

5 ways digital currencies will change the world

By [Susan Athey](#)

Jan 22 2015

When I look at digital money, I see a revolutionary technology that allows people or institutions to transfer funds instantly, securely and without a middleman. Digital money can potentially expand international commerce, support financial inclusion, and transform how we shop, save and do business in ways we probably cannot even yet fully understand. From programmable money to new forms of e-commerce, here are five ways the new technology will change the world:

1. Faster, cheaper bank transfers

The way banks move money today is archaic. International bank transfers can take up to a week, with correspondent banks and country-specific clearing houses involved at both ends. Even the cross-border sharing of payment data faces challenges and frictions. By using a digital currency such as [bitcoin](#), bank transfers could be made instantly, cheaply and safely. In fact, such transfers could even happen without using new currencies. Ripple Labs, for which I am an adviser, supports a protocol that allows clients to transfer funds from one currency to another (say, dollars to euros) using a secure digital ledger. Their technology moves money around the globe in seconds by first finding the most efficient path between trading partners, where the path might consist of a series of transactions among foreign exchange traders who have accounts in a variety of banks, and then confirming all required transactions simultaneously.

2. A boost to global remittances

Every year, migrants from developing countries send home more than \$500 billion in remittances, a sum that exceeds foreign direct investment. With total fees for international transfers averaging 6-10% for sending \$200, the burden on some of the world's most vulnerable people is substantial. Technology has the potential to help these transfers become fast and cheap. Using virtual currency, private users could even send money directly to their families via mobile phone, with the only remaining fees being those charged by the currency exchanges. While traditional money transfer companies have to carry capital to compensate for delays in international money movement, capital requirements are much lower for firms using digital currencies. Of course, capital carrying costs and the cost of money movement comprise only part of the cost for remittance businesses. Nonetheless, reducing these costs might make it easier for smaller players to enter and establish new remittance corridors or for existing players to serve smaller towns or new countries.

3. Safe money for the poor

The explosion of mobile technology in Africa has already shown that developing countries can lead when it comes to sophisticated technology. Estimates suggest that 60% or more of commerce in Kenya takes place using mobile phone credits as a medium of exchange. Anyone with a mobile phone can store money there, and send credits to another user. The problem is that the fees are large: cashing out has historically cost as much as 20%, although the widespread acceptance of the credits means that many consumers are able to spend the credits directly without incurring large fees. Digital currencies could become another convenient and safe form of payment in countries where most citizens don't have bank accounts. While using bitcoin as a second currency in a country would expose citizens there to a certain amount of currency risk, it might be better than the existing options, particularly in high-inflation countries. For example, it would be physically safer than storing cash at home or buying gold jewellery. In addition, someone holding bitcoin could exchange it for a more stable currency on one of the global bitcoin exchanges. In this way, it could expand access to international financial markets, allowing even the unbanked a way to save and protect against inflation. One implication may be that capital controls become harder to enforce.

4. Unleashing the potential of e-commerce

Today, concerns over credit card fraud are forcing many online merchants to turn away good business. Such fraud is more common in global transactions, and so many firms do not accept international payments. With a digital currency such as bitcoin, the transfer cannot be undone once it has been made. This eliminates the risk of fraud for merchants and thus allows them to sell worldwide. And since virtual currencies let customers send funds as easily as email, online shopping would turn into a much smoother process. Digital currency could also allow small businesses in developing countries to engage more in global e-commerce. Latin American vendors could sell hand-crafted goods globally, Chinese teenagers could offer Mandarin tutoring over Skype, and African firms wanting to market their products through online advertising marketplaces would have a payment option that is unavailable today. Small value transactions are a particularly salient use case, as low transaction fees could enable low-value in-app purchases or micro-payments for reading online news articles from media outlets around the globe.

5. Programmable money and smart contracts

Once an asset is purely digital, it can be moved in automated ways. This paves the way for “programmable money” and “smart contracts”. One practical example would be [escrow accounts](#). Such accounts are already used in large transactions, such as property deals. The buyer puts money into escrow, and it only goes to the seller when he or she hands over the title to the property. In the digital age, where the issue of trust can be a key impediment for individuals wishing to transact at arm's length, this system could be used for much smaller sums. Another example is [multisig](#), where money can only be disbursed from an account when multiple individuals authenticate. This could be used to prevent the theft of digital funds, but it could also help firms ensure that money is not “lost” or stolen when it moves across borders, between divisions of a firm, or among charitable organizations and contractors in developing countries.

Programmable money could also have a role in much more complex contracts, such as financial contracts involving multiple parties and complex derivatives. You might put some money in a financial contract which will pay out according to what happens to certain stock prices. A computer program could be linked to stock prices from the Bloomberg terminal feed and then, depending on what happens to certain stocks or certain combinations of stocks, different individuals receive funds.

Author: Susan Athey is The Economics of Technology Professor at the Stanford Graduate School of Business.

Image: Bitcoins created by enthusiast Mike Caldwell are seen in a photo illustration at his office in Sandy, Utah, September 17, 2013. REUTERS/Jim Urquhart

Posted by [Susan Athey](#) - 09:41

All opinions expressed are those of the author. The World Economic Forum Blog is an independent and neutral platform dedicated to generating debate around the key topics that shape global, regional and industry agendas.