ARNOLD & PORTER LLP

BITCOINS: THEIR FUTURE IN WORLDWIDE COMMERCE

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WHAT IS BITCOIN?

- Has been called "digital cash"
- Essentially just a snippet of code based on an algorithm first identified in the "Nakamoto White Paper"
- It is based on an open source computer program that no single person can modify
- It is created by "mining," which involves downloading and solving bitcoin program

NAKAMOTO WHITE PAPER

- The self-published paper was authored in 2008 by “Satoshi Nakamoto,” a fictitious name for one or more computer geeks

CHARACTERISTICS OF BITCOIN

- No central computer, no central office
- Only 21 million bitcoins can ever exist (although can be divided into hundredth millions)
- Since bitcoin is just computer code, it is oblivious to laws and borders
- Pseudonymous: every transaction is recorded in the "blockchain," but no actual names are used

KEY TO BITCOIN: THE BLOCKCHAIN

- Blockchain is a data file that tracks creation and history of every bitcoin, time-stamped
- Blockchain cannot be altered, hence no possibility of duplicate bitcoins or double-spending
- Flaw in Blockchain surfaces in February 2014; requires design “tweak”

LANDMARKS IN BITCOIN DEVELOPMENT

- 2009 — “Bitcoin Network” is established and first bitcoins are issued
- February 2013 — Coinbase (an international digital “wallet”) reports selling one million dollars in bitcoins in one month
- August 2013 – Phoenix Fund invests $200 million in manufacturer of servers used in mining bitcoin

MORE LANDMARKS

- February – December 2013: value of one bitcoin rises dramatically from $22 (February) to $441 on Mt. Gox exchange (November) to $1147 (December), then retreats to $834 on December 6, 2013, after Baidu says it won’t accept bitcoin any longer
- January 2014 — Overstock.com and Zynga (game maker) announce they will accept bitcoin

TWO WAYS TO ACQUIRE BITCOINS

- Create new bitcoins by “mining”
- Trade for existing bitcoins
- Bitcoin miners engage in a set of prescribed mathematical calculations to add “blocks” to the Blockchain
- Miners who succeed in adding a block to the Blockchain automatically receive a fixed number of bitcoins as reward

MINING FOR BITCOINS: EXTREMELY COMPETITIVE

- Each unique block can only be added to Blockchain from one source, hence all miners are in competition
- Finite limit on ultimate number of bitcoins: can never exceed 21 million (about 12 million now exist): this spurs miners to move quickly
- Miners with greater computer processing power are more likely to succeed
- Investors put millions in high-end computers to mine using state-of-the-art microchips

THE BITCOIN “ARMS RACE”

- In 2014 it is highly unlikely that a single individual can mine competitively
- Competition has led to formation of mining “pools” in which multiple participants combine their efforts
- Speed at which mining can generate new bitcoins increased by 40 times between January and November 2013

TRADING BITCOIN

- Anyone can trade; you need only internet access and software program to generate a digital "wallet"
- Trader can then connect to the Bitcoin Network, which memorializes every transaction by means of the Blockchain
- Blockchain avoids duplicate bitcoins
- Each digital wallet has both a "public key" and "private key": transactions traceable to a computer by public key, but ownership of computer remains anonymous

THE DIGITAL "WALLET"

- Wallet, which is generated by a bitcoin software program, is analogous to an account for storing a user's bitcoins
- User can either become a "node" and assist in validating transactions or retain a third-party to create the wallet
- Some free wallet providers include Electrum.org, Multibit.org
- A trader can have unlimited number of wallets

2013: EXPANSION OF BITCOIN IN COMMERCE

- BitPay, Inc. by 2013 reported to have signed 8,000 small merchants world-wide
- February 2013: Ginbase reports selling one million bitcoins at $22 each in a single month
- Baidu, No. 1 website in China, accepted bitcoin for portions of its security/firewall service until December 2013, when People's Bank of China and other governmental ministries prohibited banks and payment companies (but <u>not</u> individuals) from dealing in it
- California auto dealer sells Tesla for 91.4 bitcoins, or about $103,000 (December 2013)
- WordPress, the giant blogging platform, accepts bitcoins

BITCOIN EXCHANGES

- Among largest exchanges are:
  - BTC China (the largest before People's Bank and other ministries in December prohibited banks from dealing in bitcoin)
  - Mt. Gox, previously the largest, located in Japan
  - BitBox in U.S.
  - Bitstamp in Slovenia
  - Bitcurex in Poland

REGULATORY CLIMATE BECOMES MORE ACCEPTING

- U.S. Financial Crimes Enforcement Network (FinCEN) issues regulatory “guidelines” for “decentralized virtual currencies,” and classified bitcoin miners as “money service businesses,” not regulated by federal authorities (March 2013)
- Department of Justice and Securities and Exchange Commission tell the Senate Committee on Homeland Security and Government Affairs that bitcoins are legitimate financial instruments (November 2013)
- Senate hearing had been prompted by shutdown of the “Silk Road” website, an online marketplace where millions of bitcoins were allegedly swapped for drugs and black market products (October 2013)

VENTURE INVESTMENTS IN BITCOIN

- April 2013, group led by Andreessen Horowitz invests more than $2 million in OpenCoin, Inc.
- May 2013, Union Square Ventures leads $5 million “A” round investment in Coinbase (online service that facilitates buying and storing of bitcoin)
- Lightspeed China invests $5 million in BTC China (the exchange)
- Andreessen group reports $50 million investments

WINKLEVOSS BITCOIN TRUST

- July 2013, the Winklevoss Twins file S-1 Registration Statement with SEC for an ETF called “Winklevoss Bitcoin Trust”
- Almost 18 pages of “Risk Factors”
- Negative reactions from commentators:
  - Chuck Jaffe: “more like a fund that specializes in stocks from Bulgaria than one that has mainstream applications”
  - Steven Pikelny of Morningstar: “a total gimmick”

LEGAL STATUS: FEDERAL CRIMINAL LAWS

- Not drafted with bitcoin in mind.
- Law against interstate transportation of stolen property applies only to “goods, wares and merchandise.” In *Dowling v. U.S.*, Supreme Court limited this to physical items, not intangibles like virtual currency. While “money” is covered, query whether privately issued virtual currency is “money.”
- Computer Fraud and Abuse Act outlaws use of a computer with intent to defraud in obtaining anything of value from victim, but not clear whether stealing bitcoins from an owner’s account constitutes “fraud.”

OTHER U.S. FEDERAL CRIMINAL LAWS

- Wire Fraud Statute could apply since it does not require misuse of a computer and covers both tangible and intangible property.
- But money-laundering violations only apply to "financial transaction" involving a "monetary instrument," defined as "coin or currency *of the United States or any other country*." Bitcoin has no connection to any government.

THE FUTURE (I)

- Strategies to avoid price fluctuation problems:
  1) Stimulate wider usage of bitcoin, which would improve bitcoin image and help it become "mainstream"
  2) Link an account that contains dollars, euros or other major currency to a bitcoin wallet and convert to bitcoins only in connection with an online transaction. (*See* David Wolman, *How to Save Bitcoin*.) Coinbase (in San Francisco) offers free conversion of bitcoin into other currencies (up to $1 million)
  3) Empower a central authority to establish guidelines for digital currencies. Digital Asset Transfer Authority, a self-governing industry group, was established in mid-2013 with this objective
- Bitcoin can lower payment processing costs significantly: zero to less than 2% compared with up to 3% for credit cards.

THE FUTURE (II)

- Paul Krugman: "Unlike gold or paper size currencies bitcoin derives its value solely from a self-fulfilling expectation that others will accept it as payment"
- Robin Harris: "Bitcoin or something like it is not going away"; compares with end of dollar gold convertibility in 1971 after which floating exchange rates prevailed
- Timothy Lee: "Judging bitcoin by its current applications is making the same mistake as dismissing the early Internet because Usenet and FTP were clunky" (Dec. 3, 2013)
- Still Unanswered:
  1) Is bitcoin an investment?
  2) How will it be taxed?
  3) Can it become a viable currency?
  4) Can other "cryptocurrencies" compete with or supplant bitcoin?

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