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Frugal INNOVATIONS

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How Blockchain Can Help in Promoting Frugal Innovation

Chintan Oza highlights the benefits of using blockchain technology as a catalyst to promote frugal innovation.

Ranging from Godrej ChotuKool – world's cheapest refrigerator to Jaipur Foot – world's most accepted prosthetic leg to Tata Nano – world's cheapest car to Mission to Mars – world's cheapest space mission; India has taken the centre stage in the world of frugal innovation. As the country is progressively adopting digital transformation, next generation of prosumers have emerged wherein urban and rural divide has been abolished and markets have merged seamlessly. Indians no longer need to move to cities just for quality internet; the digital economy has enabled everyone to conduct business from anywhere. Thanks to 25 years of Internet growth story, Automation, and new cloud native technologies, foundational segments like education, manufacturing and agriculture are in growth mode.

The recent times of Covid-19 lockdown has dramatically changed the way we live, work, learn and commute. During the lockdown period we all have mastered the art of working remotely while seamlessly transitioning our day to business to virtual mode. Students too have seamlessly transitioned to online classrooms to continue their education. Right from Doctors to Pundits all have started video consults.



India's Mission to Mars is the world's cheapest space mission.

As a result, a citizen living in a small town of Shirdi can learn from a maths teacher from Chennai, consult a doctor from Hyderabad and meet a Yoga teacher from Varanasi. This transition has cemented importance of internet and new technologies in our business as well as day to day life. Frugal innovation is the process of reducing complexity, cost of goods and its production.

The adjective 'frugal' denotes productive or economic usage, 'not excessive' or 'at little cost'. Frugal developments are often synonymous with changes of existing goods or services, the functions of which are reduced to their core functionality to meet a specific need. Three dimensions of frugal innovation have been identified as (a) substantial cost reduction; (b) emphasis on core functionalities; and (c) performance enhancement. Often, the terms 'frugal innovation' or 'frugal engineering' are used interchangeably.

Technology has taken centre stage in

every enterprise and powering digital transformation. Technology is the catalyst driving innovation. Initially frugal innovation was adopted by emerging markets to develop products and services which are cost efficient and suitable to the market. In the next wave frugal innovation has also made inroads to the developed markets. Whether emerging or developed markets, technology has played the role of a catalyst in the adoption of frugal innovation. One of the challenges faced by frugal innovators is how to find faster innovative solutions with less? Technology is the answer.

Benefits of blockchain

In this article I would share mapping of benefits of Blockchain to the six principles of frugal innovation. These six principles of frugal innovation as shared by Navi Radjou and Jaideep Prabhu in their latest book Frugal Innovation: How to do More with Less. This book was reviewed by Madan Mohan Rao of Yourstory.com. The link to the book review page has also been



Frugal Innovation: How to do More with Less.

included in the references. Due credits to the authors and reviewers are acknowledged and extended herewith. My purpose of writing this article is to map benefits of Blockchain technology to the six principles of frugal innovation. This would explain the how Blockchain technology can help in promoting frugal innovation. Let us examine the mapping. As a first step, the six innovative principles of frugal innovation are listed as under.

1. Engage and iterate
2. Flex your assets
3. Create sustainable solutions
4. Shape customer behaviour
5. Co-create value with prosumers, and
6. Make innovative friends.

Blockchain technology provides the solution to the age-old question of human trust. Blockchain runs on top of a peer-to-peer network and maintains the same versions of the transaction ledger in multiple nodes spread across the network. Blockchain network is a network of nodes having shared ledger between different organisations that can be used by anyone but cannot be altered. Blockchain is a distributed cryptographically protected database that holds every transaction record from the very first transaction.

In the first phase of this article, let us map benefits of Blockchain with various Principles of Frugal Innovation is detailed as under:

1. Trust – Enhance trust and

Compliance: Blockchain enabled networks are transparent and immutable thus record once created on blockchain network cannot be altered. This helps enhance trust amongst participating stakeholders and helps enhance the compliance. Compliance includes the business/contractual governance and the regulatory aspects.

This benefit of Blockchain can be mapped to following principles of frugal innovation:

- a) Shape Consumer behaviour: The immutable nature of records on blockchain network enhances trust of stakeholders in the ecosystem.
- b) Co-create value with prosumers: One of the use cases of traceability of product of origin helps innovative solutions like farm to fork and smart supply chains.
- c) Make innovative friends: Disruptive cases of blockchain enabled solutions, i.e., trade of energy and digital rights management of music enables rollout new services and business models. Adoption of blockchain enables make innovative friends to offer new products/services using new business models.

2. Crypto – Reduce cost and

Enhance speed: The most popular use case of blockchain is crypto currency. Recently value of a bitcoin crossed 12000 US dollars. Bitcoin being the most popular, there are around 300 types of various crypto currencies in circulation worldwide. Acceleration in adoption of Crypto currencies have diminished the role of 3rd party intermediary to execute the transaction. This has enabled all types of businesses to transfer money worldwide directly, securely, and instantaneously at a fraction of earlier commissions paid for such transactions. Elimination of intermediary has also increased the speed at which these transactions are being executed.

This benefit of Blockchain can be mapped to following principles of frugal innovation:

- a) Engage and iterate: Crypto enables exchange of value in a peer to peer mode. Circulation of crypto establishes

iterative ecosystem of users by engaging them to exchange value.

b) Create sustainable solutions: Blockchain helps create sustainable and scalable solutions. The process of rolling out a blockchain enabled solution is likely to get expedited with enhancement in adoption of blockchain as a mainstream technology in next 2 years' time.

c) Co-create with prosumers: Blockchain also helps co-create with prosumers i.e. coders, miners and other stakeholders in the ecosystem ranging from users, regulators, service providers, protocol developers, app developers and network providers.

3. Smart Contracts – Reduce cost and Enhance Compliance:

Smart Contract is a self-regulating piece of code that is stored on Blockchain Network and executes automatically. Smart Contracts are tamper proof and brings in the state-of-the-art security. Though the term Smart Contract was coined in 90's the adoption of smart contract has increased with wide scale adoption of blockchain enabled solutions. It is noteworthy that the launch of Ethereum Project has fuelled the adoption of smart contracts. By implementing smart contracts, enterprise are in control of compliances and execution of the agreed terms at speed of light. The cost of deploying smart contracts is reducing day by day as the adoption is growing.

This benefit of blockchain can be mapped to following principles of frugal innovation:

- a) Engage and Iterate: Smart contracts helps automate the execution of the agreed condition as defined in the code. This helps build transparent engagement and iterative process which can be adopted and replicated by all stakeholders in the system.
- b) Flex your assets: Smart Contracts enables to trade energy, rights of art, rights of music, etc. enabling new use cases and new business models. Using smart contract one can even trade unused mobile data limit of the day.
- c) Create Sustainable Solutions: Smart contract helps create sustainable solutions.

4. Digital Identity: Conventional identity systems of concurrent times are



fractured, fragile and exclusive. Most of the times, companies collect and store sensitive information about their customers alongside business data. This creates a higher degree of business risk and right access to the right user needs to be granted and monitored. Blockchain facilitates more secure encrypted digital identity management and storage by offering decentralised, interoperable, and scalable network. Digital identity solutions are used by government, enterprises, healthcare providers, insurers, cyber security specialists and IoT management systems.

This benefit of Blockchain can be mapped to following principles of frugal innovation:

- a) Flex your assets: Digital identity helps flex your assets by enabling greater control over the digital identity in a collaborative multi stakeholder environment spanning multiple countries. Using digital identity solutions, secure access is granted to the right stakeholder at the right time.
- b) Shape Consumer Behaviour: Blockchain enabled digital identity solutions enables user to control the usage of the digital identity. Digital identity is an encrypted identification code which can be enabled for a limited use or time purpose, i.e., one can share his driving license for a single time view/verification. Once the document has been viewed the link expires preventing misuse of information and enhancing security.
- c) Make innovative friends: Adoption of Digital Identity helps hyper collaboration for the hybrid value chains in the sharing economy, i.e., use of digital identity for new use cases, i.e., blockchain powered Health ID for each citizen.

Conclusion

To sum up, blockchain technology helps in reducing costs of overall transactions, reduces risks, helps minimise counterfeits, enhances trust, security, and efficiency, provides immutable record, and enables transparent auditing by all stakeholders. Blockchain supports all three dimensions of frugal innovation, viz., (a) substantial cost reduction; (b) emphasis on core functionalities; and (c) performance enhancement. Above mapping clearly highlights benefits of using blockchain technology as a catalyst to promote frugal innovation.

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Chintan Oza is a Telecom Program Manager by profession, and a technology program management evangelist by passion. Over a career span of 20+ years he has worked on various projects/programs in Government, Defence and Private sectors spanning multi-million, multi-technology, multi-geography and multi-cultural teams with Reliance and Tata Group. At present, he works as an Advisor to the board at Lloyds Ventures. His major career milestones include program managing one of the world's fastest GSM network rollout in a single geography and partnering with India's first Smart City Project as an ICT partner.