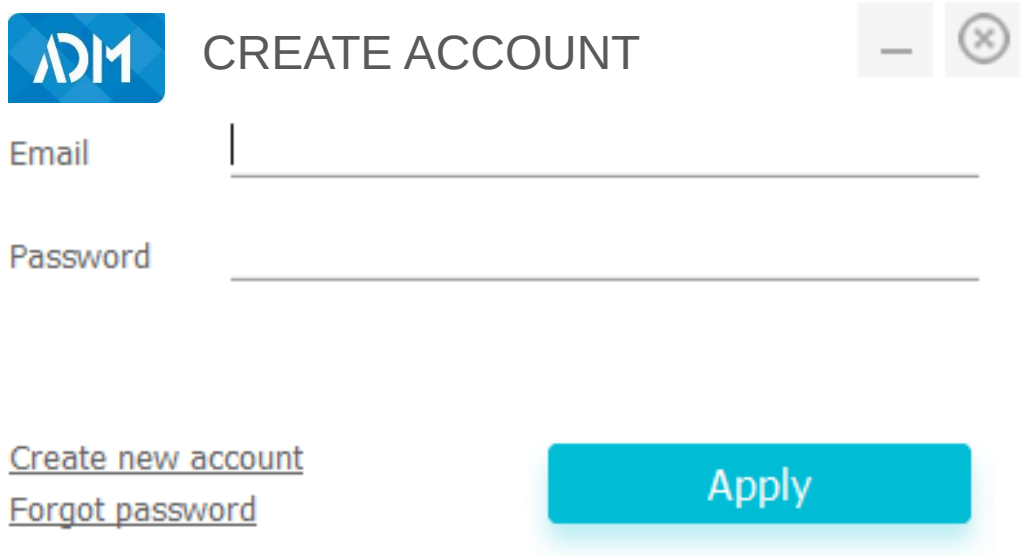


CREATE E-WALLET ACCOUNT FOR COLLECTING REWARDS. WALLET IDENTIFIER ISSUED AFTER CREATING THE ACCOUNT

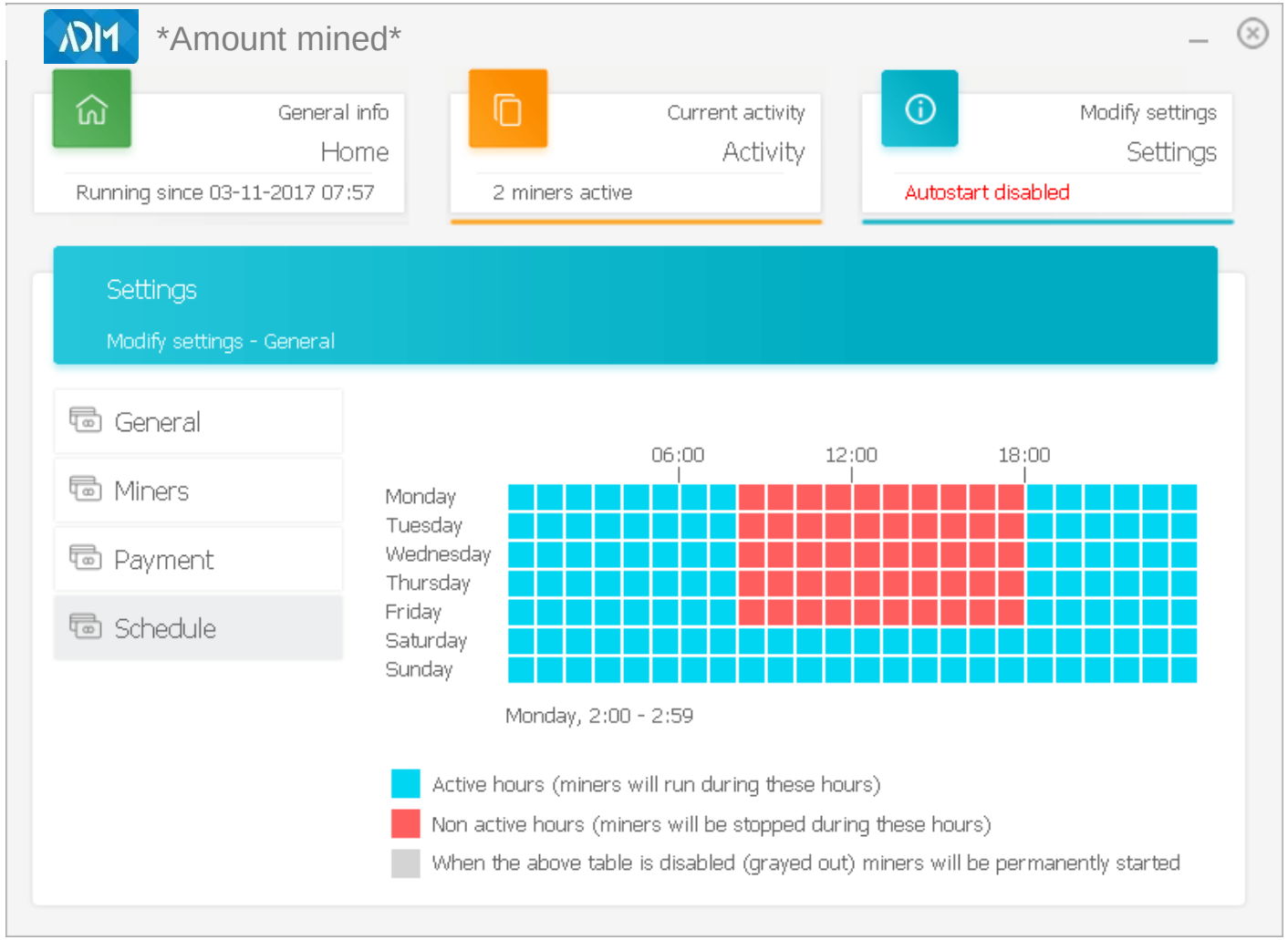
The device is now ready for mining.


MINING
PROCESS
AFTER REGISTRATION IS COMPLETE

Mining process will take place as long as the device is running and is connected to the net.

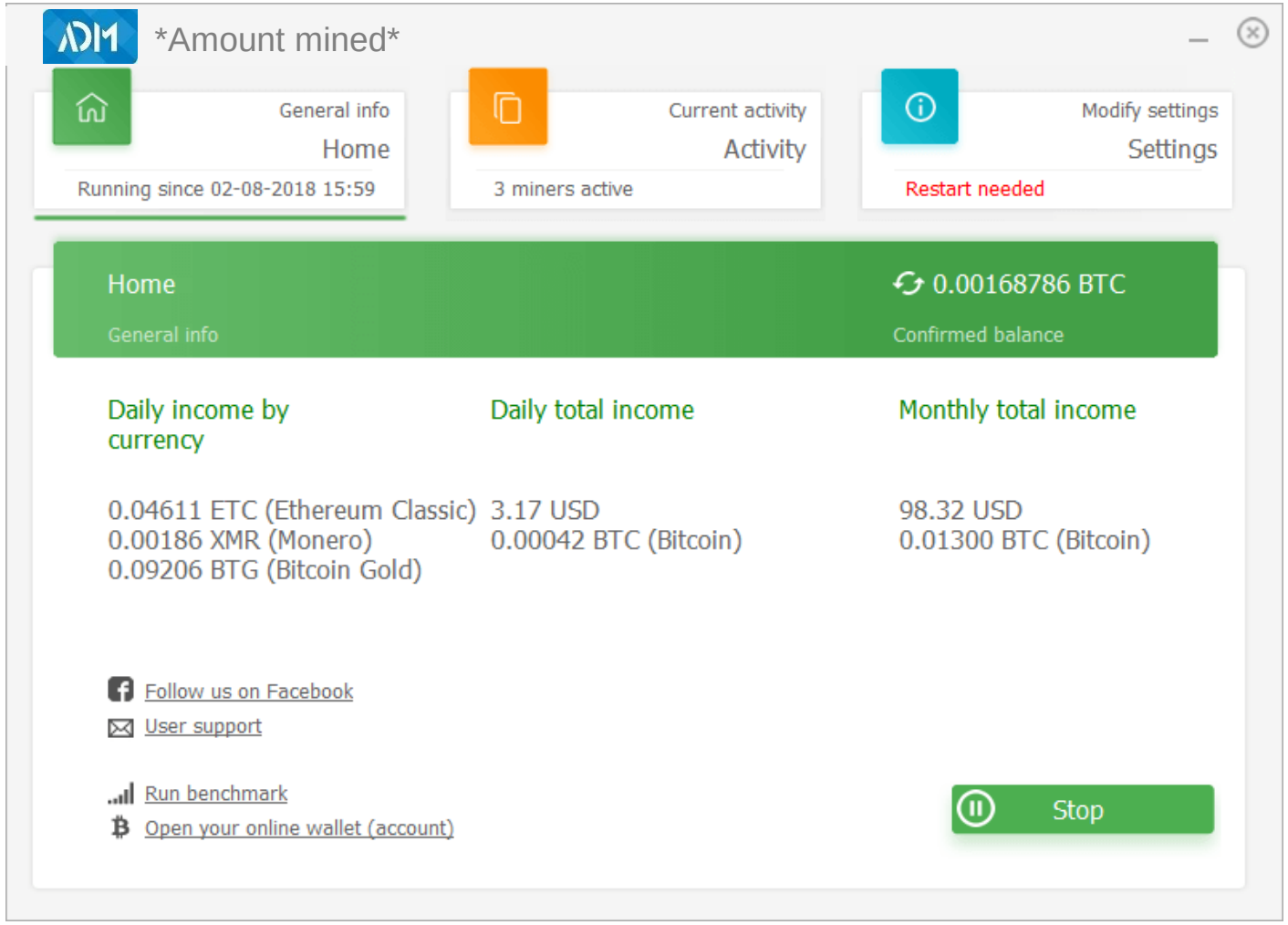
Depending on the usage of the device, the percentage of the processor used for mining will be shown in the system.

SYSTEM USAGE:



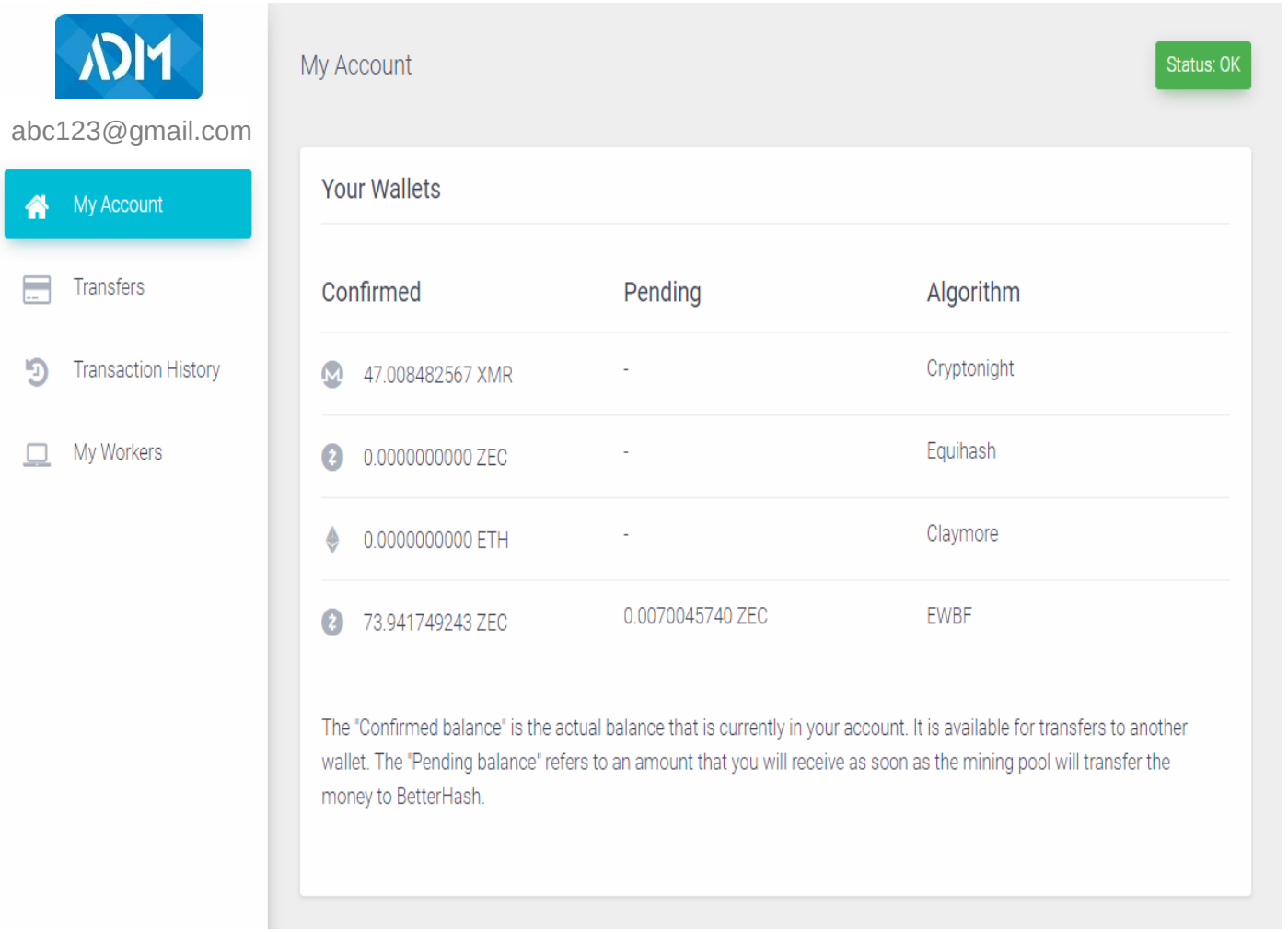
FEATURE TO SELECT THE CONVENIENT DAYS AND TIMINGS FOR MINING PROCESS

DAILY REPORT:



FEATURE TO CHECK THE PROGRESS REGULARLY

ACCOUNT:



CHECK THE WALLET STATUS


When the mining ends, the blockchain network, the company, the website owner, and the mining laptop owner gets their share of mining rewards.

INTERNET BUSINESS IDEA
9/100

AIRDROPS

STRATEGY 19/100

Participate in the AIRDROPS opportunity in the various blockchain projects

WHAT ARE AIRDROPS?

An airdrop for a cryptocurrency is a procedure of distributing new tokens/coins by awarding them in a certain proportion to existing holders of a particular blockchain currency, such as Bitcoin or Ethereum etc.

EARNING AIRDROPS:

- Required to maintain a crypto wallet
- Rewarding Faithful Early Investors
- Rewarding Task Completion
- Marketing

SEARCH IN GOOGLE FOR DIFFERENT AIRDROPS OPPORTUNITY IN THE BLOCKCHAIN PROJECTS

EXAMPLES:

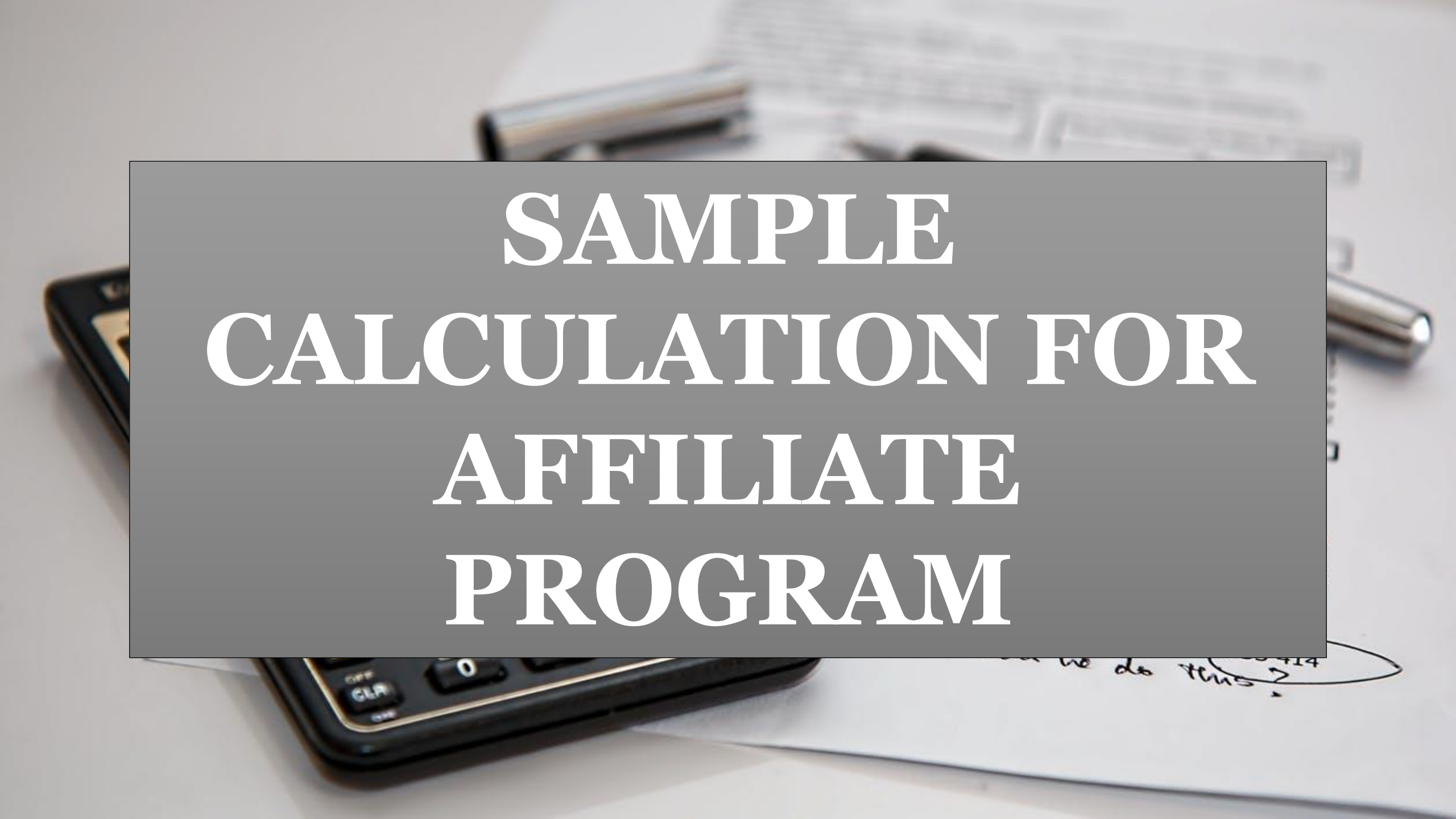
OMISEGO:
7 million OMG
Airdrop- worth
$136 Million

STELLAR:
2 billion XLM
Airdrop- worth
$120 Million

POLYMATH:
10 million POLY
Airdrop- worth
$12.4 Million


CALL
TO
ACTION

SAMPLE CALCULATION

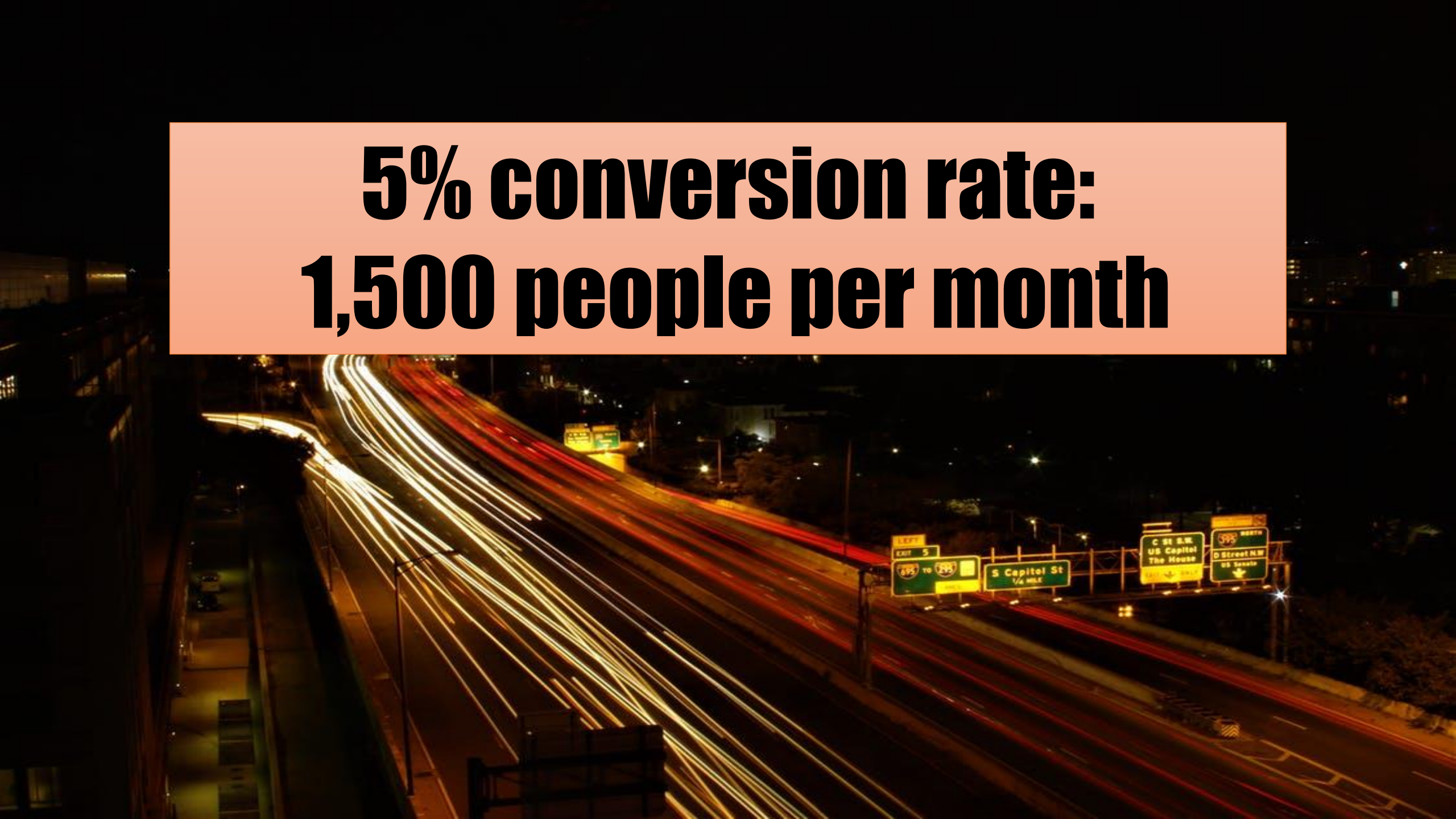


SAMPLE CALCULATION FOR AFFILIATE PROGRAM

1,000 PEOPLE VISITING YOUR WEBSITE PER DAY

30,000 PEOPLE VISITING YOUR WEBSITE PER MONTH

5% conversion rate:
1,500 people per month



CPS CONVERSION

25% CONVERTED- 375 PEOPLE

$50 AVERAGE PRODUCT PRICE

10% CPS FOR ONE CONVERTED LEAD=

$5 PER LEAD

TOTAL= 375 X 5= $1875

CPA CONVERSION

25% CONVERTED- 375 PEOPLE

$4 CPA FOR ONE CONVERTED LEAD

TOTAL= 375 X 4= $1500

CPL CONVERSION

25% CONVERTED- 375 PEOPLE

$2 CPL FOR ONE CONVERTED LEAD

TOTAL= 375 X 2= $750

CPM CONVERSION

30,000 VISITORS

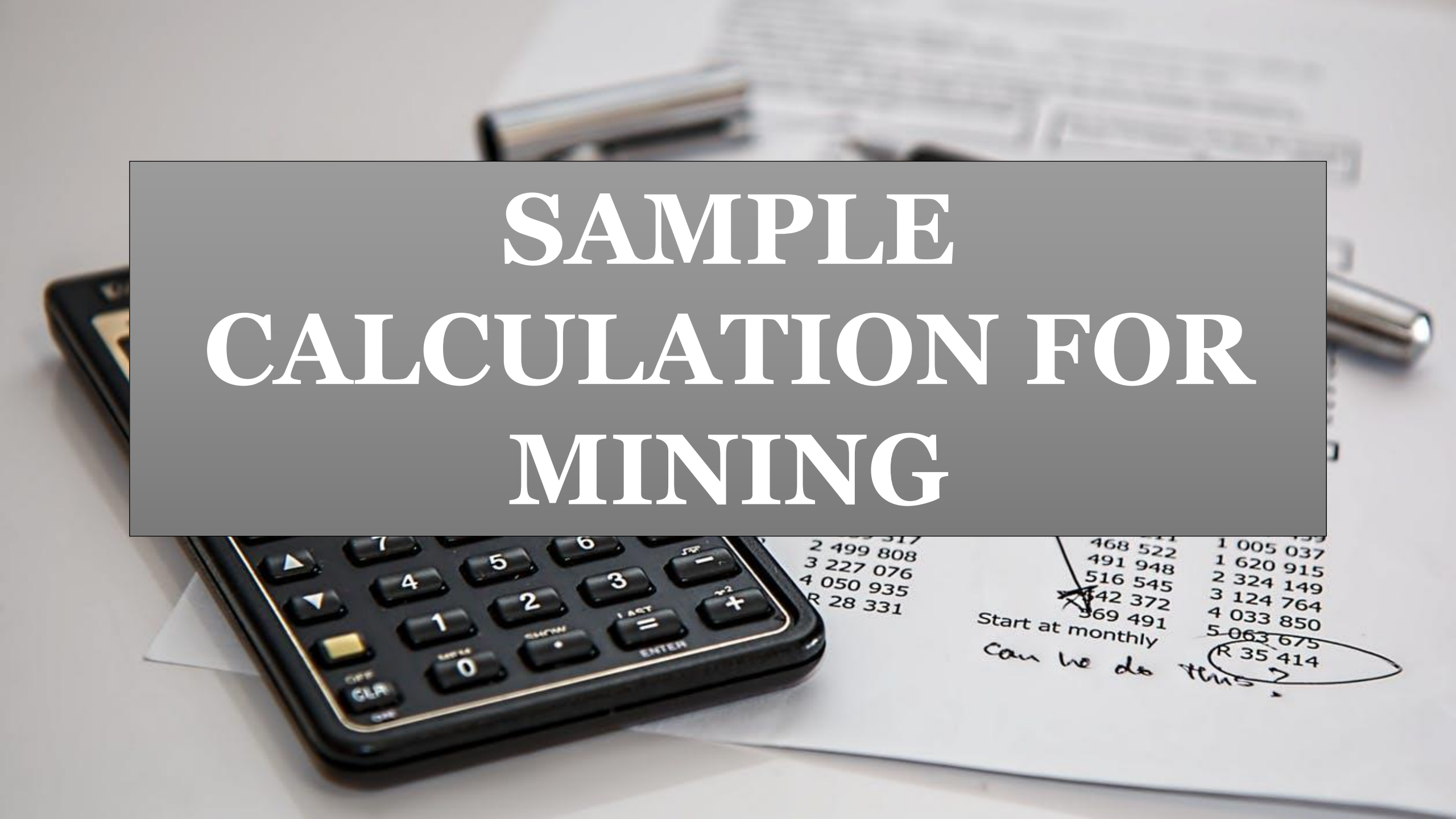
$5 CPM FOR 1000 LEADS

TOTAL= 5 X 30= $150

TOTAL AFFILIATE REVENUE

$4,275

WITH DUAL INCOME, IN ADDITION TO THE COMMISSIONS WE ALSO HAVE WEB MINING


SAMPLE
CALCULATION FOR
MINING

To mine **1 USD** worth crypto- apprx.**12 minutes**

In **1 hour- 5 USD** generated

In 20 hours a day- 100 USD generated

25 % - MINER (PC OF LAPTOP OWNER) = 25 USD

25 % - WEBSITE OWNER = 25 USD

25 % - AWMC AFFILIATE PROGRAM = 25 USD

25 % - AWMC = 25 USD

1000 PEOPLE CONNECTED TO YOUR WEBSITE

1000 X 25 = 2500 USD PER DAY REVENUE

MONTHLY REVENUE GENERATED:

AFFILIATE INCOME + MINING INCOME = $ (4,275 + 75,000)

TOTAL= $79,275

ANNUAL

Airdrops - worth $3,000

Access to **AWMC Affiliate Program- Airdrops worth $1,000**

ANNUAL REVENUE GENERATED:

(AFFILIATE INCOME + MINING INCOME) X 12 + AIRDROPS =

$ (951,300 + 4000)

TOTAL= $ 955,300

https://webmining.website/

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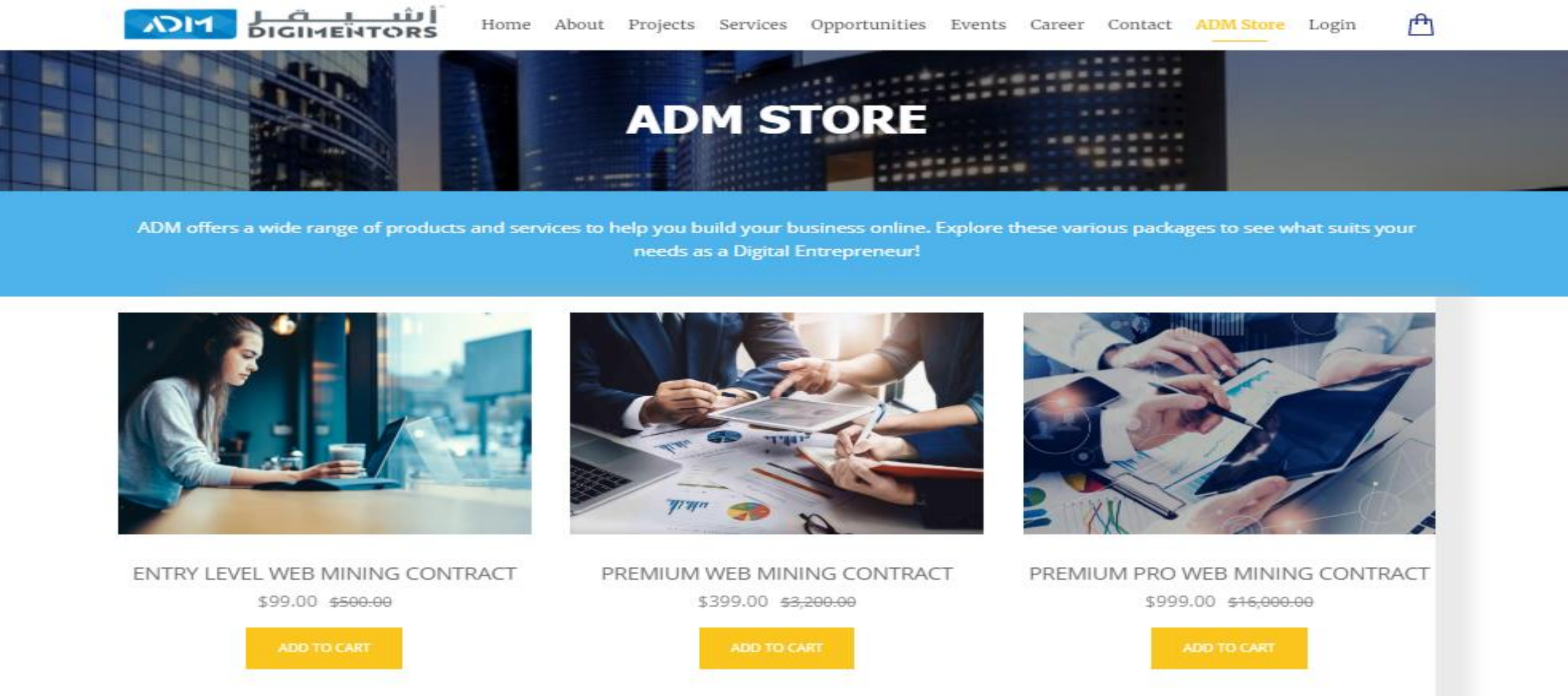
https://adm.qa/admstore



BLOCKCHAIN AND BELFRICS

In a world wherever we go, we are asked for our personal information for verification.

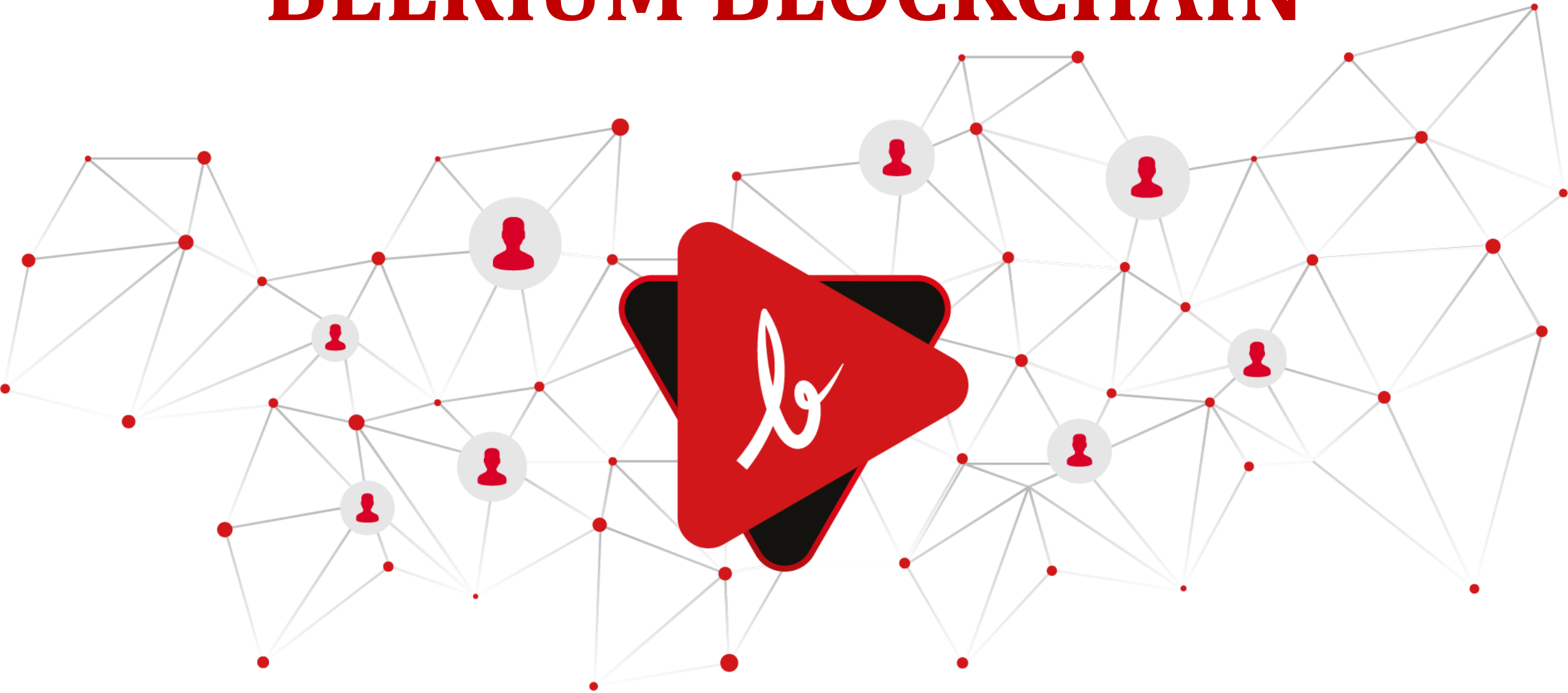
We have advance technologies where we have digitized our ID’s but the process of sharing it still remains conventional.

BUT WHAT HAPPENS TO YOUR PERSONAL INFORMATION AFTER SHARING?


ARE THEY SECURELY DESTROYED OR
ARE THEY STOLEN?

Blockchain technology provides a solution to these kinds of problems!

BELRIUM BLOCKCHAIN



FROM THE CONSUMER / VISITOR PERSPECTIVE:

Belrium Blockchain acts as a gate keeper and it allows access to the documents only to the merchants/ business places approved by you.

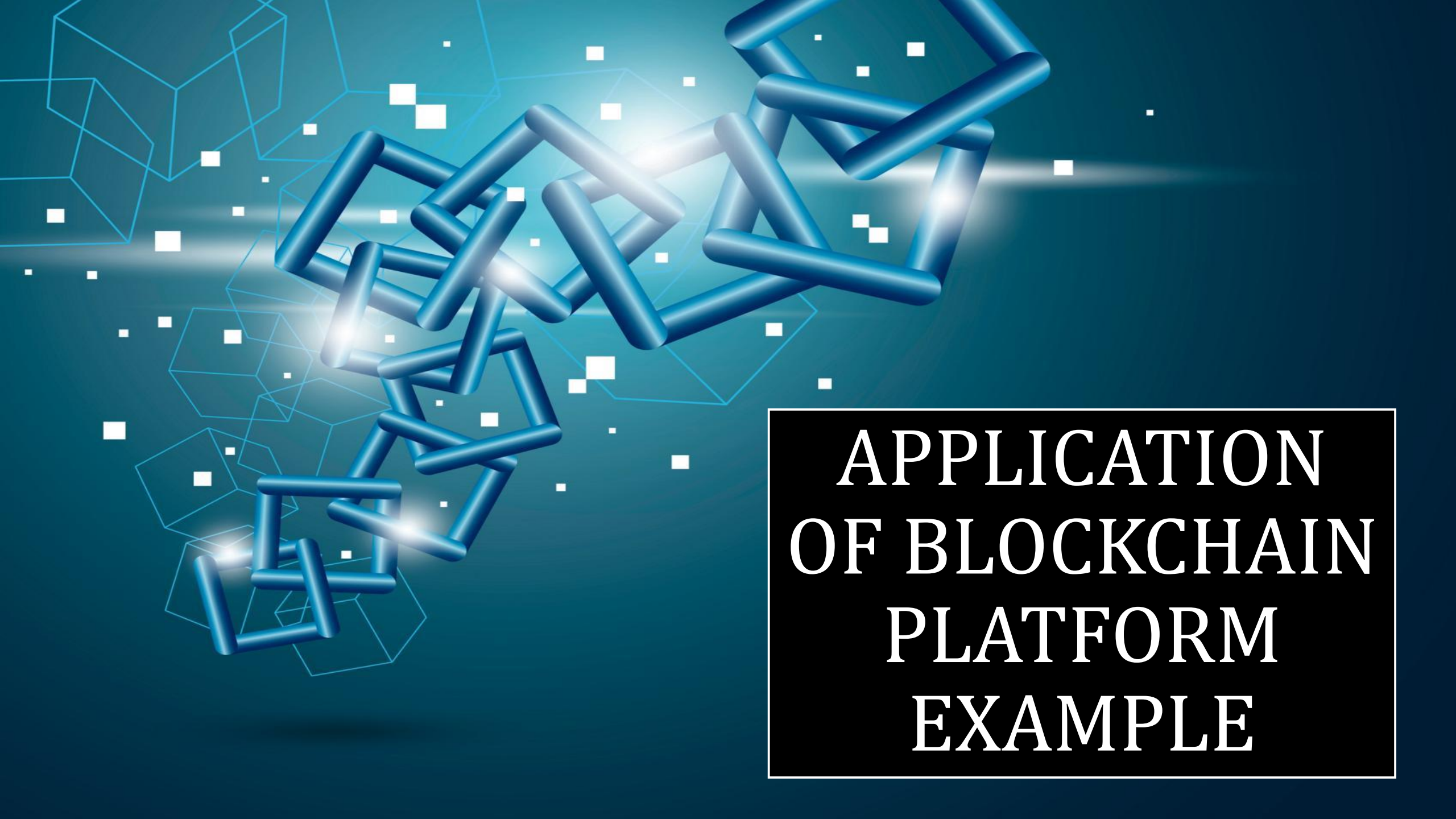
After the merchant verifies the Belrium ID, he cannot access the information again without your permission.

FROM THE BUSINESS / MERCHANT PERSPECTIVE:

Belrium Blockchain enables the business to verify and store the visitor information

No More Time Consuming KYC Processes!

Store the visitor data digitally on blockchain and avoid the hassle of collecting and maintaining heaps of papers



APPLICATION OF BLOCKCHAIN PLATFORM EXAMPLE

INDIA’S FIRST COVID-19 BLOCKCHAIN PLATFORM

DEVELOPED BY BELFRICS IN COLLABORATION IN RESEARCH PARTNERSHIP WITH IIIT-B AND FUNDED BY MPHASIS F1-FOUNDATION

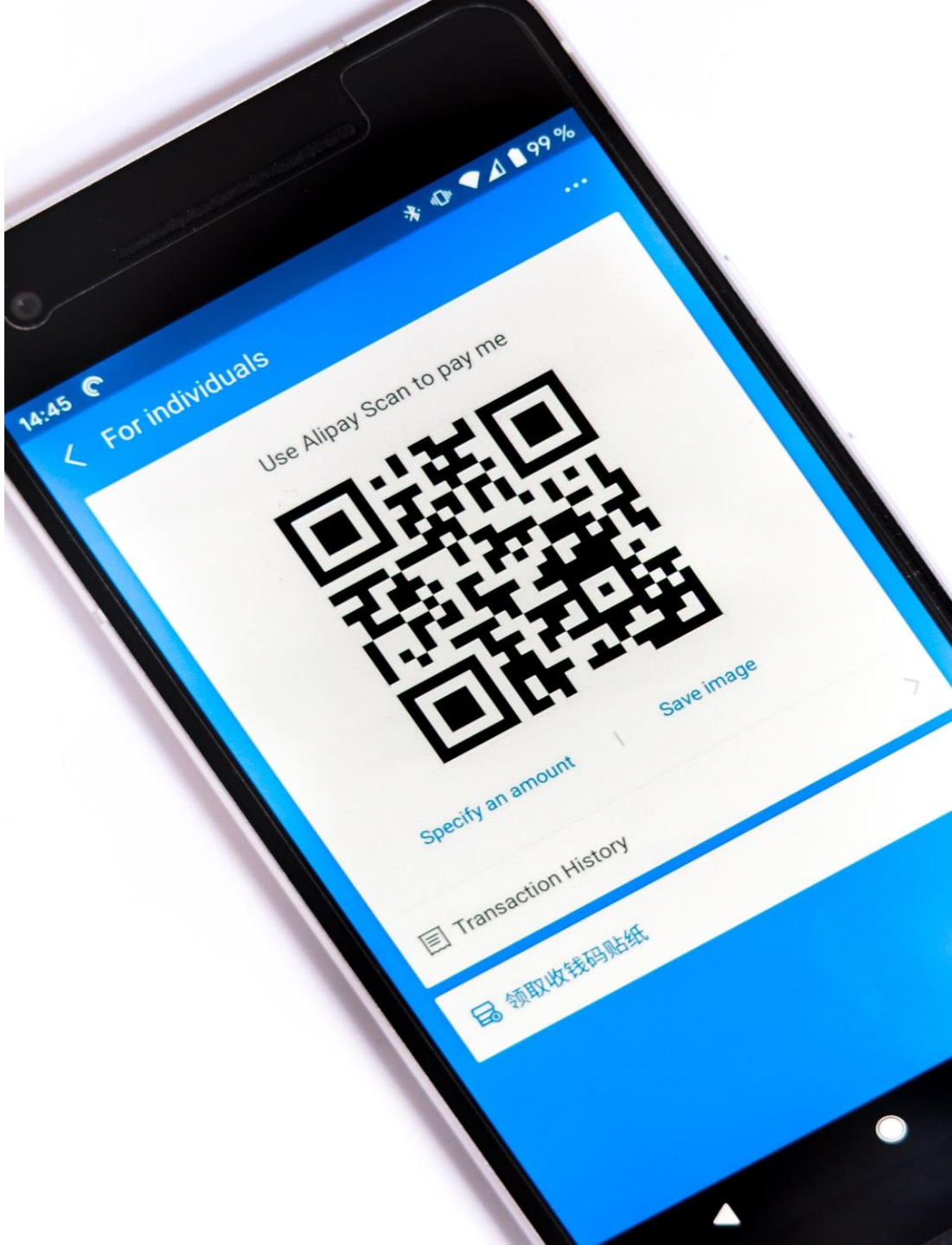
Designed For Clinical Records And Vaccination Details


INITIAL STAGE- WILL
BE COVERING 500
CLINICS ACROSS INDIA

WILL VENTURE INTO GLOBAL MARKETS BY 2023

CONVERTS COVID DATA LIKE TEST RESULTS FROM PHYSICAL TO DIGITAL ASSETS.

Allows Users To Carry Medical Records Digitally And Can Be Retrieved By QR Code



ENSURES DATA PRIVACY- TAKEN CARE BY THE BLOCKCHAIN PROCESS

CLINICS & USERS ARE THE 2 PARTIES TO THE CERTIFICATION PROCESS

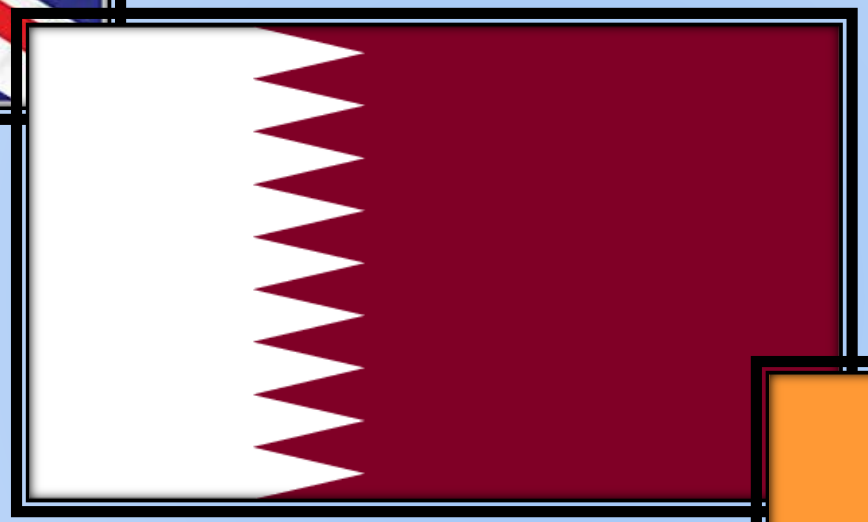
Apart from health records, Belfrics users would also get the option of digitising other vital information such as personal documents, social security details, educational certificates, financial statements and child's vaccination records.

BELshare enables merchants, including offices, shops, malls, salons and theatres to get access to quantitative insights about all visitors entering their premises by simply scanning the QR code on the visitors' app.

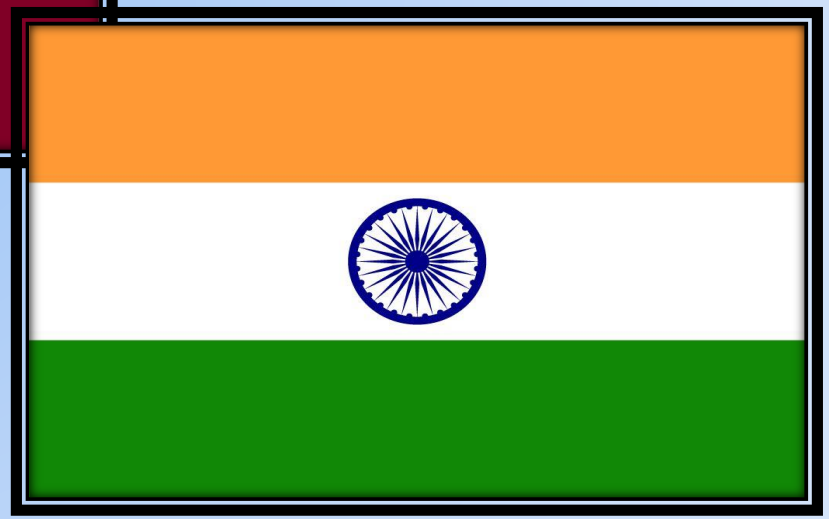
AFFILIATE WEB MINING

AFFILIATE WEB MINING CONSORTIUM: REGISTERED IN *THREE COUNTRIES*

UNITED KINGDOM



QATAR



INDIA


UNITED KINGDOM
GLOBAL CORPORATE OFFICE-
FOR MARKETING ACTIVITIES

QATAR

ADMIN AND OPERATIONAL ASPECTS

INDIA

TECHNICAL SUPPORT & DEVELOPMENT


HOW ABOUT A JOB IN YOUR OWN COMPANY?

How About Earning While At Vacation


THE NEXT GENERATION MONEY MAKING SYSTEM!

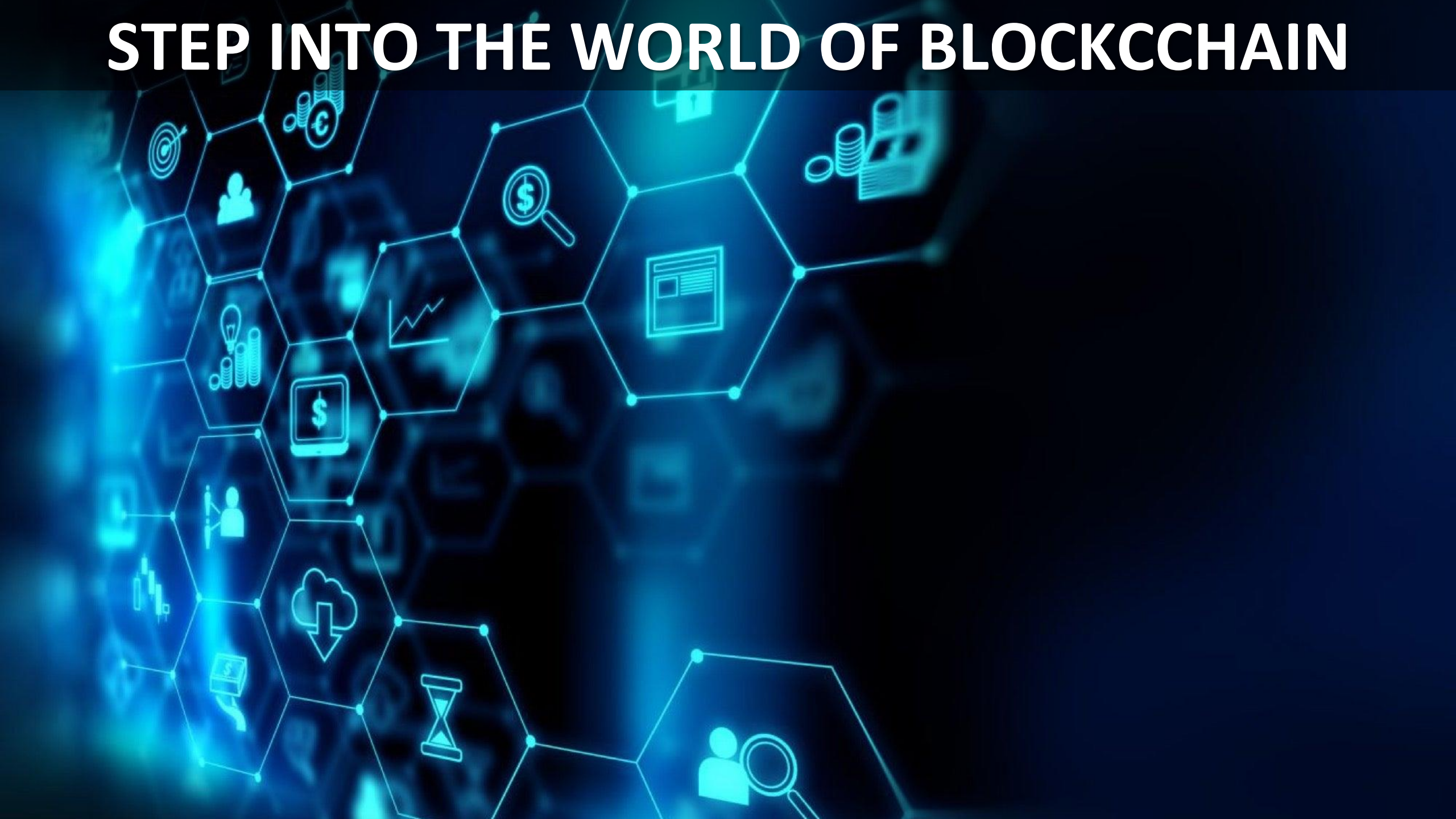
THIS IS THE RIGHT TIME TO DISCUSS

THE MAC CO-FOUNDER OPPORTUNITY

OUR IDENTIFICATION PROCESS OFFERS TWO CATEGORIES OF ENGAGEMENT

Co- Founder & Promoter or Empowering Co- Founder

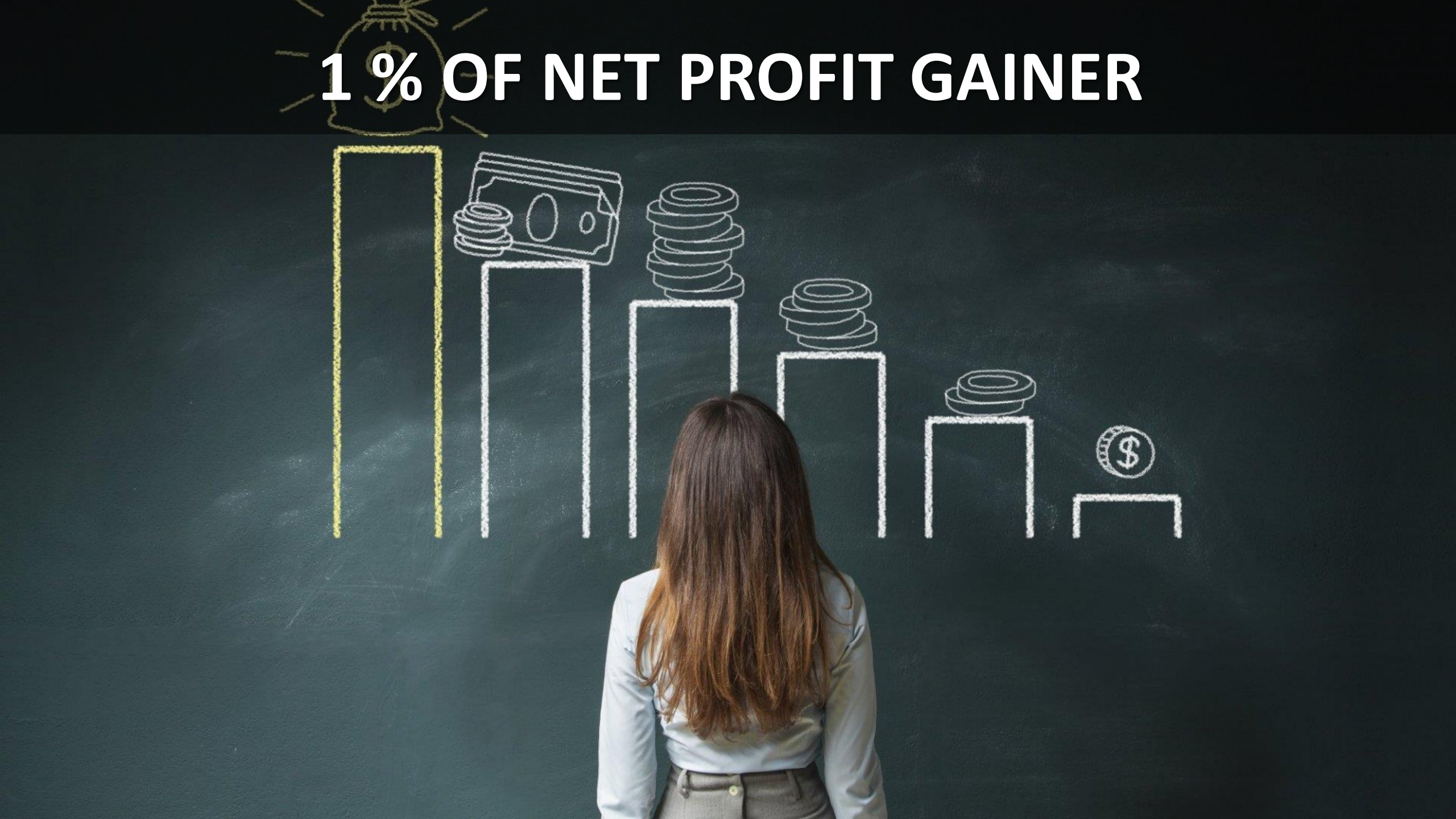
STEP INTO THE WORLD OF BLOCKCCHAIN



YOUR PROFESSIONAL BENEFITS

1 % EQUITY HOLDER

1 % OF NET PROFIT GAINER



SEED INVESTOR NETWORK PARTICIPANT

SALARIED TOP MANAGEMENT

CHIEF OFFICERS POSITIONS INCLUDED

PERKS & BENEFITS FOR GLOBAL TRAVEL

At One Glance

- 1 % Equity holder
- 1 % of net Profit gainer
- Seed investor network participant
- Salaried Top Management
- Chief officers positions included
- Perks & benefits for global travel

YES! OPPORTUNITY TO IMPLEMENT YOUR IDEAS

OPPORTUNITY TO IMPLEMENT YOUR STRATEGIES

BASIC QUALITY OF MAC CO-FONDER

VERY PASSIONATE AND ENERGETIC

CAPABLE TO IMPLEMENT MAC OPERATIONS

A GOOD DECISION MAKER

GOOD AT INSPIRING

HONESTY AND DEDICATION

CO RESPONSIBILITIES

MANAGE/SUPPORT CLIENTS

FINDING & MEETING WITH CLIENTS

PROMOTION OF MAC OPERATIONS

RESPONSIBLE FOR MANAGE DAILY ACCOUNTS

ONLINE PROMOTIONS

OFFLINE PROMOTIONS

EMPLOYEE MANAGEMENT

CONDUCT WEBINARS

CONDUCT TRAININGS

MENTORING AND CONSULTING

BRAND BUILDING

VISION

TO BECOME ONE OF THE LARGEST NETWORK OF MINERS IN THE WORLD

ACTORS INVOLVED IN AWM

Visitor	Comes to the website connected through AWM
Visitor who shares the laptop/desktop	Agrees to share the laptops processor for mining
Website/blog owners	Runs a website/blog for making profit and mining
Private beta participants	The tools experimented with 1200 participants
Public beta participants	Performs well in private beta and offers public about AWM.

ACTORS INVOLVED IN AWM

AWM consultant	Helps the participants in setting up the website and works closely with the company
AWM Senior consultants	Consultants who get promotion and a backdoor entry for an experienced person
Trainer	Trains people through webinars, online/offline training etc.
Train the trainer	Trains the trainer for various activities.
Management Team	The companies

ACTORS INVOLVED IN AWM

- Affiliate level 1
- Affiliate level 2
- Affiliate level 3


OPPORTUNITIES
Promoters
Co-Founders
Vice presidents
CEO

CONTACT YOUR RESPECTIVE CONSULTANT, MENTORS AND REGIONAL COORDINATORS

CONTACT US

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+974 3111 8579

EMAIL ID:
info@adm.qa

أشيقر DIGIMENTORS

ATTEND THE DETAILED MAC WEBINAR TOMORROW


Thank you

Made By: Thannia Sulaik, Haritha Santosh, & Labeeba Ahmed