

EXPERT ANALYSIS

The Exciting Present and Uncertain Future Of Bitcoins and Digital Currency

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The bitcoin phenomenon is a regular fixture on the front pages of the business and technology press, often predicting the impending doom of bitcoin. For example, much attention has been paid to the collapse of the former top bitcoin exchange, Mt. Gox, stemming from the purported theft of nearly \$500 million in bitcoins. Many predicted that Mt. Gox was the beginning of the end of bitcoin, just as similar-sounding doomsayers predicted the digital currency's demise during the dramatic spring 2013 bitcoin crash.¹

The temporary suspension of trading in the securities of one technology company producing a mobile bitcoin platform also caught the public eye, feeding bitcoin skeptics.² Similarly, the rash of cyberhacking incidents against digital wallet services has been prominently featured in the news this past winter.

Amid all this adverse publicity and talk of speculative bubbles, surprisingly or not, the growth of bitcoin continues. The acceptance of bitcoin by major merchants and e-commerce sites continues to expand. The pace of "smart money" capital investment in bitcoin-related startups is increasing. And, from July 2013 to March 2014, bitcoin activity has increased from about 1,700 transactions per hour to around 2,900, with the market capitalization of the bitcoins in circulation over the same period increasing from around \$1 billion to \$7.9 billion.

WHAT IS BITCOIN?

Probably the first mention of bitcoin was in a 2008 white paper penned under the name of Satoshi Nakamoto.³ Nakamoto has never been definitively identified, and the person who created the bitcoin software is unknown. (A recent report by Newsweek suggesting that it identified Nakamoto is viewed with a fair degree of skepticism.⁴) Many believe that Satoshi Nakamoto is actually a pseudonym for a team of people who created the bitcoin protocol.

The Nakamoto paper describes bitcoin as a peer-to-peer electronic cash system designed to bypass financial institutions. The bitcoin software is "open source," and the system operates without the involvement of any traditional financial institutions. Bitcoin, unlike the dollar and other national currencies, is not government-backed legal tender, and its supply is not determined by a central banking authority.

Bitcoin is commonly referred to as a cryptocurrency because it relies on the principles of cryptography to validate transactions and to govern the production of the currency itself. Each bitcoin and each user's digital address is encrypted with a unique identity and each transaction is recorded on a decentralized public ledger called a "block chain" that is visible to the world.

However, despite the public nature of the block chain, no personal information about the parties involved in a transaction is revealed. This public ledger, the block chain, is validated through the bitcoin "mining" process (described below), and through that process, the system confirms that



the buyer has the amount of bitcoin being spent and has transferred that amount to the account of the seller. The system is designed to obviate the need for a trusted third party (such as a bank or credit card company) to verify the integrity of electronic transactions.

HOW DO YOU GET BITCOINS?

There are three ways to obtain bitcoins:

- Buying them from an online exchange.
- Accepting bitcoins in lieu of traditional currency for goods or services.
- Bitcoin mining.

Online exchanges

Through an online exchange, users can convert traditional currency to bitcoins for a commission, based upon the current market “buy” price of bitcoins on that exchange. (Currently, the price of bitcoins varies by exchange, presenting obvious arbitrage opportunities.) The price of bitcoin on an exchange can be volatile. For example, the price recently moved from around \$200 per bitcoin in November to above \$1,100 in early December and back down to around \$500 in April. A bitcoin holder can also exchange a bitcoin for a national currency based on market “sell” values at the time of the exchange, also for a commission.

Currency for goods and services

An individual or company can also obtain bitcoins in exchange for the sale of goods or services, such as a merchant accepting bitcoin from a customer. Upon acquisition, bitcoins are stored in a digital wallet on the user’s computer, offline device, mobile phone or online wallet service. Some merchants concerned about volatility in values alleviate that risk by converting bitcoins to currency shortly after obtaining them.

Bitcoin mining

Hobbyists and entrepreneurs can also earn bitcoins through a process called “mining.” Mining is the process through which bitcoin transactions are validated. Miners download software, which is used to solve extremely complex mathematical problems, to verify the validity of past bitcoin transactions. Miners are rewarded for these efforts with some number of bitcoins.

The probability of an individual earning bitcoins through mining is proportional to the amount of computer processing power applied, with miners now forced to run elaborate bitcoin mining hardware to attempt to earn new bitcoins. About 25 bitcoins are created through this process every 10 minutes. This amount will decrease over time, in a process that seems intended to resemble the mining of gold, where value is derived from effort and scarcity. By design, there will be a maximum of 21 million bitcoins in circulation (there are now over 12.6 million in circulation), with the last to be mined in 2140.⁵

RISKS AND BENEFITS

Hailed by some as the future of money, and vilified by others as a speculative vehicle for illicit transactions, bitcoin’s possibilities compel both merchants and regulators to weigh the risks and benefits of bitcoin and other digital currencies. Among the primary benefits of bitcoin is the ability to move the currency quickly, cheaply and privately. Bitcoin may be transferred across the globe almost cost-free to anyone with an electronic wallet and Internet connection; digital currency may also be an attractive alternative to unstable domestic currencies.

However, bitcoin’s freewheeling nature and lack of any central authority leave it prone to volatility, often exacerbated by external factors such as the impacts from government restrictions or hacking incidents. In addition to volatility, cybersecurity is an ever-present concern. In fact, dozens of instances of theft already have been reported, often leaving victims without recourse. Perhaps the most widespread criticism of bitcoin is that it enables cross-border illegal transactions,

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including the online sale of drugs and illicit services, spurring regulators and law enforcement to adapt to the new technology.

RECENT REGULATION

To date, domestic regulatory actions and statements from regulatory authorities reflect a sentiment that U.S. authorities will not seek large-scale restrictions on bitcoin transactions, although money laundering and fraud will not be tolerated. A number of regulatory agencies have taken some initial actions, yet the future regulatory landscape remains unclear.

The Treasury Department's Financial Crimes Enforcement Network, the Securities and Exchange Commission, the Department of Homeland Security, the Justice Department, the Federal Election Commission, the Government Accountability Office, and the Internal Revenue Service, as well as a number of state agencies, including the New York Department of Financial Services, have taken various steps to address virtual currency. Senate committees and the NYDFS have held detailed hearings, and a handful of foreign governments also have expressed their positions. Additionally, the Financial Industry Regulatory Authority, the country's largest independent securities regulator, recently provided some guidance to investors about bitcoin and other digital currencies. Below are some notable actions:

FinCEN

In March 2013 the Financial Crimes Enforcement Network issued a guidance (FIN-2013-G001) clarifying that anti-money-laundering regulations concerning recordkeeping and recording apply to digital currency exchanges: "An administrator or exchanger that (1) accepts and transmits a convertible virtual currency or (2) buys or sells convertible virtual currency for any reason is a money transmitter under FinCEN's regulations, unless a limitation to or exemption from the definition applies to the person."

The guidance further stressed that the definition of a money transmitter does not differentiate between real currencies and convertible virtual currencies. Thus, under FinCEN's guidance, a bitcoin exchange that allows users to buy bitcoin with real currency and sell bitcoin for real currency must file as a money services business with FinCEN. The guidance noted, however, that a user who simply obtains virtual currency and uses it to purchase real or virtual goods or services is not an MSB under FinCEN's regulations.

Moreover, in a subsequent ruling issued Jan. 30 (FIN-2014-R001), the agency clarified that an entity that mines bitcoin and uses it solely for its own purposes and not for the benefit of others is not an MSB under FinCEN's regulations. The agency further stated that such is the case whether the miner is an individual or a corporation, and whether the miner is purchasing goods or services for its own use, paying ordinary business debts or (in the case of a corporate miner) making distributions to shareholders. FinCEN has taken at least one enforcement action against a bitcoin exchange based on failure to satisfy regulatory requirements.⁶

SECURITIES AND EXCHANGE COMMISSION

In an investor alert, the SEC stated that "any investment in securities in the United States remains subject to the jurisdiction of the SEC regardless of whether the investment is made in U.S. dollars or a virtual currency."⁷ This interpretation was echoed in *Securities and Exchange Commission v. Shavers*,⁸ where the court ruled that it had jurisdiction under the Securities Act of 1933 over a case involving allegations of a bitcoin-based Ponzi scheme because investments bought with bitcoins satisfied the definition of an investment contract and were "securities." To that end, the Winklevoss twins, Cameron and Tyler, of Facebook fame, filed a registration statement on Form S-1 with the SEC for the creation of an exchange-traded fund that would allow parties to invest in bitcoin without actually purchasing and storing it. However, the SEC has noted that a rule change would first be required to permit such a listing.

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Justice Department

The Justice Department has pursued at least two actions against the alleged operator of the rogue website Silk Road and related parties for, among other things, narcotics conspiracy and money laundering with bitcoin.⁹ Silk Road was designed to enable users to buy and sell illegal drugs and other unlawful goods and services anonymously and beyond the reach of law enforcement.

Internal Revenue Service

In March the IRS issued a guidance advising that, for federal tax purposes, digital currency would be treated as property, not as a foreign currency. It also said, in general, the sale or exchange of convertible digital currency, or the use of it to pay for goods or services, has tax consequences. Users, speculators, bitcoin miners and service providers should keep careful records of bitcoin transactions and must resolve various accounting issues, such as how to determine the fair market value of digital currency at the date of payment or receipt and how to apply existing tax laws to bitcoin mining pools that involve multiple users or entities not necessarily in a formal partnership.¹⁰

New York Department of Financial Services

In late 2013 the New York Department of Financial Services conducted a series of hearings into virtual currency firms to determine what state regulation, if any, was appropriate. While law enforcement officials recommended regulation to increase transparency, investors and bitcoin service providers urged restraint to protect the nascent market. Regulators have hinted that they may develop so-called bit licenses for digital currency operators to conduct business in New York, and in March, the NYDFS began accepting formal proposals to operate digital currency exchanges and other related services in the state in conjunction with the agency's establishing its oversight of the emerging industry.

FINRA

In March the Financial Industry Regulatory Authority issued an alert to caution investors of the "significant risks" of buying and speculating in bitcoin and other digital currencies, as well as the risk of fraud and cybercrime related to online bitcoin exchanges and other bitcoin-related service providers.

RELEVANT ISSUES FOR MERCHANTS

How can a merchant accept bitcoin? Typically, for "brick and mortar" sales, customers paying with bitcoin can use a smartphone to scan a QR code representing the merchant's bitcoin wallet. Alternatively they can enter the vendor's bitcoin wallet address into their bitcoin payment app. E-commerce shoppers can also pay via bitcoin by using a site's hosted bitcoin checkout, which displays the current exchange rate, the amount of the sale in bitcoins and a digital wallet address where the bitcoins will be transferred. The user can then click to transfer the bitcoins from his or her digital wallet and await confirmation.

The principal benefit that a merchant obtains from accepting bitcoin is lower transactional costs than payment cards or existing online money transfer services, as the cost of conducting a bitcoin transaction is minimal. This can be particularly important to businesses with low profit margins. (Note, however, depending on which exchange is used, the commission for currency conversion — converting the bitcoins into real currency — can be significant.) Businesses that only accept bitcoin also avoid costs that come with accepting payment cards, such as compliance with the Payment Card Industry Data Security Standards, which apply to merchants who accept payment cards and store, process or transmit cardholder data.¹¹

Additional benefits include:

- **Marketing:** Bitcoin may attract a tech-forward clientele and create an online "buzz" that draws new customers who enjoy the novelty of digital currency or perhaps have new-found digital wealth since the bitcoin boom.

- **Investment opportunity:** Companies that accept bitcoin may decide to hold it as a speculative investment. By accepting payment in bitcoin, they avoid the commission charged by an exchange for the purchase of bitcoins.
- **International transactions:** Bitcoin is the most efficient and cost-effective method to transfer money abroad.
- **Privacy:** Data security concerns aside, unlike a credit card transaction, a bitcoin transaction does not involve the disclosure of any consumer personal information that can be used to facilitate future theft.

However, given the “Wild West” nature of bitcoin and the real risk of cybertheft, merchants should carefully consider the risks:

- **Value and volatility:** Because there is no governmental backing for bitcoins, the value received by a merchant is purely a function of supply and demand at any particular moment. Thus, a merchant that accepts bitcoin runs the risk that the currency could lose all or some of its value. In any case, bitcoin has already demonstrated high volatility in value, and merchants that accept and hold the cryptocurrency are likely to see the value of their holdings fluctuate widely.
- **Bitcoin storage:** Like any electronic information, bitcoin is susceptible to data loss, hacking or file corruption. Merchants maintaining a balance of bitcoins might consider using services that offer offline reserves or “cold storage” of bitcoins on hard drives unconnected to the Internet. For example, earlier this year, Flexcoin, a bitcoin bank, was hacked, looted and forced to shut down, but users who opted to store bitcoins in Flexcoin’s cold storage were able to take steps to recover their currency.
- **Data security:** Merchants must examine the terms of service when signing up with a bitcoin infrastructure provider, particularly examining the security claims and limitations-of-liability provisions. For example, Flexcoin’s terms of service were clear as to the risk of theft: “We have taken every precaution to defend your bitcoins from hackers and/or intruders. However, Flexcoin Inc. is not responsible for insuring any bitcoins stored in the Flexcoin system. You agree to not hold Flexcoin Inc., or Flexcoin Inc.’s stakeholders, or Flexcoin Inc.’s shareholders liable for any lost bitcoins.” In most cases, other bitcoin service providers will have similar terms, but others offer limited assurances of precautions against theft. In the future, this may become a point of distinction between service providers, and merchants may want to consider this when selecting a provider.
- **Accounting and taxation:** The tax treatment of bitcoin transactions as investment has been cleared up to some extent by the recent IRS guidance. Still, merchants should evaluate the tax implications and additional accounting burdens of accepting bitcoin payments, as well as the taxation treatment of bitcoin speculation.

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CONCLUSION

Where is it all headed? Digital currencies may present exciting opportunities for businesses, but new issues and concerns will follow. There is no shortage of unanswered questions already: How will state or federal agencies regulate bitcoin, and how will such regulation affect the bitcoin economy? Will volatility and data security lapses eventually destroy confidence in bitcoin and chill speculation, or will bitcoin persevere and gain more legitimacy? Will bitcoins open up new e-commerce opportunities, including new remittance options in developing countries without well-established banking systems? Will bitcoin emerge as a standard payment option adopted by more and more merchants or even traditional payment processors?

To be sure, bitcoin has remained resilient in the face of uncertainty and security breaches, but it remains to be seen whether bitcoin will evolve into an enduring electronic payment alternative or remain a niche payment option.

NOTES

- ¹ See, e.g., Michael Lewis, *'The end of Bitcoin'? Major online exchange Mt. Gox goes bust*, TORONTO STAR, Feb. 25, 2014, available at http://www.thestar.com/business/2014/02/25/major_online_bitcoin_exchange_mt_gox_vanishes.html; Eric Posner, *Fool's Gold*, SLATE, Apr. 11, 2013.
- ² See Sec. & Exch. Comm'n, Release No. 71568 (Feb. 19, 2014), available at <http://www.sec.gov/litigation/suspensions/2014/34-71568.pdf>.
- ³ See Katherine Rushton, *Unmasking of Bitcoin creator Satoshi Nakamoto throws up more questions than answers*, THE TELEGRAPH, Mar. 6, 2014, available at <http://www.telegraph.co.uk/finance/currency/10681787/Unmasking-of-bitcoin-creator-throws-up-more-questions-than-answers.html>. Satoshi Nakamoto's white paper, "Bitcoin: A Peer-to-Peer Electronic Cash System," is available at <https://bitcoin.org/bitcoin.pdf>.
- ⁴ See Leah McGrath Goodman, *The Face Behind Bitcoin*, NEWSWEEK, Mar. 6, 2014, available at <http://www.newsweek.com/2014/03/14/face-behind-bitcoin-247957.html>.
- ⁵ See Anthony Volastro, CNBC Explains: How to Mine Bitcoins on your Own, CNBC, Jan. 23, 2014.
- ⁶ See e.g., *In re Seizure of the Contents of One Dwolla Account*, No. 13-1162, search warrant issued (D. Md. May 14, 2013) (online payment account of Mt. Gox U.S. subsidiary seized for failure to file with FinCEN as an MSB).
- ⁷ See Sec. & Exch. Comm'n, "Investor Alert: Ponzi Schemes Using Virtual Currencies" (July 2013), available at https://www.sec.gov/investor/alerts/ia_virtualcurrencies.pdf.
- ⁸ No. 4:13-cv-416, 2013 WL 4028182 (E.D. Tex., Sherman Div. Aug. 6, 2013).
- ⁹ See *United States v. Ulbricht a/k/a "Dread Pirate Roberts," a/k/a "DPR," a/k/a "Silk Road,"* No. 14-068, indictment filed (S.D.N.Y. Feb. 4, 2014); *United States v. Faiella*, No. 14 -0164, complaint unsealed (S.D.N.Y. Jan. 24, 2014).
- ¹⁰ Internal Rev. Serv., Notice 2014-21 (Mar. 25, 2014), available at <http://www.irs.gov/pub/irs-drop/n-14-21.pdf>.
- ¹¹ See generally https://www.pcisecuritystandards.org/security_standards/getting_started.php.



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