

Innovation in Development Finance: Bitcoin and Crowdfunding

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Abstract

The internet impacts virtually everything around us, the first half of this decade has finally seen that impact extend to the financial sector. we discuss two recent innovations in financial technology - Bitcoin and crowdfunding - in relation to development aid. Many aspects of Bitcoin are very enabling, which provides the development sector with a powerful tool for the achievement of its aims. In this context we discuss i.a. remittances, mobile transactions, and barter currencies in times of financial crisis. Furthermore, potential uses in the development sector itself that we discuss are, accountability via the public ledger system, low threshold online funding, due to the pre-paid nature, and a lesser reliance on local governments.

1 Introduction

Bitcoin is an online decentralised monetary system, which aims to cut out many of the middle men in the financial system, specifically governments and banks. Bitcoin is set up to be completely anonymous and decentralised, the originator as a whitepaper "Bitcoin: A peer-to-peer electronic cash system" published under the pseudonym Nakamoto (2008).

The ownership of bitcoins is registered in the public ledger called the blockchain, and can be proven by publishing a signature online, using a secret key. This means that transactions can be conducted from any computer or smartphone with internet access without a third party being needed.

There are many uses for this type of a monetary system, in fact the aim of the Bitcoin foundation, is to do to the financial industry, what the internet did to the publishing industry. In this article we will focus on the uses particular to development aid.

In the next section, we discuss the mechanics behind the Bitcoin system in some more detail, with examples specific to development aid. Subsequently, we list some of the key potential uses of Bitcoin in the development. In section four we discuss Crowdfunding and how it relates to the development sector. We pay some further attention to the economics behind bitcoin and how this

relates to development aid in section five. We conclude with a discussion on the key challenges for widespread use of bitcoin in development and some recent innovations with potential uses in the development sector.

2 How does Bitcoin work?

It is useful at this point to make the distinction between Bitcoin (capital B), which is the entire system, and bitcoin (miniculus b), which is the dominant unit of account, similar to a swiss franc or a euro.

All transactions in the bitcoin system are stored in a public ledger, called the blockchain. It includes the amount, the sending and receiving addresses, as well as an optional message. Since all transactions are public (though the addresses are anonymous), it enables indefinite tracking of flows. This can increase accountability and prevent leakages.

3 Potential Uses of Bitcoin in Development

There are many (potential) uses of Bitcoin in the development sector. An obvious first for a truly global and location independent monetary system is remittances. Transactions are virtually of costs, and distance plays no role. The only requirement here would be that there exists a market where Bitcoin can be traded for local currency, which is true for virtually all currencies.

However, even if such a market would not exist, there is to potential for communities to accept bitcoin as tender, in addition to the existing forms. In particular, mobile payment systems using either smartphones or sms-based systems would make this particularly convenient.

4 Crowdfunding and Bitcoin

A further innovation in the finance industry is crowdfunding. In a crowdfunding campaign an idea is described and the public is asked to 'donate' an amount in order to make it come true. Depending on the amount 'donated' this can unlock certain perks, such as: a thank you on social media, mentioning on the website or a physical or digital copy of the final product, e.g. the Peddle smartwatch. Many of these campaigns have goals that involve social development, such as the Keepod campaign. Which aims to create usb key which contain an operating system that can be loaded direct from the USB key, for people who do not own a computer. Contributors in this campaign could donate money, for each key that was ordered, an additional key was given to slumdweller in Nairobi.

Generally these campaigns are organised through established platforms such as Kickstarter or Indiegogo. There are several reasons for this, firstly, payment is often via creditcard, which means that the institution has to be trustworthy. Since Bitcoin operate on a sort of pre-paid model, such as paypal, it enables the customer to contribute without surrendering sensible information. A good

example of a crowdfunding initiative that uses Bitcoin, is called "Bitcoin against Ebola", which provides books and lunches for children living in affected areas.

A variation on crowdfunding is the relatively recent phenomenon of internet tipping, like its real world counterpart, a good deed, comment or idea is rewarded (after the fact) with a tip. By operating on a pre-paid model, tips can be given to total strangers, who otherwise would perhaps not be trusted with this sensible information.

5 Economics of Bitcoin

In the context of Bitcoin, the discussion of where its value derives from and the fact that it is not legal tender.

The discussion on its value is a complicated one, outside of the scope of this article. We will however make two observations:

1. Bitcoin has sustained a large and positive value over a sustained period of time
2. Most transaction methods, have no intrinsic value, fiat currencies, but even gold has very little

For a further discussion of Bitcoin and its value see Ron and Shamir (2013).

The issue of legal tender is quite different. Legal tender means a state imposing a method of transaction (that it controls) within its territory. This has the positive effect that it unifies accounting. However, if the state does not manage the currency in a credible fashion, then this will lead to hyperinflation. This in turn will lead to capital flight. A recent example in Argentina, which, at the time of writing, taxes all foreign credit card purchases with an additional 35%. By having a system without a single owner, this is rendered impossible. The Argentinian case further illustrates how Bitcoin can be used in times of economic crisis. During each of the currency crises that hit Argentina during the last decades, barter currencies arose. These provide a more stable means of holding value than government sanctioned money. By having a barter currency with a value outside the country (which can be quoted in US dollar), additional stability can be added.

6 Challenges and Future

What are the challenges

- acceptance
- ways to enable widespread use (sms transactions)

What lies ahead

- alternative cryptocurrencies, reduce dependence

References

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