

Next Generation Internet (Web 3.0: Block Chained Internet)

– Nitin Garg

AGM (IT), ALTTC, Ghaziabad

 <https://orcid.org/0000-0002-8943-9225>  mail.garg77@gmail.com

– Nidhi Garg

Astt. Professor (CS&IT), RKGITM College of Engineering and Technology, Ghaziabad

 <https://orcid.org/0000-0001-5833-5741>  nidhi.csit24@gmail.com

Article History

Paper Nomenclature:

Argument Based Credentials (ABC)

Paper Code: CYBNMV1N6NOV2019ABC2

Submission Online: 02-Nov-2019

Manuscript Acknowledged: 09-Nov-2019

Originality Check: 12-Nov-2019

Originality Test Ratio:13%

Peer Reviewers Comment: 15-Nov-2019

Blind Reviewers Remarks 16-Nov-2019

Author Revert: 20-Nov-2019

Camera-Ready-Copy: 25-Nov-2019

Editorial Board Citation: 26-Nov-2019

Published Online First: 22-Jan-2020

Internet is backbone of Today's fast moving life. we cannot even imagine a life without internet. Its a global wide area network that's cover the entire global area. Internet network comprises of high bandwidth lines that we say its a core network for operation on internet. Internet in proper way for all came in 1990 era. when the days were aimed for hyperlinking of web pages. Web pages (Static) of HTML used to provide the information and the era was basically referred Web1.0.



Source: <https://images.app.goo.gl/m6E6rKxtFzgUVbFs5>

Keywords : IoT | Web 3.0 | Block-Chain

Introduction:

As Technology always demands what next and simultaneously Human needs always grows and Human brain is always curious soon new version of web arises in world and it was the birth of web2.0.It basically addition of Dynamic web pages and introduction of social media in internet world that completely revolutionized the cyber world. In later edition in these series we refer as web2.5 is basically a introduction of Artificial Intelligence in this era that makes our search engine like a personnel assistant and by machine learning and and AI cyber life also becomes more easier and interesting. but as i have earlier refer technologies regularly taking better and better shape and Human life demands something new and innovation. In order to achieve this next version or dimension is Web3.0.



Source: <https://hackernoon.com/>

Web 3.0 is considered a new paradigm in cyber world aim for web interaction and will show a basic change in how Programmers/ Developers create websites, but more and most importantly, How we interacts on internet. Now its not only a human who interacts on internet but presence of Things that is deployment of IoT (Internet of Things) are already

in fast pacing in world. so now Things (means anything or everything) will also communicate in this cyber world. Experts believe that this new dimension in web interaction will further provides people's online lives easier, transparent and safer as smarter applications such as better search functions give users exactly what they are looking for. As Humans and

Machines or things will communicate over same Internet with Blockchain technology .which will provide the new shift from centralization to decentralization and there will not be further need of any middleman, or and mediatory agency, in a nutshell we can say we need not put our trust to any third party. In web 3.0 cyber world irrespective of any geographical location one to one communication and moreover transaction will be done directly.

Moving Towards Zero Trust Model

Today is the time to adopt the Zero Trust Model, if we go to the last decade patterns a lot of security breach or cheating events happens in cyber world basically internet architecture in founded over a mutual trust. In this foundation everybody put their trust in the form of banking transactions or social media or else, but when we consider or go through the cases of security breaches this trust goes shattered. so there is a need to adopt the Zero Trust Model.

Zero Trust is a security concept basically oriented on the faith that in cyber world we should not automatically trust anything *inside* or *outside* its perimeters and always instead must verify anything and everything who wish to connect to systems before providing access. The main technology which provides/ providing the zero trust concept is Blockchain.

Blockchain

Blockchain is a growing series of records (Data/information), referred as *blocks*, that are chained by best use of cryptography. Each or every block contains a Hash (Cryptography Hash) of the previous block, a timestamp(for real time), and transaction data .and this concept regularly grows on internet in the form of blocks and formed as a chain referred as Blockchain.

Originally Concept comes from a paper that was published by Satoshi Nakamoto in 2008.and first bitcoin block considered mined in yr2009. Entire concet of Blockchain works upon p2p network(peer to peer netwok) main concept of peer to peer network is to communicate directly without taking a help any centralized server as in traditional way that works upon client and server method.



source: <https://www.gettingsmart.com/>



Source: <https://hellofuture.orange.com/>

By the standard definition Blockchain is “an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way.” Here open refers to the open source and even in reference to the transactions more transparent as in comparison to web 2.0 that works upon highly centralized model.

Types Of Block Chain:

Basically three types of Blockchain comes in existence and highly used for various applications:

- Public Blockchains (Bitcoin and Ethereum)
- Private Blockchains (Hyperledger)
- Permissioned Blockchains

Public Blockchain:

Public blockchains are purely based upon decentralization, there is no central authority or management who have control over that for controlling which transactions are recorded in the blockchain or in what order blocks are processed.

Private Blockchains:

Private blockchains control the access rights to participate in the network, execute the consensus or related protocols that decides the Mining rights and rewards, and maintain the Distributed ledger.

Permissioned Blockchains:

Permissioned Blockchain is formed by some entities such as stakeholders of a given organisation or sectors. It is a mix of both private and public blockchain. In this type of blockchain network, a participant may not require permission to participate in the network, but always require permission to make transactions with another network participants.

Web 3.0 Stack

Stack of web 3.0 contains a different layers like application layers which comprises of Dapp and Dapp browsers

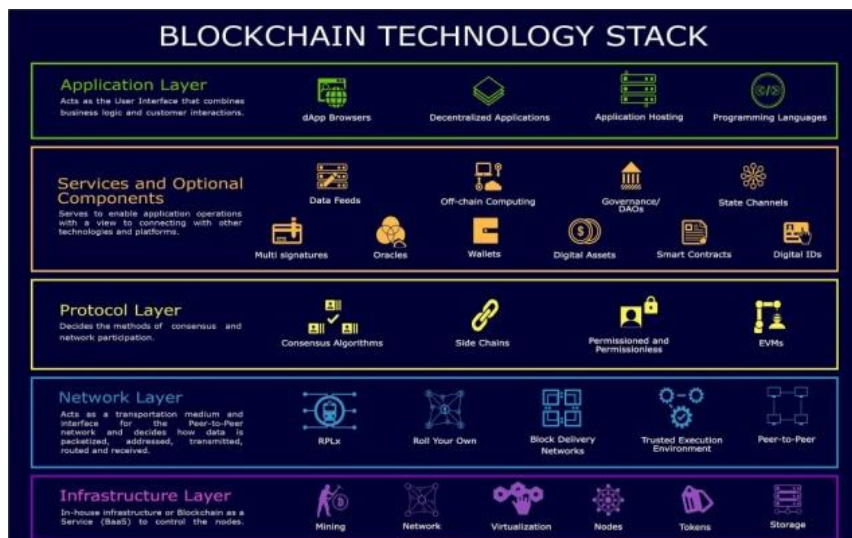


Source: <https://www.centrify.com/>

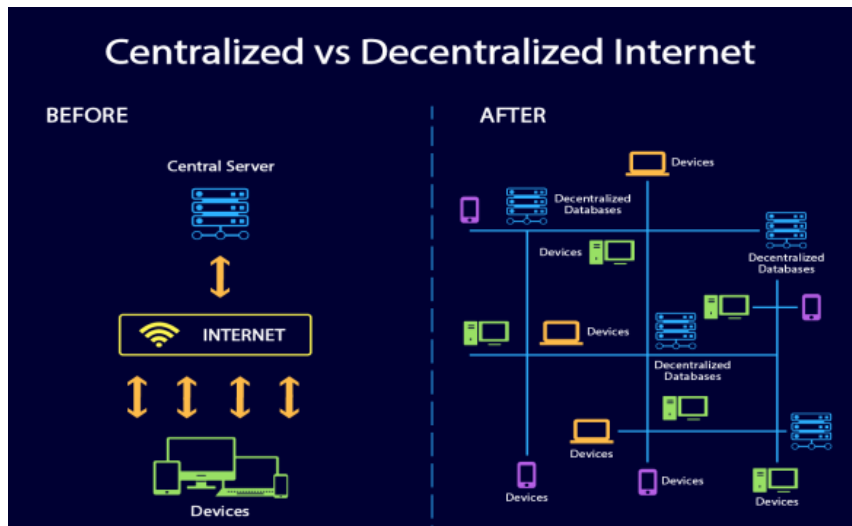
like Meta mask or Mist browsers that provides the execution environment for decentralize applications with any centralize control as compare to standard or tradional web. Stack also comprises with protocal layer,Network layer and Infrastructure layer that makes it full proof ecosystem to transact in a peer to peer network.

Smart Contracts:

Smart contract is a computer protocol or software programme intended to facilitate digitally, validate, or enforce the negotiation or performance of a contract. Smart contracts allow the performance of transactions without putting trust on third parties.



Source: <https://101blockchains.com/>



source : <https://hackernoon.com/>

The transition from client-server internet (Standard or Tradional) to the decentralized web will be gradual rather than radical. As the decentralized web stack is still maturing stage, the transition seems to be shifting from centralized to partially decentralized to fully decentralized.

Smart contracts have the potential to become legal contracts if certain conditions are met, they should not be confused with legal contracts accepted by courts and or law enforcement. However, we will probably see a fusion of legal contracts and smart contracts emerge over the next couple of years as the technology becomes more and more mature and widespread and legal standards will be adopted.

Power of Smart Contract

Smart contracts at basically	Smart contracts can be tured in to
Auro Authorative	Can be tured in to a legal agreement with self designated process in machines
Auto Executing	Removal of Third Party (Reliable Intermediary)
Works like in Real Time	Can trigger Transactions and saves the cost at huge amount.

Cryptoeconomics (Economy To Token Economy)

Satoshi Nakamoto introduced economic incentives to a P2P Network and solved the problem of economy slow down (Economy Depression 2008) in the Bitcoin White Paper published in 2008 Satoshi's implementation of a Proof of Work (POW) consensus mechanism introduced a new field of economic coordination game, now referred to as crypto economics.

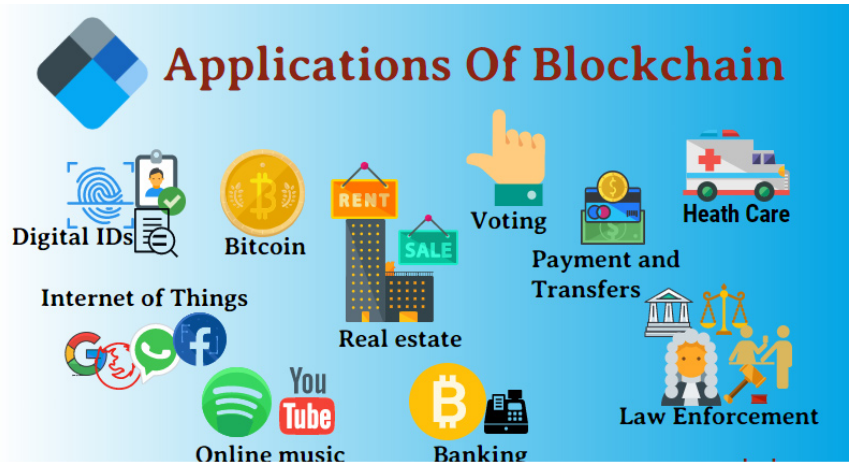
Token Holding Representation	Tokens can be used for
Currency like Rupees, Dollars, euros, etc	Vouchers or licencing in softwre,etc
An policy certificate like life insurance or others	Financial transacton (Buying/Selling)
Specific purpose like downloading a book from internet	Membership or subscription
Service access right	Allows to take services like Taxi hiring/ Rentals/ etc
Authorization or authority to take part of an event	E-voting

Blockchain Applications:

Blockchain influences in almost every area wrt to the deployment of web

3.o. Due to strong Hash algorithms and open and distributed ledger methodology its pacing in very fast manner in order to make use of future internet very secure and independent manner (without any centralized authority). Following are few areas in which Blockchain taking shape maturely.

- Digital Identity
- Payments And Money Transfers
- Smart Contracts
- Distributed Cloud Storage
- Supply-Chain Communications
- Networking And lot

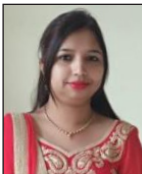


Source: <https://www.educba.com/>



Nitin Garg working as Astt.General Manager(IT),in Advanced Level Telecom Training Centre,(ALTTC) Ghaziabad. ALTTC Is ITU CoE in IOT, Cyber Security, Next Generation Wireless Broadband(NGBN).20 years Subject matter expert experience in Next Generation Network. At present working area of interest are IoT/Smart City Deployment, Industry 4.0 ,Cyber Hygiene, AI in CyberSecurity, BlockChain and applications,Python in Digital World.Latest publish edition is "Digital World of Programming Through Python".

mail.garg77@gmail.com



Nidhi Garg, working s Astt. Professor (CS&IT), in RKGITM College of Engineering and Technology Ghaziabad. Have more than 15 yrs of vast experience of R&D in the specialized stream of Next Generation Data Structures, Web Designing and high through put transaction Model Designing. At present area of devotion is Application of Artificial Intelligence in Internet of Things.

nidhi.csit24@gmail.com

Annexure I

Submission Date	Submission Id	Word Count	Character Count
12-Nov-2019	D62147494 (urkund)	1748	10021



Urkund Analysis Result

Analysed Document: Web3_0_Blockchain.docx (D62147494)
Submitted: 12/11/2019 2:14:00 PM
Submitted By: scholastic.seed@gmail.com
Significance: 13 %

Sources included in the report:

- S17MCSE06 Shivani Sharma.pdf (D54377172)
- <https://www.hashcashconsultants.com/media/differences-between-public-private-and-permissioned-blockchain-network/>
- <https://www.pymnts.com/tag/smart-contracts/>
- <https://s3.eu-west-2.amazonaws.com/blockchainhub.media/Blockchain+Technology+Handbook.pdf>

Instances where selected sources appear: 9

Note: Cybernomics runs an Urkund plagiarism tool for the originality check of an article before publication. Urkund is developed by Prio Infocenter AB based in Stockholm, Sweden.

Disclaimer: All Views expressed in this paper are my own, which some of the content are taken from open source website for the knowledge purpose. Those some of i had mentioned above in references section.

Reviewers Comment

Reviewer Comment 1: This paper properly analysis the Research Methodology of the choice of which methodology to use will depend on your research questions, the formulation of which is consequently informed by your research perspective change krna h.

Reviewer Comment 2: To Develop a good research, just like developing a good research question (researchable; neither too broad nor too narrow), is an important research skill change krna h.

Reviewer Comment 3: The Psychological researchers want to learn and understand human behaviour that how human body behaves in different scenario. It can be about how people think, how they feel, how they behave, or some combination of these issues. Research, and the understanding that follows, trickles down from the scientists and alters society.

Editorial Excerpt

The Authors had wonderfully covered all the facts. The Block Chain & Artificial Intelligence(AI) have Certain additional advanced AI systems integrated with machine learning competences will raise and grow their own systems over period in command to provide more precise answers. So it is decided to take this article under "Argument Based Credentials (ABC)" category.



Citation

Nitin Garg and Nidhi Garg
"Next Generation Internet (Web 3.0: Block Chained Internet)"
Volume-1, Issue-6, Nov 2019. (www.cybernomics.in)

Frequency: Monthly, Published: 2019
Conflict of Interest: Author of a Paper had
no conflict neither financially nor academically.