Blockchains and the disruption of the sharing economy value chains

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The main message: Blockchain technologies are disrupting the sharing economy through the deployment of de-centralised, open-source systems for resource optimisation and data monetisation.

Key points: The sharing economy value chain is underpinned by two guiding principles: resource optimisation and data monetisation. Unlike centralised trust systems, blockchains harness a decentralised system to share verified data via a consensus mechanism. Blockchain-enabled platforms signpost a disruptive model for the governance of the collaborative economy, driven by decentralised platform co-owners.

Abstract

Against the backdrop of debates and rising public sentiments against "Big Tech", this paper takes a conceptual approach to explore the possibilities for blockchain technologies to disrupt the governance of the sharing economy value chains. Unlike centralised trust systems employed by multi-sided digital platforms, blockchains employs a decentralised, open-source system by which data can be shared, verified and monitored across multiple nodes using a consensus mechanism. We bring insights and discussions from the extant literature together to elucidate two guiding principles of the sharing economy value chains: resource optimisation and data monetisation. Against this backdrop, we propose a conceptual framework that compares the governance mechanisms and value drivers of traditional digital platforms with blockchain-enabled platforms, where both resource optimisation and data monetisation are driven by decentralised platform co-owners, rather than single platform owners. We offer case illustrations to explicate this framework and how it signposts a new, disruptive model for the governance of the collaborative economy, especially in developing countries.

1. INTRODUCTION

This conceptual paper explores the disruptive impact of blockchain technologies on the collaborative digital economy, within the broader context of global value chains governance. Global value chain is defined as "the full range of activities that firms and workers perform to bring a product from its conception to end use and beyond"(Hernández and Pedersen, 2017, pg 138). These activities entail the combination of technology with labour and material inputs to create processed inputs that are then assembled, marketed and distributed to end users (Gereffi, Humphrey and Sturgeon, 2005). The global value chain is, in effect, an increasingly complex system that spans a whole spectrum of activities involving producers, suppliers, retailers and consumers across vast geographical locations. Thus, the governance of these complex web of

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activities has attracted significant scholarly and stakeholder interest. Multi-sided digital platforms are a typology of global value chain system that offers a simplified model of governance using digital technologies.

The past decade has been marked by the rise of multi-sided platforms, defined as businesses that create a service that brings together two or more groups of customers and businesses (Trabucchi and Buganza, 2020). These platforms are characterised by two key features: they enable direct interactions between two or more distinct sides; and each side is affiliated with the platform (Hagiu and Wright, 2015). In effect, multi-sided platforms have driven the emergence and growth of the sharing, or collaborative, economy- an economic model that is based on trading, swapping, sharing and renting products and services (Zhu and Liu, 2021).

The overarching economic logic of the sharing economy is the creation of new platforms and opportunities for enhanced and more efficient utilisation of otherwise idle resources. In the sharing economy, individuals and institutions with idle resources transfer the right to use the resources to others through a third-party platform. In the ensuing exchange, the owners capture value by sharing their idle resources, while the users also benefit from accessing resources and services at lower cost (Zhu and Liu, 2021). The sharing economy has also been variously described as "collaborative consumption" in which customer's consumption behaviour is gradually changing from merely buying new products and services to sharing and re-using them (Rong *et al.*, 2021).

The sharing economy has experienced a big boom within the past decade, with its economic value predicted to grow from $15billion in 2014 to $335billion in 2025 (Räisänen, Ojala and Tuovinen, 2021). Scholars have highlighted the prospects it offers in terms of employment opportunities, more sustainable business and consumption models, and acceleration of the circular economy (Trabucchi and Buganza, 2020; Rong *et al.*, 2021). However, other researchers and stakeholders have raised concerns about the disproportionate, and growing power, of platform owners who capture the bulk of economic value as a result of their control of the platforms (Moore and Tambini, 2018; Culpepper and Thelen, 2020). Platform owners manage the platform's core offerings. They also mediate the interaction between service users and service consumers (Scholten and Scholten, 2012). Platform owners exercise control over the platform through a range of mechanisms including platform access regulation, coercive action to exclude services and service providers, and information control including information about consumer behaviour, platform evolution and value creation opportunities (Scholten and Scholten, 2012). In effect, the emergence and expansion of multi-sided digital platforms have been driven by centralised trust systems owned and controlled by platform owners.

In this paper, we suggest that blockchain technologies offers a new set of prospects and possibilities for the collaborative economy. Unlike centralised trust systems, blockchains operate on open source, open verified code where data management, transaction and monitoring happen in a decentralised manner via a consensus mechanism across multiple nodes (Zutshi, Grilo and Nodehi, 2021). Public blockchains are characterised by the five key features: sense of belonging, trust, *the token economy*, which represents the tradable asset linked to the technology and drive various blockchain use cases; the *accountability* feature which allows multiple peers and computer nodes to simultaneously verify changes, supervise others' activities while also taking responsibility for their own actions; and *security and immutability* which ensures that all information shared and verified in the peer-to-peer network can no longer

be modified, once added to the chain (Zheng and Boh, 2021). Thus, this paper sets out a conceptual framework that analyses the prospects for blockchain technologies to disrupt the existing business model of the sharing economy driven by multi-sided digital platforms oriented in centralised trust systems controlled by platform owners.

Accordingly, our paper contributes to the literature in the following ways. First, we contribute to the literature on value chain in the sharing economy by developing a conceptual framework that delineates how blockchain as a technology might enhance the value creation and value capture in the value chain sharing economy. In particular, we extend the theoretical foundation of Zheng and Boh's social and technical features of public blockchain technology. The social and technical feature's contribution lies in detailing value creation drivers but without providing similar insights into value capture, especially those relating to data monetisation. In recognition of the open secret that data is the ultimate currency of digital platforms, and in line with studies that propose that integrating value creation and capture is a key means for firms to create member value and sustain their operations (Zacharias et al., 2016), this paper details value capture benefits, both from resource optimisation and data monetisation. We also explicate the link between value creation and value captured in the context of public blockchain technology. Finally, we offer propositions regarding the mechanisms by which the social and technical features create a competitive advantage through member value, which are closely linked to personal and interaction data. In this regard, each technical feature in Zheng and Boh's model correspond to a particular mechanism of value creation and captured, which then leads to success in the marketplace.

The rest of the paper is organised as follows: first we discuss global value chain governance and the emergence and expansion of the sharing economy, driven by centralised systems. We then discuss the distinctive features and value propositions of blockchains and the disruptive prospects for the governance of the sharing economy value chains. These discussions are then brought together in a conceptual framework and a set of propositions, followed by two illustrative cases of two African blockchain companies in the early stages of operation and disruption in the sharing economy.

2. LITERATURE AND CONCEPTUAL FRAMEWORK

2.1 Global value chain governance and the emergence and growth of the sharing economy

Global value chain governance (GVC) is defined as the organisation and control of global value chains. This definition encompasses the structure and characteristics of inter-firm relations, as well as the power dynamics among firms, and between firms and market and other institutional forces (McWilliam et al., 2020). Theorists of global value chain governance identify three key variables that define the structure of global value chain governance: 1(complexity of transactions, 2)ability to codify transactions, and 3)the capabilities in the supply-base (Gereffi, Humphrey and Sturgeon, 2005; Hernández and Pedersen, 2017). Based on this premise, five types of global value chain governance have been identified as hierarchy, captive, relational, modular, and market(Gereffi, Humphrey and Sturgeon, 2005). These governance types are distinguished by the different levels of transactional dependence, ownership, control, cost and complexity among actors in the global value chain. The sharing economies seek to simplify these relationships using digital technologies to bring users and stakeholders together in a system underpinned by ownership transfer and collaborative consumption. It enables and

promotes a system in which consumers can be producers (prosumers) and ownership is not permanent.

Thus the sharing economy is an economic model that is based on trading, swapping, sharing or renting products and services (Zhu and Liu, 2021). This model enables individuals and institutions with idle resources to capture value from such resources by sharing with users who in turn benefit by accessing such resources at lower cost. The sharing economy has also been described as "collaborative consumption", in which multiple people, rather than sole individuals, have access to the use of a service and goods and bear its costs (Rong *et al.*, 2021). Other scholars have argued that "collaborative consumption" is both too narrow and too broad to capture the core ideas and ideals of the sharing economy. Thus, Pouri and Hilty (2021) proposed a definition of the digital sharing economy as "a class of resource allocation systems based on sharing practices which are coordinated by digital online platforms and performed by individuals and possibly (non-) commercial organizations with the aim to provide access to material or immaterial resources" (pp. 130).

The sharing economic model is not, in itself, a novelty, as sharing practices have existed in various societies and communities since antiquity through practices such as trade by barter. The main difference in the 21st century is that information and communication technologies have created new forms of sharing, bypassing spatial and social constraints that defined earlier forms of exchanges (Zhao *et al.*, 2020; Pouri and Hilty, 2021). Thus, the impact of digital technologies has been revolutionary by bringing perfect strangers into play, and by mediating real-time exchanges and interactions among service providers and users spread across vast geographical areas. The sharing economy can operate on a consumer to consumer (C2C), or business to consumer (B2C). The C2C is a model of ownership transfer in which an external, trusted provider connect two consumers to share goods and services. A B2C model does not involve transfer of ownership as such but access provided by a business to a consumer to use a product or service for a limited time (Zhu and Liu, 2021).

What emerges from the foregoing description is that trust is the linchpin of the governance of the sharing economy value chains, indispensable for its entire functioning. It is a significant factor in individual decision making, and it is contagious to the extent that people's trust is affected by the trust of other users in the platform (Räisänen, Ojala and Tuovinen, 2021). Ultimately, however, the trust of platform users draws primarily from the trust reposed on platform owners, and which result in certain behavioural intentions (Wang and Jeong, 2018). Multi-sided digital platforms operate on centralised trust systems owned and managed by platform owners (Zutshi, Grilo and Nodehi, 2021). The platform owners "define the rules of engagement, pricing mechanisms, dispute resolution mechanisms, data management, privacy management, identity and permission management, among others" (Zutshi, Grilo and Nodehi, 2021, pp.1). They deploy the powers of digital technologies to draw new memberships using the incentive of "free" services to facilitate social connection and economy transactions among platform members. The network effect so created are at the core of the platforms strategy for value capture (Hagiu and Wright, 2015; Toufaily, Zalan and Dhaou, 2021).

The sharing economy value chains

The value chains of the sharing economy are underpinned by two overarching, and mutually reinforcing, principles: resource optimisation and data monetisation (figure 1). These principles apply across various activities in the value chains, including production, logistics, product

design, and supplier management (Rong *et al.*, 2018). The sharing economy enables individuals with idle resources to capture value by sharing access to those resources with consumers and users who in turn benefit by accessing such resources at lower costs (Rong *et al.*, 2021; Zhu and Liu, 2021). In effect, the logic of the sharing economy reduces idle capacity by promoting access over ownership (Ritter and Schanz, 2019). Individuals are disincentivised from single ownership of products and resources which they typically use well below capacity (Fraiberger and Sundararajan, 2015). Thus, the associated business models of the sharing economy can help maximise product utilisation, while reducing the demand for new goods and construction of new facilities (Rong *et al.*, 2018). For example, the Uber business model enables car use intensification such that the potential of cars are fully exploited before they are disposed of. It has been suggested that car-sharing can substitute up to seven cars (Ertz and Sarigöllü, 2019).

However, from the perspective of global value chain governance, the principle of resource optimisation also requires the aggregation and sharing of data for the model to create and deliver value for various groups of consumers and users. Simply, owners with idle resources at their disposal need to be matched with potential users requiring temporary access to them. The more owner-sharers and consumers requiring access, the better the value created and captured. Digital platforms owners therefore fill a critical need by deploying technology to bring various groups of users together, aggregate their data, match platform members and moderate the sharing and exchange between them. Platform owners either charge subscription or commission fees, or operate as "unlimited platforms" with "free" access to members(Ritter and Schanz, 2019). The platform owners capture much of the value through monetisation of data. Data is monetised either directly through sales to third parties, or indirectly through analytics to provide valuable insights that are then sold to third parties, or otherwise used by platform owners to create new forms of products and services (McKinsey & Company, 2017).

INSERT FIGURE 1 HERE

Figure 1 Principles undergirding the sharing economy value chains

In recent years, as the sharing economy boomed into a multi-billion-dollar economy, questions are being raised about the governance of the sharing economy value chains, especially about the enormous, and unchecked, powers of platform owners (Long and van Waes, 2021; Voytenko Palgan, Mont and Sulkakoski, 2021). These concerns are premised on the fact that platforms derive their enormous economic and political power from the aggregation and exploitation of users' data. By using technological infrastructures to provide intermediation between different groups, platforms are opportunistically positioned to monitor and extract all the information and interactions between the groups (Srnicek, 2017). The economic value so captured accrue disproportionately to the platform owners. Covid-19 has precipitated a remarkable expansion of platform economic power, with Jeff Bezos, the Amazon co-founder significantly expanding his wealth to emerge the richest man in the world.

Given the foregoing, a number of scholars have argued that the governance of the digital sharing economy is characterised by "pseudo-sharing", rather than "true sharing" (Belk, 2014). This is because, one, the "sharing" in the sharing economy is often a one-way process where the original owners provide often temporary access to goods and products in a non-reciprocal process (Acquier, Daudigeos and Pinkse, 2017). Two, the ultimate resource, data, is not shared but solely controlled by platform owners and monetised via direct or indirect sales to third parties (Srnicek, 2017). The growing suspicion, distrust and simmering discontent towards

digital platforms has set the stage for the emergence of disruptive innovations that extract control from Big Tech in favour of authentically collaborative models that co-opt users as co-owners and co-moderators of platforms (Acquier, Daudigeos and Pinkse, 2017; Böcker and Meelen, 2017). Blockchain technology appear to be a candidate for this imminent disruption of the sharing economy value chain.

2.2 Blockchains and future of the sharing economy

Blockchains are defined as ""tamper evident and tamper resistant digital ledgers implemented in a distributed fashion and usually without central authority" (Yaga *et al.*, 2018, pp.iv). The first application of blockchain technology, *bitcoin*, was proposed in 2008 by the pseudonymous Satoshi Nakamoto, in response to the fallout of the 2008 financial crises (Zheng *et al.*, 2017; Lee, 2019). In response to the popular sentiment about the failure of regulatory institutions, Nakamoto proposed a new payment method that bypasses central authorities, using cryptographically protected blocks of data known as blockchains (Ibrahim *et al.*, 2021). Blockchain networks fall under two broad categories: permissionless and permissioned networks. Permissionless networks, or public blockchains, are open-source platforms where any user can publish blocks- that is, read and write into the ledger. In order to prevent malicious users from subverting the system, permissionless networks adopts a consensus model by which users are to expend or maintain resources whilst attempting to publish blocks. Permissioned networks, on the other hand, requires users to have authorisation before they can publish blocks (Yaga *et al.*, 2018).

In contrast with the centralised trust systems employed by multi-sided digital platforms, blockchains employs a decentralised, open source system by which data management, transaction, verification and monitoring happen across multiple nodes using a consensus mechanism (Mohanta *et al.*, 2019; Bhushan *et al.*, 2021; Zutshi, Grilo and Nodehi, 2021). This trust mechanism is underpinned by four key features of blockchain technology: a)an append only ledger to provide full transactional history in a process where transactions can be written in to the blockchain but cannot be overridden; b) the use of cryptography to ensure that the data contained within the ledger has not been tampered with, and the data can be attested; c)the ledger is shared among multiple participants to provide transparency across multiple nodes in the network; d)scaling up the number of nodes in the network to make it more resilient to attacks (Yaga *et al.*, 2018). In effect, blockchains provide trust by removing the need for trust; it is the technology of trust best suited for trustless systems. It enables anonymous users in an autonomous system to exchange, share and transact among themselves without the need for an intermediary or central authority (Lee, 2019; Ibrahim *et al.*, 2021; Lim *et al.*, 2021). The promise of decentralisation is the most compelling value proposition offered by blockchain technology (Zutshi, Grilo and Nodehi, 2021). In this respect it upends the traditional architecture of global value chain governance. It has unsurprisingly piqued the interest of stakeholders across the world, as many consumers seek to break free from what is often considered the tyrannical grip of "Big Tech".

Blockchain technologies have been applied in various ways across a whole spectrum of industries and sectors, beginning with cryptocurrencies, of which hundreds have been created since the emergence of bitcoin in 2009 (Ibrahim *et al.*, 2021). The technology has also found applications in smart contract, on platforms such as Ethereum, where the smart contract sets up the contents of the contract and execution condition in advance, and then automatically

executes them once the conditions are fulfilled (Buterin, 2014; Lee, 2019). It is also applied in healthcare management, where blockchain applications are being used for medical record management, medical insurance, research and applications connecting users and healthcare providers(Ibrahim *et al.*, 2021). Blockchains have also found wide applications in large and complex supply chain networks, such as those used in international trade (Lim *et al.*, 2021).

The value propositions of blockchains have been presented in the form of a pyramid of five models/levels. At the base of the pyramid are decentralised data infrastructure and membership management. The intermediate level includes analytics and automation, and crypto-economic models. Occupying the top of the pyramid is decentralised governance, comprising elements such as distributed ownership, democratic decisions, and decentralised autonomous organisations (Zutshi, Grilo and Nodehi, 2021). The key value drivers comprise: *reputation value system*, *data ownership*, and *verification and tracking* (Zheng and Boh, 2021). The reputation value system entails the use of tokens to incentivise and reward members' contributions, the volume and quality of which enhances the reputation and resilience of the network. Underpinned by a model of shared governance, data is co-owned by all members of the network who monitor its security and decide if and how to share or monetise their data. Finally, the verification and tracking system enables members to publicly record and timestamp their actions using public and private keys.

Bringing these foregoing discussions and insights together, we propose a framework that highlights the disruptive components of blockchain-enabled sharing platforms (BSP) with traditional digital sharing platforms (DSP)- in terms of how they are governed, and how they generate and capture value (figure 2). As the figure shows, traditional multisided digital platforms use free services, especially in the earlier stages of their operation to attract new memberships in order to generate network effects. Their governance models are based on sole ownership and control of data to capture economic value, and investment in technological infrastructures to provide security and trust in order to maintain and grow the networks. Platform owners capture most of their value through monetisation of users' data via adverts and transfer to third parties. They also maximise profit from these network externalities in other ways, for example through direct or indirect fees imposed on users accessing "additional services' on the platform. Some of these fees, like Amazon Prime, come in form of flat fees. Finally, they use free access to customer information and platform interactions to create new forms of products and services. Conversely, the governance of blockchain enabled networks are underpinned by three key components: tokens to incentivise the expansion of the network via members' contributions, the co-ownership of data for sharing and monetisation, as agreed collectively by platform members, and a consensus model to promote transparency and accountability of the system. These drivers enable platform members to capture value via sharing and monetisation of data, easier and cheaper access to new products and services with lower transaction costs accruing from platform membership, and shared access to new facilities that enhances members' efficiency and productivity in the sharing economy.

INSERT FIGURE 2 HERE

Figure 2. Governance and value capture in blockchain enabled and traditional platforms (source: authors)

3. CASE ILLUSTRATIONS

Blockchain technology has helped in creating new forms of collaborative economies due to its multi-party and multi-actor systems of collaboration and transaction. In this section, we describe the cases of two decentralized collaborative economy platforms. The first one is *Coronet Blockchain*, a South Africa founded decentralized blockchain innovation disrupting the human hair value chain ecosystem and the second one is *Lightency*, a Tunisian founded energy value chain disruption platform. The following cases have been chosen to shed light on the applications of blockchain technology other than the well-publicised applications in cryptocurrency exchange platforms. According to Forrester Consulting Report on Blockchain (2019), data integrity ranked highest among the reasons organisations use blockchain, followed by supply chain track and trace. These two areas of applications have significant implications for the governance of global value chains.

3.1 Coronet Blockchain – South Africa

On January 1, 2018, a South African Couple, Shadrack and Pretty Kubyane launched the first blockchain solution for the human hair value chain in Africa to address the low-quality assurance and transparency issues that happens in the human hair value chain. The blockchain solution is built on the IBM blockchain technology. According to CoronetBloockchain.com (2021), Coronet Blockchain is building a B2B2C Marketplace that provides blockchain vetted human hair extensions, hair care products & salon equipment to African salons, distributors & retailers from ethical global manufacturers at lower sourcing costs. Coronet Blockchain provides end-to-end traceability & authentication of human hair extension products from the point of origin to the point of consumption. In the process, making the human hair supply chain efficient, transparent & safe, enabled by and built on the IBM Blockchain. By tracking each step of the human hair supply chain & sharing data on an immutable ledger, brands on this platform can ensure the promised quality of human hair goods is indisputable.

The Coronet Blockchain platform is a good example of a nascent value chain governance model that is underpinned by heterarchical, rather than hierarchical, relationship among the players, information symmetry and transactional co-dependence, and shared ownership and control.

Coronet governance structure and interaction mechanisms

Any interested actor in the value chain signs up on the website and they are integrated into the value chain for a new transaction on the blockchain infrastructure. The transactions are fully decentralised and the platform has no influence in the track and trace process from the start of the transaction to the end. In the words of (Kubyane & Kubyane, 2020), The impact of blockchain technology on the Coronet B2B e-commerce disruption of the human hair business can be described as connection of parties, selection of interest, confirmation of value, and value exchange. The operational description of the value chain is described below:

Suppliers - Through the B2B e-commerce blockchain platform, vetted suppliers can sell their products such as quality authenticated human hair extensions, aftercare products, and salon equipment to 500 000 Salons across Africa that makes up the addressable market.

Salon and Retail businesses - Salons can place orders from international manufacturers, manage bookings, inventory, CRM and payroll all within the system.

Stylists - Stylists are certified for their employable skills; they manage bookings, client consultations and display their credentials within the Blockchain ecosystem.

Consumers - Consumers can order quality authenticated human hair products from vetted and certified salon brands. They will rate their stylist, rate the services, manage warranties and returns when or should they not be happy with the products and services. They will have access to product information that proves the quality of their wig and weaves.

Gleanings from the value chain described above shows that the role of the blockchain technology in the human hair collaborative economy helps in vendor vetting, product authentication, process transparency and the creation of transactional trust.

Benefit for the value chain ecosystem actors

Coronet Blockchain platform has brought various users together from a wide range of industry sectors (see table 1). These include manufacturers who are able to use the platform to connect with salons, access auditable records and access new markets; distributors who harness the capabilities for real-time inventory management and take advantage of the opportunity for internal data sharing; salons who can access wider supplier networks and prevent stylists-themselves in the network- from stealing clients; and consumers who can access high quality hair services at reasonable, low cost.

INSERT TABLE 1 HERE

3.2 Lightency.io - Tunisia

Haythem Chedid, a Tunisian technology start-up launched Lightency in 2018 to address the ineffectiveness in the Tunisian Energy Sector by creating a decentralized Blockchain solution where energy producers and consumers and transact. According to Lightecncy.io (2021), Lightency is a green tech start-up that harnesses the power of deep technologies to ensure/accelerate better access to affordable and green energy. By providing a decentralized solution, the platform ensure that green energy is produced, consumed, and exchanged locally which lowers the cost and increases efficiency (figure 3).

The innovation was conceived to create solutions in addressing specific problems facing the African energy market. Some of the problems that motivated this decentralized innovation are Access to electricity (600 million people in Africa don't have access to electricity); Distributed energy resources in microgrids is a solution to accelerate access to electricity; Grid instability (Issues maintaining grid stability, reliability and availability); Peer to Peer (P2P) trading platform to better balance the Grid and enable users to trade excess energy; payment issues (issues securing and dealing with customers payments) and use of blockchain to secure and lower the fees of micropayment, also ensure transparency for both parties. (Lightency.io, 2021).

The parties on this platform are able to meet one another to look for those who are interested in buying energy or vice versa. The transaction has no influence of the owners of the platform itself as the system is secured and decentralized for the actors. From identifying who to exchange value with, to payment and generation of energy tokens, the actors transact independent of platform influence.

Lightency.io governance structure and interaction mechanisms

- The platform contributes to increasing electrifrication rates by allowing people to gain money through selling their excess of electricity while encouraging self-production and auto-consumption.
- The platform contributes to micro-grid implementation by shifting to a decentralized distribution management system. This helps in ensuring a better grid control and stabilisation, as well as the enhancement of the power performance.
- The platform empowers customers through its p2p (Peer to Peer) trading system by reducing intermediaries and putting customers at the centre and allowing them to freely exchange energy.

INSERT FIGURE 3 HERE

Figure 3. Lightency's Peer-to-Peer Collaborative Framework (Source: Lightency.io)

Unique Advantages of Lightency.io on the African Energy Collaborative Economy.

- <u>Social Impact</u> **-** Affordable access to clean energy, considerably impacts people's quality of life by ensuring better health conditions, and allowing for better education conditions.
- <u>Economic Impact</u> – Energy access helps people in expanding their opportunities by allowing them to join the modern economies.
- <u>Environmental Impact</u> – The adoption of renewable energy increases the energy efficiencies through better management of available resources and this by implication have a tremendous impact on the environment.

4. DISCUSSION AND CONCLUSION

This paper discusses the disruptive possibilities and potentials of blockchain technologies in the landscape of the sharing, collaborative economy. Within the past decade, multi-sided digital platforms have expanded and grown rapidly, transforming the way businesses create and capture value. As Covid-19 accelerates the boom and growing power of digital platforms, new concerns have arisen about the governance of the sharing economy, in terms of the disproportionate power and control exercised by digital platforms. Unlike these digital platforms, which operates on centralised trust systems, blockchain enabled platforms offer promising new opportunities via decentralised systems that brings platform members together in co-owned and co-managed platforms that creates and deliver value for all. The logic of blockchain technology presents a fascinating and compelling paradox in that it provides trust by removing the need for trust. It is the ultimate technology of trust that is best suited for a trust-less system.

This paper contributes to the literature on value creation and value capturing in the value chain sharing economy by exploring the disruptive impact of blockchain technologies on the governance of the sharing economy value chain. Drawing insights from the literature on global value chain governance, multi-sided platforms and blockchain technology, this paper set out to provide a detailed conceptual framework that illuminate the different governance mechanism and value drivers in traditional digital sharing platforms and blockchain-enabled platforms. We argue that the governance model of blockchain platforms is characterised by true sharing because data, not just products and goods, are truly shared and co-owned via a consensus

mechanism. This consensus mechanism can have varying levels of disruptive implications for the different value chain governance types outlined in the previous section. Thus, the hierarchical form becomes more heterarchical, the captive becomes collaborative, the relational is defined by higher levels of transactional dependence and information symmetry, the modular is underpinned by shared competencies and co-production, and market linkages are as dynamic as they are more secured.

Following a conceptual framework that brings together the various insights from the extant literature, we present two case illustrations of blockchain-enabled platforms in South Africa and Tunisia, where platform members are harnessing the potentials of blockchain technologies to co-create and co-share value in a transparent, accountable system that offers value for all. . We argue that, in digital sharing platforms enabled by blockchains, members do not only create value for themselves through efficient exchange of high-valued products and goods among platform members, they also share the value inherent in data aggregated, co-controlled and co-exploited by platform members. The two cases used to support our argument are start-ups in their earlier stages of development, with potentials ahead for expansion and creation of new opportunities that could signal new direction of travel for consumers and entrepreneurs, especially in developing countries. We hope that our work can inspire new inquiries about how blockchains disrupt the value chains of the sharing economy and how they drive "true sharing" across a whole spectrum of sectors including manufacturing, logistics, transportation and hospitality sectors, to mention a few.

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