

## cyberlaw: the brave new e-world



By Anne F. Downey

## Bitcoins

A bitcoin is a form of virtual currency. Bitcoins are just one of numerous virtual cryptocurrencies; others include Dogecoin and Litecoin.

Bitcoins were created by a developer (or developers) who operated under the pseudonym Satoshi Nakamoto. The first open source bitcoin wallet launched in 2009. Since then, a group of developers have maintained and improved the software. The technology is called Bitcoin, and the units of currency are called bitcoins.

The first batch of distributed bitcoins was called the Genesis Block, and additional bitcoins have been distributed by “mining,” i.e., completing increasingly complex math problems to verify existing transactions. Transactions are processed in “blocks” (groups), in return for which miners earn bitcoins. When the bitcoin was created in 2009, each 10-minute processing block paid 50 bitcoins (plus transaction fees). The number of bitcoins paid per block is halved every four years.

The last bitcoin will be created in 2140, at which time 21 million bitcoins will be in circulation. Currently, there are about 12 million bitcoins in existence. The system is structured so that the value increases over time as demand rises for the limited supply of bitcoins. Because of escalating value, fractional bitcoins - called “satoshis” - are used for smaller purchases. Meanwhile, Satoshi Nakamoto, who retains a sizeable stash of bitcoins, is now a virtual millionaire.

A person wishing to purchase bitcoins must first obtain a bitcoin wallet by downloading an app. Different types of wallets have various levels of security (and no protection is available under FDIC insurance). Once a wallet is obtained, the person can go to an exchange like Tokyo-based Mt. Gox (MtGox.com), where real money is traded for bitcoins. (It is not pos-

sible to purchase bitcoins via PayPal but, oddly enough, PayPal can be used to buy SecondLife Lindens, which can be used to purchase bitcoins.)

The price of bitcoins can fluctuate rapidly. For example, in 2011 the value of the bitcoin fluctuated between 30 cents and \$32.00. The price reached an all-time high of \$1,242 on November 29, 2013. As of February 21, 2014, the price was \$561.80.

### Anonymous Bitcoins are “Electronic Cash”

Bitcoins can be used to purchase goods and services online, and some brick and mortar retailers accept them. Merchants like the fact that, unlike credit card transactions, there are no merchant fees. Also, unlike credit card transactions, bitcoin transactions are irreversible.

Purchasers like the fact that, unlike credit cards, their bitcoin transactions are anonymous. No personal identification data accompanies a bitcoin; in that regard, a bitcoin is like electronic cash. Also, there is no risk of a data breach like the one that recently occurred with credit and debit cards swiped at Target stores. But the downside is that a purchaser may transmit a bitcoin payment and never receive the goods or services. As noted, a bitcoin transaction is irreversible.

Let’s suppose you want to purchase goods from Ye Olde Bitcoin (YEB), an antiques dealer. Both you and YEB have a pair of cryptographic keys, one public and the other private. YEB will ask you to send payment to its public address (its public key). You transfer bitcoins from your wallet to the YEB address, and your bitcoin app signs the transaction with your private key and sends it on its way. The transaction is broadcast to the Bitcoin network (a Peer-to-Peer network running on users’ computers) and is verified. The bitcoins are

transferred from your address to the YEB address. Although your identity is not publicly revealed, the transaction record or “block chain” is public, which prevents duplicate spending.

Because bitcoin transactions are anonymous, they have become a favored currency for illegal purchases. Bitcoins were the currency used at SilkRoad.com, a hidden online marketplace where drugs, child porn, firearms and stolen credit cards were sold. In October 2013, the FBI shut down Silk Road and arrested Ross Ulbricht, the alleged operator of the site, on charges of drug trafficking, soliciting murder, computer hacking, money laundering and conspiracy. (A Silk Road 2 was soon in business to take the place of the deactivated Silk Road site.) The U.S. government seized almost 30,000 bitcoins from the SilkRoad.com site and also 144,326 bitcoins from Ulbricht.

Many suspect that Ulbricht is the infamous leader of Silk Road known as the “Dread Pirate Roberts.” You may recall that name from the 1987 film “The Princess Bride” in which the Dread Pirate Roberts was a pirate feared across the Seven Seas. As noted in Wikipedia, during the course of the movie, it was revealed that Roberts was “not one man but a series of individuals who periodically pass[ed] the name and reputation to a chosen successor. Everyone except the successor and the former Roberts [was] then released at a convenient port, and a new crew [was] hired. The former Roberts stay[ed] aboard as first mate, referring to his successor as ‘Captain Roberts,’ thereby establishing the new Roberts’ persona. After the crew [was] convinced, the former Roberts [left] the ship and retire[d] on his earnings.” Naturally, when Ulbricht’s reign over Silk Road ended, the leader of Silk Road 2 was nicknamed the “Dread Pirate Roberts.”

Silk Road 2 has run into some problems lately. On February 13, 2014, Silk Road 2’s escrow accounts were compromised through a vulnerability in Bitcoin’s protocol called “transaction malleability.” While the site remains online, all bitcoins in the escrow accounts, valued at \$2.7 million, were reported stolen.

Mt. Gox, once the largest bitcoin exchange, has also had problems. The exchange faced a hacking attack in 2011. In 2013, Mt. Gox twice suspended trading to let the market cool down. In February 2014, Mt. Gox

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faced widespread criticism that users were unable to withdraw funds, and ultimately Mr. Cox officially suspended withdrawals “for technical reasons.” It is unknown when Mr. Cox will resume trading.

A number of U.S. law firms, including at least two in New York, have begun accepting bitcoins as payment. Although an Israeli ethics opinion allows lawyers to accept bitcoins as payment for legal services, I am not aware of any U.S. ethics opinions on the subject. A firm needs to consider issues such as whether to immediately convert the bitcoins to dollars, whether to pay refunds in dollars, and whether any laws might be implicated. For a review of federal laws possibly relevant to a bitcoin transaction, see <http://www.fas.org/sgp/crs/misc/R43339.pdf>.

The author wishes to thank Jordan Wallbesser, Esq. for his assistance with this article.

*In Memoriam*



*“Grieve not, nor speak of me with tears, but laugh and talk of me as if I were beside you there.”*  
~ Isla Paschal Richardson

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