

# Can blockchain accelerate financial inclusion globally?

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Financial products and services drive the world's development and reduce poverty. However, more than 1.7 billion individuals globally currently lack the most basic financial services and therefore cannot adequately invest in their health, education, and entrepreneurship. Recent progress has been driven by a new generation of financial services accessed via mobile phone and the internet. Decentralized digital currencies—empowered by their underlying blockchain technology—have caused quite a stir in the tech and financial community, and its potential for empowering financial inclusion is being tested globally.

Blockchain could have the potential to facilitate remittances for migrants seeking to transfer small amounts of money overseas; blockchain could provide a decentralized global bank account relieving financially excluded individuals from having to set one up with formal financial institutions; and blockchain could provide the basis for a richer set of financial services.

**T**ry to imagine living without access to any of the most basic financial services that many of us living in developed countries take for granted: no possibility to open a banking account, therefore no possibility to obtain a debit or credit card, to get a car loan or a mortgage, or any support to help get through a difficult month. It sounds hard, doesn't it? In essence, bank accounts constitute the first step toward financial inclusion.

Financial inclusion is the provision of access to appropriate, affordable, and accessible financial products and services to vulnerable and low-income individuals in a fair, sustainable, and transparent manner by institutional players<sup>1</sup> (*Reserve Bank of India, 2018*). Accounts allow individuals to store money and build savings for

the future. Savings expand investment possibilities, satisfy entrepreneurial goals, provide guarantees for children's education, and ensure adequate mitigation of financial shocks. Accounts allow the possibility of extending short-term micro loans to self-employed individuals and thus create opportunities for themselves as well as for their communities. Additionally, having access to bank accounts makes it easier to send and receive payments via remittances, which are cross-border person-to-person payments of relatively low value, typically recurrent within migrants<sup>2</sup>. Remittances act as a catalyst for financial inclusion; in 2017, remittance flows were larger than Official Development Assistance (ODA) and represented up to a third of several low-income country GDPs<sup>3</sup>. ➤

**"If we solve these large problems of financial inclusion it will be with new business models, technologies and innovations."**

**Roger Voorhies**  
**The Bill and Melinda Gates Foundation,**  
**2014.**

1 Reserve Bank of India, 2018  
 2 The World Bank, 2018  
 3 The World Bank, 2018

As of today, account ownership is universal in high-income economies, as 94 percent of adults hold an account; whereas in low and middle-income economies, this share is 63 percent. In 2017, The World Bank estimated that 1.7 billion individuals do not hold an account within a financial institution<sup>4</sup>. This segment of the population is referred to as the unbanked. The unbanked survive on less than two dollars per day and are mostly located in Africa, Asia, Latin America, and the Middle East. Not all who are considered as banked are equal. Alongside the unbanked, it is important to highlight the underbanked. This segment has limited or non-transactional access to financial services. The underbanked use money orders, check cashing services, payday loans, and other instruments offered through semi-formal or informal providers rather than traditional financial institutions or credit unions. Together these two segments account for 3.5 billion financially excluded individuals worldwide<sup>5</sup>.

The worrying landscape of financial inclusion is not limited to individuals only. Indeed, according to the International Finance Corporation, globally more than 200 million small and medium enterprises (MSMEs) in developing countries find it hard to access the traditional banking system<sup>6</sup>. MSMEs are crucial to economic growth and future development in emerging markets, as they contribute almost 50 percent of total employment and up to 33 percent of GDP<sup>7</sup>. Precisely, more than 40 percent of developing countries' MSMEs have encountered several obstacles and burdens in accessing a financial account<sup>8</sup>.

When governments and industry stakeholders are unable to provide inclusive financial systems, the world's poorest rely on their limited savings in cash, which is unsafe and difficult to manage. Non-inclusive financial systems contribute to alarming income inequalities and slower economic growth<sup>9</sup>. The question to ask

when looking at the positive effects of globalization and digitalization is: why are individuals and MSMEs in developing countries still financially excluded?

**The reasons for the unbanked and underbanked not having an account:**

- Geographical access to financial institutions is limited
- Insufficient funds to operate an account
- Financial services are too expensive relative to income
- Lack of necessary personal documentation (ID, passport, etc.) to formally open an account
- Family member already has an account
- Religious reasons
- Lack of trust toward financial institutions

Source: Global Findex Database, World Bank Group

**Unbanked population by region (%)**



**200+ million**  
Micro, small, and medium enterprises without access to banking services



**1.7 billion adults**  
Global Unbanked Population

This is alarming and calls for immediate action. A growing number of governments, foundations, and international institutions have shown their commitment to the advancement of financial inclusion, prioritizing this issue in their agendas. For example, the Bill & Melinda Gates Foundation has launched several initiatives to extend the access to financial services for the unbanked and underbanked, while the United Nations and its member states have indicated financial inclusion as a pivotal enabler for many of the UN's 2030 Sustainable Development Goals.

This observed recent progress in financial inclusion is driven by policies and initiatives that leverage digital solutions and allow for the proliferation of a new generation of financial services accessible via mobile phones and the internet. This has contributed to unprecedented levels of financial inclusion driven by mobile-based solutions (e.g., increasing account ownership). Brazil's former President Lula's *Bolsa Família* program reached one-third of the country's population, and provided financial assistance via digital payments into a card or bank account. Turning to the private sector, Vodafone's *M-Pesa* has revolutionized access to financial services since 2007, providing an entry-level e-payment platform to the Kenyan population.

Nevertheless, progress and change are far too slow. From 2014 to 2017, 300 million adults obtained a bank account<sup>4</sup>. While financial inclusion is on the rise in some economies, progress has been slower or has not affected segments of the population equally in others (i.e., large gaps persist between men and women). This means that there is still a vast amount of room for improvement for connecting people to formal financial services.

Why is financial inclusion still falling behind, notwithstanding the advent of mobile-based financial solutions?

Blockchain technology, or “distributed ledger technology,” is a record of transactions—money, goods, or data—like a traditional ledger.

Let us look at remittances, as they are of great necessity and value for the unbanked and the underbanked. The available options for money transfers come with three related burdens: high fees, long settlement times, and low usage. For instance, the average cost to send remittances from a Money Transfer Organization (MTO) or a bank in Sub-Saharan Africa is 9.48 percent (and in some countries, it can reach up to 10 percent)<sup>11</sup>. The current business model of remittances is based on electronic transfers over a legacy banking infrastructure. Moreover, national payment systems in developing countries are fragmented, inefficient and lack liquidity. Therefore, money transfers cost more.

As previously mentioned, M-Pesa provided a lifeline to many people and their economy; today, two thirds of Kenyans make use of it and 25 percent of Kenya's GDP flows through it. However, M-Pesa has many downsides in its current operating model. Firstly, it is not a frictionless service. Indeed, it is still running through traditional pipelines, remaining dependent

on the banking system's intermediaries and the related costs and fees. Secondly, Safaricom's agents deal with large amounts of cash daily, which makes the whole business model cumbersome and dangerous. Finally, importing funds into the M-Pesa system from overseas is not borderless and far from being instant.

#### The case for blockchain

The aforementioned limitations open a window to develop solutions tailored to the needs and social and cultural patterns of the unbanked and the underbanked. Developing countries and financial institutions that act now to increase financial inclusion through a supportive infrastructure are going to be in the right position to thrive in years to come. Blockchain stands tall and can be an accelerator for financial inclusion.

Blockchain technology, or “distributed ledger technology,” is a record of transactions—money, goods, or data—like a traditional ledger. In today's world, a central authority such as a government or a credit card clearinghouse, usually

4 The World Bank, 2018

5 First Data, 2018

6 The International Finance Corporation, 2018

7 The World Bank, 2018

8 The International Finance Corporation, 2018

9 The World Bank, 2018

10 The World Bank, 2017

11 The World Bank, 2018

verifies transactions. Blockchain replaces the need for a centralized system, as verification of transactions comes from the consensus of multiple users. Matching the openness of the internet with the security of cryptography, the disruptiveness of blockchain brings in potential opportunities for the global payment landscape to be more transparent, efficient, and frictionless. Blockchain has the potential to provide everyone with a faster and safer way to verify information and foster trust<sup>12</sup>. Let us explore how blockchain technology can drive financial inclusion.

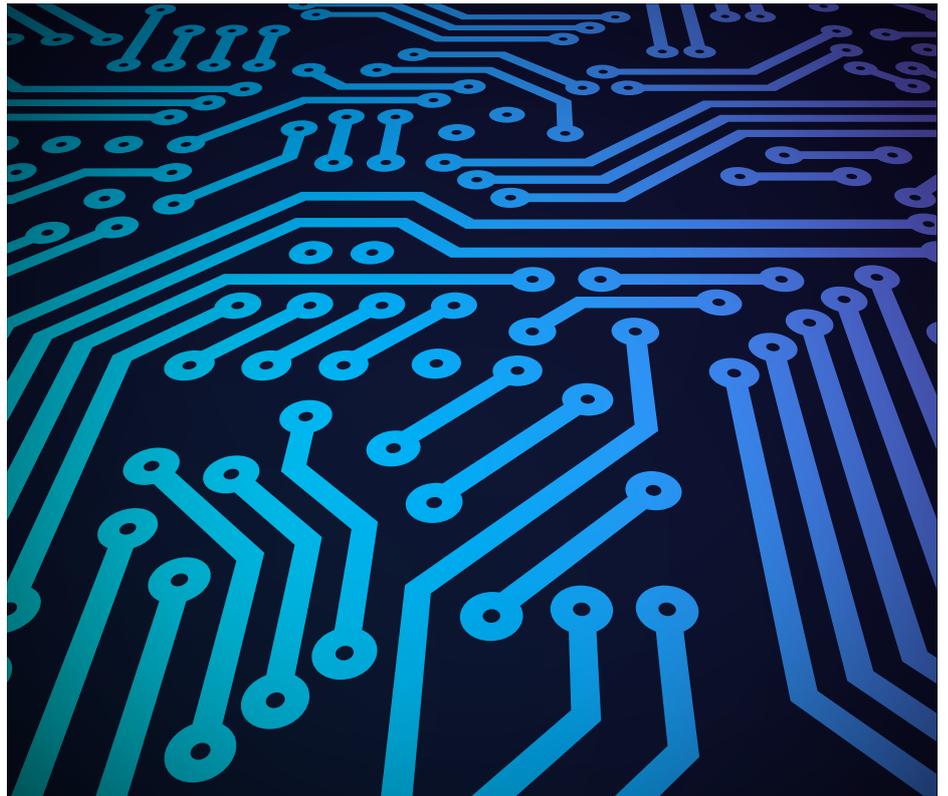
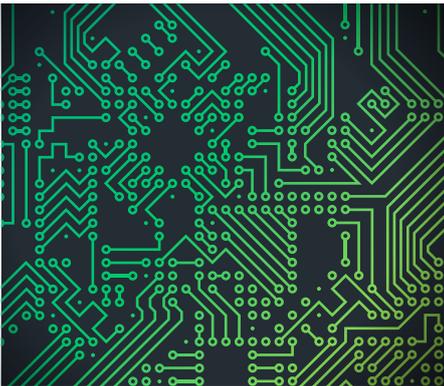
### 1. Blockchain addresses the high fees issue

Processing payments via national payment systems is often expensive and time-consuming. If fully adopted, blockchain can enable near-real time and accurate payments, thus reducing transaction processing costs. As highlighted before, blockchain can remove the costs and fees associated with clearing houses, credit and debit card providers, and banks, thus removing the need for all of the aforementioned third-party intermediaries. Moreover, blockchain-powered virtual currencies would allow the unbanked and

underbanked to send payments globally, constituting universal means of exchange. This frees individuals from paying currency fees while transferring money to different countries. Remittance users would not incur inter-exchange spreads, as the sender and the receiver will be able to agree to transact the same virtual currency<sup>13</sup>.

### 2. Blockchain facilitates the account opening process

Globally, 2.4 billion people do not have a digital identity, and this is one of the main issues preventing their access to financial institutions<sup>14</sup>. Working with identity solutions tools, blockchain can assist in creating a decentralized approach to identity management, and manage social and financial entitlements. For example, startup Humaniq's blockchain-based Ethereum app creates profiles based on biometric data, i.e., facial and voice recognition. Potential users are not required to have a passport or an email account. Individuals can use a smartphone to take a photo of themselves and record a video in which they make different facial expressions. Moreover, blockchain-powered solutions could help detect and prevent illegal behavior and



12 Goldman Sachs, 2017

13 The Irish Department of Finance, 2018

14 The World Bank, 2018

activities, thereby enhancing Know Your Customer (KYC) efforts and reducing the burden of time and costs associated with gathering personal information—a typically painful process for traditional financial institutions. Indeed, the immutability and transparency of blockchain could enable the creation and secure storing of clean and up-to-date customer data, leading to greater operational efficiency, increased trust, and a reduction of labor-intensive data gathering. Low cost transfers facilitated through blockchain can also be an incentive for account opening and can overcome the geographic challenges facing the unbanked and underbanked. In light of mobile phones’ high penetration levels, low and middle-income individuals will be able to open an account on their phone, and in so doing avoid the costs of traveling to a bank’s branch.

### 3. Blockchain reinforces trust

*The Economist* has defined blockchain as the machine for building trust. The real promise of blockchain technology is its clear and trustworthy value proposition, which fits the social and cultural practices of the unbanked and the underbanked. There is indeed no single authority controlling the ledger; the only rules are dictated by a “consensus protocol”—a mathematical algorithm that requires a majority of other computers on the network to agree on changes. This decentralized network, which relies on the collaboration of its participants, is somewhat reminiscent of the cooperative and consensual networks familiar to individuals from developing countries. Let us look at some concrete examples:

## CASE STUDY 1

### How cryptocurrencies are helping Filipinos to cut remittance costs and fees

The Philippines have gained the reputation as the Southeast Asian country with the largest number of overseas migrants. The Philippines is among the top five countries to receive remittances from overseas (US\$32.8 billion)<sup>15</sup>. Coins.ph converts remittances into cryptocurrencies such as Bitcoin or Ethereum prior to being sent to the receiver, who can then withdraw it as fiat currency. In this way, the need for intermediaries or third parties is removed.

The remittance business in the Philippines, through blockchain-powered cryptocurrencies, has reduced the costs and decreased the settlement times of remittance transfers worldwide. This process, in addition to lowering transaction costs, allows customers on both ends to continue to leverage the institutions they are used to. In 2018, Coins.ph celebrated a major milestone of serving five million customers since it was founded in 2014.

## CASE STUDY 2

### Tunisia’s national postal service leverages blockchain for national payment platform

Tunisia’s national post service provider, in collaboration with startups Monetas and DigitUS, has launched a pilot for a smartphone app based on cryptocurrencies originating a new national payment infrastructure. The app, which runs on Monetas’ crypto-transaction platform, will enhance money transfers and remittances. Moreover, it will allow Tunisians to pay their bills and manage their government ID documents.

Despite the illustrated potential for financial inclusion, distributed ledgers are a new technology, which implies new risks and possible negative externalities, as suggested by the following non-exhaustive list.

### Key challenges in blockchain infrastructure

The extent to which blockchain technology realizes its potential for financial inclusion will substantially depend on how well stakeholders steward its development. The continuously developing blockchain ecosystem is facing numerous key challenges:



#### Awareness and understanding

A lack of understanding of how blockchain works hampers additional investments and the exploration of ideas.



#### Regulation and governance

It is still unclear whether blockchain's applications could work within the existing regulatory landscape. The financial industry's regulators have to better understand the technology and its impacts.



#### Culture

Placing trust and authority in a decentralized network instead of a central institution could be unsettling and could require a more imaginative approach for understanding its potential.



#### Organization

Many organizations are developing their own blockchains and the related applications. The origination of many different standards is not efficient and hinders network effects.



#### Environment

Data on the high levels of energy consumption should prove quite depressing for anyone hoping for blockchain-powered cryptocurrencies to flourish and enter into wide-scale adoption for financial inclusion.



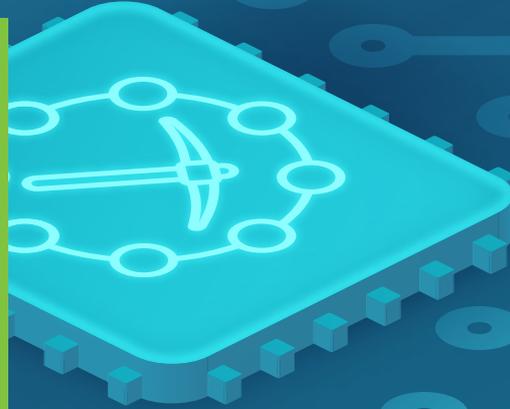
#### Scalability

It will take some time to get its scope of use right and to integrate it into existing infrastructures to shift the curve to broad adoption. Before being widely adopted, blockchain technology will need proof of concept.

## Conclusion

Given the value of global remittance flows (US\$466 billion in 2017<sup>16</sup>), the remittance business creates fruitful opportunities for the design of appropriate, affordable, and convenient financial products that could enable unbanked and underbanked individuals to send or receive remittances. It is estimated that the major participants and players of the payment industry could generate incremental annual revenues of US\$200 billion if they targeted financially excluded individuals and MSMEs in 60 developing countries<sup>17</sup>.

Blockchain technology can play a pivotal role when it comes to boosting financial inclusion toward the unbanked and underbanked, and there are significant opportunities on the horizon. However, the use of blockchain technology is still at an early stage, as there are serious challenges to its widespread adoption. In light of the importance of financial inclusion and the complex nature of the obstacles described, collective action from private sectors and government is required to provide innovative solutions within a sustainable and supportive ecosystem. Blockchain is not the sole answer, but it can be a game changer by accelerating and boosting financial inclusion. ●



16 The World Bank, 2017

17 The World Bank, 2018