

What Blockchain Means for the Sharing Economy

by Primavera De Filippi

MARCH 15, 2017



jakub nanista

Look at the modus operandi of today's internet giants – such as Google, Facebook, Twitter, Uber, or Airbnb – and you'll notice they have one thing in common: They rely on the contributions of users as a means to generate value within their own platforms. Over the past 20 years the economy has progressively moved away from the traditional model of centralized organizations, where large operators, often with a dominant position, were responsible for providing a service to a group of passive consumers. Today we are moving toward a new model of increasingly decentralized organizations, where large operators are responsible for aggregating the resources

of multiple people to provide a service to a much more active group of consumers. This shift marks the advent of a new generation of “dematerialized” organizations that do not require physical offices, assets, or even employees.

The problem with this model is that, in most cases, the value produced by the crowd is not equally redistributed among all those who have contributed to the value production; all of the profits are captured by the large intermediaries who operate the platforms.

Recently, a new technology has emerged that could change this imbalance. Blockchain facilitates the exchange of value in a secure and decentralized manner, without the need for an intermediary.

How Blockchain Works

Here are five basic principles underlying the technology.

1. Distributed Database

Each party on a blockchain has access to the entire database and its complete history. No single party controls the data or the information. Every party can verify the records of its transaction partners directly, without an intermediary.

2. Peer-to-Peer Transmission

Communication occurs directly between peers instead of through a central node. Each node stores and forwards information to all other nodes.

3. Transparency with Pseudonymity

Every transaction and its associated value are visible to anyone with access to the system. Each node, or user, on a blockchain has a unique 30-plus-character alphanumeric address that identifies it. Users can choose to remain anonymous or provide proof of their identity to others. Transactions occur between blockchain addresses.

4. Irreversibility of Records

But the most revolutionary aspect of blockchain technology is that it can run software in a secure and decentralized manner. With a blockchain, software applications no longer need to be deployed on a centralized server: They can be run on a peer-to-peer network that is not controlled by any single party. These blockchain-based applications can be used to coordinate the activities of a large number of individuals, who can organize themselves without the help of a third party. Blockchain technology is ultimately a means for individuals to coordinate common activities, to interact directly with one another, and to govern themselves in a more secure and decentralized manner.

There are already a fair number of applications that have been deployed on a blockchain. Akasha, Steem.io, or Synereo, for instance, are distributed social networks that operate like Facebook, but without a central platform. Instead of relying on a centralized organization

Once a transaction is entered in the database and the accounts are updated, the records cannot be altered, because they're linked to every transaction record that came before them (hence the term "chain"). Various computational algorithms and approaches are deployed to ensure that the recording on the database is permanent, chronologically ordered, and available to all others on the network.

5. Computational Logic

The digital nature of the ledger means that blockchain transactions can be tied to computational logic and in essence programmed. So users can set up algorithms and rules that automatically trigger transactions between nodes.

to manage the network and stipulate which content should be displayed to whom (often through proprietary algorithms that are not disclosed to the public), these platforms are run in a decentralized manner, aggregating the work of disparate groups of peers, which coordinate themselves, only and exclusively, through a set of code-based rules enshrined in a blockchain. People must pay microfees to post messages onto the network, which will be paid to those who contribute to maintaining and operating the network. Contributors may earn back the fee (plus additional compensation) as their messages spread across the network and are positively evaluated by their peers.

INSIGHT CENTER

Business in the Era of Blockchain

SPONSORED BY ACCENTURE

How technology is transforming transactions.

Similarly, OpenBazaar is a decentralized marketplace, much like eBay or Amazon, but operates independently of any intermediary operator. The platform relies on blockchain technology to ensure that buyers and sellers can interact directly with one another, without passing through any centralized middleman. Anyone is free to register a product on the platform, which will become visible to all users connected to the network. Once a buyer agrees to the price for that product, an escrow account is created on the bitcoin blockchain that requires two out of three people (i.e., the buyer, the seller, and a potential third-party arbitrator) to agree for the funds to be released (a so-called multisignature account). Once the buyer has sent the payment to the account, the seller ships the product; after receiving the product, the buyer releases the funds from the escrow account. Only if there is an issue between the two does the system require the intervention of a third party (e.g., a randomly selected arbitrator) to decide whether to release the payment to the seller or whether to return the money to the buyer.

There are also decentralized carpooling platforms, such as Lazooz or ArcadeCity, which operate much like Uber, but without a centralized operator. These platforms are governed only by the code deployed on a blockchain-based infrastructure, which is designed to govern peer-to-peer interactions between drivers and users. These platforms rely on a blockchain to reward drivers contributing to the platform with specially designed tokens that represent a share in the platform. The more a driver contributes to the network, the more they will be able to benefit from the success of that platform, and the greater their influence in the governance of that organization.

Blockchain technology thus facilitates the emergence of new forms of organizations, which are not only *dematerialized* but also *decentralized*. These organizations – which have no director or CEO, or any sort of hierarchical structure – are administered, collectively, by all individuals interacting on a blockchain. As such, it is important not to confuse them with the traditional model of “crowd-sourcing,” where people contribute to a platform but do not benefit from the success of that platform. Blockchain technologies can support a much more cooperative form of crowd-sourcing – sometimes referred to as “platform cooperativism” – where users qualify both as *contributors* and *shareholders* of the platforms to which they contribute. And since there is no intermediary operator, the value produced within these platforms can be more equally redistributed among those who have contributed to the value creation.

With this new opportunity for increased “cooperativism,” we’re moving toward a true sharing or collaborative economy – one that is not controlled by a few large intermediary operators, but that is governed *by* and *for* the people.

There’s nothing new about that, you might say – haven’t we heard these promises before? Wasn’t the mainstream deployment of the internet supposed to level the playing field for individuals and small businesses competing against corporate giants? And yet, as time went by, most of the promises and dreams of the early internet days faded away, as big giants formed and took control over our digital landscape.

Today we have a new opportunity to fulfill these promises. Blockchain technology makes it possible to replace the model of top-down hierarchical organizations with a system of distributed, bottom-up cooperation. This shift could change the way wealth is distributed in the first place, enabling people to cooperate toward the creation of a common good, while ensuring that everyone will be duly compensated for their efforts and contributions.

And yet nothing should be taken for granted. Just as the internet has evolved from a highly decentralized infrastructure into an increasingly centralized system controlled by only a few large online operators, there is always the risk that big giants will eventually form in the blockchain space. We've lost our first window of opportunity with the internet. If we, as a society, really value the concept of a true sharing economy, where the individuals doing the work are fairly rewarded for their efforts, it behooves us all to engage and experiment with this emergent technology, to explore the new opportunities it provides and deploy large, successful, community-driven applications that enable us to resist the formation of blockchain giants.

Primavera De Filippi is a permanent researcher at the National Center of Scientific Research (CNRS) in Paris. She is faculty associate at the Berkman Center for Internet & Society at Harvard Law School, where she is investigating the concept of "governance-by-design" as it relates to online distributed architectures.

This article is about **TECHNOLOGY**

 FOLLOW THIS TOPIC

Related Topics: **ECONOMICS & SOCIETY**

Comments

Leave a Comment

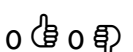
POST

17 COMMENTS

S Schutzer a year ago

Primavera, I tried to connect with you on LinkedIn but it required a \$50/month "premium" membership. Maybe this is another example of where blockchain technology may be impactful, an improved network under a shared economy!

REPLY



POSTING GUIDELINES

We hope the conversations that take place on HBR.org will be energetic, constructive, and thought-provoking. To comment, readers must sign in or register. And to ensure the quality of the discussion, our moderating team will review all comments and may edit them for clarity, length, and relevance. Comments that are overly promotional, mean-spirited, or off-topic may be deleted per the moderators' judgment. All postings become the property of Harvard Business Publishing.